

**2019 HOUSE APPROPRIATIONS**

**HB 1020**

# 2019 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee - Education and Environment Division  
Roughrider Room, State Capitol

HB 1020  
1/10/2019  
30640

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

## Minutes:

Attachments 1-14

**Chairman Representative David Monson:** Opens hearing and attendance is taking.

**Chairman Representative David Monson:** Addresses the audience and committee members.

**(2:15) Greg Lardy:** Introduced self to committee and presented from **attachment 2**.

**(3:30) Keith Peltier:** General Manager of Pro Seed Inc. and Chairman of SBARE. Introduced self to committee and began presenting from **attachment 3**.

**(9:30) Mr. Peltier:** Thanks the committee and asks for any questions.

**(10:45) Mark Birdsall:** Introduced self to committee. We depend on the research and education to help with profitability and create a greater return on investment in our very diversified crop fields. Thanks the committee and expresses support for HB 1020.

**(13:30) Greg Lardy:** Introduced self and outlined that some testimony readers may not be present today due to a funeral. Gave an overview of **attachment 1** and began presenting on **page 17 of attachment 1**.

**(21:00) Mr. Lardy:** Continues to present **attachment 1** as testimony to the committee.

**(24:00) Mr. Lardy:** Outlines the important impact of HB 1020 as outlined in **attachment 1**.

**(26:15) Representative Mark Sanford:** What is the potential of having 1 super structure for science research?

**Mr. Lardy:** Are you referring to the Dunbar Facility?

**Representative Mark Sanford:** Yes.

**Mr. Lardy:** I know it would be a chemical research building and I would be willing to explore that idea with our facilities managers.

**(28:15) Mr. Lardy:** Thanks committee.

**(28:40) Blaine Schatz:** Director of the Carrington Research Extension Center. Introduces self to committee and addresses committee. Begins presenting **attachment 1 on page 27**.

**(30:00) Mr. Schatz:** Begins presenting **attachment 4**.

**(31:50) Justin Topp:** Fourth generation farmer out of Grace City. Introduces self and begins presenting **attachment 5**.

**Mr. Topp:** Voices support in favor of HB 1020.

**(34:45) Representative Mark Sanford:** Just a statement, I am fortunate enough to serve on a counsel that grants scholarships for students near Grand Forks and Carrington and thanks Mr. Topp for their help.

**(35:40) Kevin Sedivec:** Introduces self to committee and begins reading testimony from **attachment 6**.

**(38:30) Darrel Oswald:** Chairman of the Central Grasslands Advisory Committee and Vice chair of the North Dakota Agriculture Coalition. Introduces self and outlines **attachment 6**.

**(41:00) Timothy Faller:** Introduces self to committee and begins to present **attachment 7**.

**(44:20) Representative Mike Schatz:** What repairs were needed to be made at the Manning?

**Mr. Faller:** Basically the whole roof needs to be replaced and a few other damages have occurred due to this.

**Representative Mike Schatz:** What purpose does this building serve?

**Mr. Faller:** It is an office building and a maintenance repair center with doors that are too small.

**(45:00) Chairman Representative David Monson:** I throw research and extension all in one pot and thought you guys were the same.

**Mr. Faller:** We are all on a team except for the budgetary process.

**(46:10) Derrick Dukart:** Past advisory member for the Dickinson Research Extension Center. Introduces self to committee and begins to present from **attachment 7**.

**(49:30) Chris Schauer:** Director of Hettinger Research Extension Service. Introduces self to committee and begins presenting **attachment 8**.

**(52:35) Curt Stanley:** Introduces self, points out that it is his first time testifying. Begins presenting **attachment 8** on the Hettinger Research Extension Center. Voices support of HB 1020.

**(54:15) Randy Mehlhoff:** Introduces self to the committee and begins presenting **attachment 9** involving the Langdon Research Extension Center.

**(58:20) Leon Hiltner:** Introduces self as an advisory committee member for the Langdon Research Extension Center. Begins to explain that there were no pesticide resistant crops when he began farming.

**Mr. Hiltner:** It is very important as a producer that I have access to this program. I must mention Harris Hall, which is a research science building at North Dakota State University (NDSU).

**(1:00:15) Mr. Hiltner:** The research centers are very important. Fifteen years ago we spent \$35 million on a new green house in order to research specific diseases and problems associated with wheat and agriculture, but we need a new facility, the old one is outdated.

**Mr. Hiltner:** That is my speech on Harris Hall and the importance it serves to research related to our agriculture in the state of North Dakota.

**Chairman Representative David Monson:** Any questions from the committee?

**(1:03:00) Mr. Hilton:** Expresses support for HB 1020 and shares the importance for a modern research facility at NDSU.

**(1:03:45) Shana Forster:** Director of the North Central Research Extension Center (NCREC) in Minot. Introduces self to committee and begins to present **attachment 10**.

**(1:07:00) Chairman Representative David Monson:** I have a question about grapes. What varieties are you developing?

**Ms. Forster:** Native riparian grapes in North Dakota that have a cold tolerance and also a few from Minnesota.

**Chairman Representative David Monson:** I have 25 plants for 8 varieties each.

**Ms. Forster:** Those would be parents in some of our crops.

**(1:08:30) Blake Inman:** Introduces self, thanks committee for the funding and explains the importance it has to the NCREC. Begins to present and outline **attachment 10** on NCREC.

**Mr. Inman:** I use a lot of the research from NCREC and NDSU to help in my farming.

**(1:11:15) Jerry Bergman:** Introduces self and thanks committee for their time. Begins to present **attachment 11** on the Williston Research Extension Center (WREC).

**(1:13:00) Chairman Representative David Monson:** Expresses support for Mr. Bergman and states their long past of knowing each other.

**(1:13:50) Tom Wheeler:** Chairman of the Joint Advisory Committee of WREC and Eastern Agricultural Research Center (EARC). Introduces self to committee and begins to present from **attachment 12** about the WREC.

**(1:16:30) Chairman Representative David Monson:** Can you explain pulse crops?

**Mr. Wheeler:** Lentils, green peas, garbanzo beans and a few others. We just got a new county agent in Williston on January 2<sup>nd</sup>. Chose Williston due to the diversity of crops in Western North Dakota compared to Eastern North Dakota.

**(1:18:10) Mr. Lardy:** I will call on Paul Mathiason.

**(1:18:35) Paul Mathiason:** Chairman of the North Dakota Agriculture Coalition. Introduces self to committee and begins presenting from **attachment 13** on the Agriculture Coalition. Expresses support for the passing of HB 1020 and thanks committee.

**(1:20:25) Erika Kenner:** Farmer in Leeds, introduces self as a first time testifier, hands out **attachment 14** and begins to present **attachment 14** about the importance of funding research centers and HB 1020.

**(1:24:40) Mr. Lardy:** We are ready to take a break.

**Chairman Representative David Monson:** Calls a quick recess to the committee.

# 2019 HOUSE STANDING COMMITTEE MINUTES

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HB 1020  
1/10/2019  
30649

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

### Explanation or reason for introduction of bill/resolution:

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### Minutes:

Attachments 1-5

**Chairman Representative David Monson:** Gavels in and calls meeting to order. Representative Schmidt is sitting in on the water committee hearing.

**(00:50) Mr. Lardy:** Introduces a group that will be presenting to the committee.

**(1:30) Pete Hanebutt:** Expressed support for the bill and referred back to attachment 1 (recording #30640 1/10/19 AM).

**(2:30) Neil Fisher:** Commissioner at the ND Wheat Commission. Expresses support for HB 1020. We have 24 million acres and only second to Iowa who beat us by 300K acres only.

**Mr. Fisher:** We have a much more diverse crop range than Iowa, which makes this very important. Thanks the committee.

**(4:10) Sarah Lovas:** Introduced self as an independent farmer and states the importance of the role that the research conducted helps farmers. Langdon Research Center is a leader in canola research and their work is widely used.

**Ms. Lovas:** If you deliver low protein wheat to the elevators, you can get severe disproportions. WREC has provided research on many crops.

**(7:10) Ms. Lovas:** Expresses support for HB 1020 and reiterates the value that the extension research centers bring.

**(8:00) Dave Miller:** Advisory board for the North Central Research Extension Center, farmer and businessman from Donnybrook. Introduced self and began presenting from **attachment 1**. Expressed support for HB 1020.

**(11:15) Blake Inman:** Introduces self and begins to present from **attachment 2**. Expresses support for HB 1020.

**(14:05) Casey Bitz:** Family Farm operations, introduces self as a young farmer and did not originally did not attend an agriculture research center. Explains that he uses the NDSU extension centers for support and help. Expresses support for HB 1020.

**Chairman Representative David Monson:** Comment about NDSU being a good school.

**(15:50) Julie Ellingson:** ND stockman's association. We support the budget that is before you and look forward to working with you.

**(16:50) Kayla Pulvermocher:** Passed out written testimony for **attachment 3** and expresses support for HB 1020.

**(18:15) Mr. Peltier:** Addresses committee with his statement of need and returns to attachment 1 (recording #30640 1/10/19 AM). about the importance and how investing in this research extension program will bring a great return for the state.

**(19:10) Mr. Lardy:** Addresses committee and mentions that the NDSU Research Extension Program is a pivotal program used statewide. Announces that they are closing the hearing.

**(20:50) Chairman Representative David Monson:** Closes portion of the hearing on Research Extension Program.

**(21:10) Chairman Representative David Monson:** Opens portion of the hearing for the Agronomy seed farm hearing. Page 55 in attachment 1 (recording #30640 1/10/19 AM).

**(22:15) Greg Lardy:** Calls on Brian Otteson.

**(22:30) Brian Otteson:** Director of Agronomy Seed Farm in Carrington, North Dakota. Passed out **attachment 4** for the Agronomy Seed Farm and began to give an overview and present **attachment 4**.

**(27:15) Chairman Representative David Monson:** Any questions from the committee? We can kick this budget out very quickly.

**Chairman Representative David Monson:** Anyone else wants to testify in support? No more testimonies.

**Chairman Representative David Monson:** Any opposition? There was no opposition.

**(29:10) Chairman Representative David Monson:** Closes hearing on Agronomy Seed Farm. Any other discussion? Mentions the schedule for the afternoon portion.

**(30:15) Chairman Representative David Monson:** Thanks testifiers and committee members and closes hearing and testimony.

**Attachment 5 was passed out to the committee but not discussed.**



# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee - Education and Environment Division Roughrider Room, State Capitol

HB 1020  
1/10/2019  
30668

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

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### Minutes:

Attachments 1-16

**Chairman Representative David Monson:** Calls hearing to order and notes that there is a quorum.

**President Dean Bresciani:** Introduces himself and gives a short overview of who will be presenting.

**(1:00) Keith Peltier:** State Board of Agricultural Research and Education (SBARE) Chairman. Introduces self to committee and begins to give a short background of pulse crops and Carrington Research Extension Center. Begins to present some testimony from **attachment 1**. This attachment was turned in at the conclusion of the hearing.

**(3:30) Mr. Peltier:** \$1.2B being added back into the state, with over \$20B back into to the state over the next 20 years by transforming unusable land into usable land.

**Mr. Peltier:** About 15K farmers attended the meetings in 2014 and about 90% of them used the Extension Services.

**(5:00) Mr. Peltier:** Cis-Nematode resistant soybeans bring a 40% increase in soybean yield, which is another thing the services do. The 4-H's also give back to the community and help educate the youth.

**(6:30) Chairman Representative David Monson:** Any questions for Mr. Peltier? No questions.

**(6:55) Greg Lardy:** Thanks the committee for the support of their budget in 2017. Introduces self to committee as the interim director of the NDSU Extension. Begins to present testimony from **attachment 2**, which was turned in at the conclusion of the hearing.

**Mr. Lardy:** In 2016 a review was completed and a final report was finished in 2018 and over 30 extension services were reported for expansion.

**Mr. Lardy:** We are required to report our findings and we have continued to do this. The mission of the NDSU Extension is to improve agriculture through research.

**(10:05) Mr. Lardy:** The SBARE recommended an expansion of the NDSU Extension program for an initiative that would digitalize the information to make for quicker and easier transfer and use of information. This would be a onetime fee of \$350K (see 10:30 to clarify). Total request for this initiative is \$870K.

**Mr. Lardy:** We also would like to mention a compensation package for our employees to recruit and retain.

**(12:15) Mr. Lardy:** Nearly 7,000 people have downloaded the NDSU Extension application. Diabetes is expected to cost the state over \$700M annually and our Extension services help teach and create a healthier lifestyle for many people across the state.

**Mr. Lardy:** Concludes testimony and asks for any questions.

**(14:15) Donnell Preskey:** ND Association of Counties. Expresses support for HB 1020. Introduced self to committee and began to present **attachments 3**. Also briefly touches on **attachments 4 and 5** for Charlie Adams, who could not be in attendance.

**(19:15) Bruce Strinden:** Morton County Commissioner and hold the Extension portfolio for Morton County. Introduces self to the committee and begins to present **attachment 6** regarding the NDSU Extension Service.

**(21:55) Daryl Dukart:** Rancher and County Commissioner in Dunn County. Introduces self, proposes support for HB 1020 and begins to read testimony from **attachment 7**.

**(27:40) Kayla Pulvermacher:** Representing members of the North Dakota Farmer's Union. Introduces self to committee, proposes support in favor of HB 1020, support for SBARE and begins to present testimony from **attachment 8**.

**(30:10) Dennis Haugen:** First Vice President of the ND Grain Growers Committee. Introduces self, proposes support in favor of HB 1020 and reads short testimony from **attachment 9**.

**(31:45) Tom Bobine:** Announces that he is here in place of Commissioner Doug Goehring, introduces self to the committee and begins to present testimony from **attachment 10**.

**(35:40) Vice Chairman Representative Jim Schmidt:** You mentioned industrial Hemp, any idea as to why we are getting all of these messages about industrial Hemp and the Board of Pharmacy.

**Chairman Representative David Monson:** I have been sending them to the Agriculture Commissioners office to make sure it meets the guidelines of other current bills being revised.

**Mr. Bodine:** We have current staff working on this with legislative staff working on Hemp and CBD, but that is for a different time.

**(38:00) Dave Miller:** Farmer and Businessman from Donnybrook, ND. Introduced self to committee, proposed support in favor of HB 1020 and began to read testimony from **attachment 11**.

**(44:20) Chairman Representative David Monson:** Thanks Mr. Miller for his passionate testimony and asks if there are any questions.

**(44:55) Naeem Kalwar:** Extension Soil Health Specialist for the Langdon Extension. Introduces self to committee and expresses strong support in favor of HB 1020. Begins to present testimony from **attachment 12**.

**(49:00) Chairman Representative David Monson:** Mentions his long relationship with Mr. Kalwar and his great contributions to the study of soil health. Has put together a gypsum project to create alkali soil more available.

**Mr. Kalwar:** I provided him with the information that the coal-fired plants can convert calcium sulfite into calcium sulfate. Chairman Representative David Monson helped me gain access to information and waste products from these coal fired plants and allows the use of gypsum, which is used to reclaim these soils.

**(51:45) Vice Chairman Representative Jim Schmidt:** I tried to work with the Game and Fish Department to work with land owners to work with dense nesting cover on saline seep areas and we found out that on 2 separate occasions the Outdoor Heritage Fund has been approached about this issue and turned down both times.

**(53:00) Mr. Kalwar:** Refers to **attachment 12** to explain high salt levels on crop lands.

**Vice Chairman Representative Jim Schmidt:** They are sitting on \$13M and it could be used for that.

**(54:00) Wes Frederick:** Farmer and serve on the ND State Soil Committee. Introduces self to committee and begins to read testimony from **attachment 13**. Expresses support for HB 1020.

**Chairman Representative David Monson:** We may have to call you back when we start working out details.

**(57:50) Taya Spelhaug:** NDSU Extension Citizens Advisory Council and the TechSpark Manager of North Dakota at Microsoft. Introduces self to committee as an advocate for 4-H and begins to present testimony from **attachment 14**.

**Ms. Spelhaug:** Expresses overwhelming support in favor of HB 1020.

**(1:02:25) Nora Larson:** East Roughriders 4-H club member and North Dakota State 4-H ambassador. Introduces self to committee and begins to present testimony in favor of HB 1020 on **attachment 15**.

**(1:06:25) Chairman Representative David Monson:** My oldest son was a 4-H ambassador as well.

**(1:07:25) Vawnita Best:** Ranchers southeast of Watford City. Introduces self to committee and begins to present testimony from **attachment 16**.

**(1:12:00) Representative Mark Sanford:** Makes a comment about the McKenzie County Extension Agent of the past being very friendly and a hard working individual.

**Chairman Representative David Monson:** Did you actually hire an agent in the end?

**Ms. Best:** I cannot answer that, but I believe there is someone graduating this spring who will be accepting this position.

**(1:14:45) Chairman Representative David Monson:** We are having a hard time finding Extension Agents.

**Chairman Representative David Monson:** Would anyone else like to testify?

**(1:16:00) Ryan Pederson:** Farmer from Rolette. My peers claim they don't need extension agents because they have private crop consultants, but the crop consultants are the ones who attend the extension programs, which then gets passed on down the line.

**Mr. Pederson:** I use the application quite often to obtain information on how to diagnose certain situations. The extension program evolves with agriculture and plays a pivotal role.

**(1:19:00) Chairman Representative David Monson:** Any others?

**(1:19:15) Sarah Lovas:** I wanted to explain how crop consultants utilize the extension programs and how (see recording) information I gather from research from the ag .....

**Ms. Lovas:** We have access to this information because it was researched at the Extension Station.

**(1:21:25) Duane Hauck:** Worked for the NDSU Extension Service. Introduces self to committee and expresses strong support in favor of HB 1020 and thanks the committee members and testifiers for caring about the NDSU Extension Services.

**(1:23:00) Chairman Representative David Monson:** Thanks Mr. Hauck for his words.

**Mr. Hauck:** I have met the members of the committee over my time as a member working for the NDSU Extension Service and I appreciate your support.

**Chairman Representative David Monson:** Mr. Lardy found himself in charge of two positions since a recent member was moved up, so he has been busy and helped gather us all together.

**(1:24:55) Mr. Lardy:** Thanks the committee for their time and gives a glimpse into a few of the testimonies given for HB 1020.

**(1:25:40) Chairman Representative David Monson:** Closes the hearing overview for HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

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Roughrider Room, State Capitol

HB 1020  
1/11/2019  
30694

- Subcommittee  
 Conference Committee

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## Minutes:

Attachments 1-5

**Chairman Representative David Monson:** Opens meeting and attendance is taken.

**(1:20) President Dean Bresciani:** Introduces self as the President of North Dakota State University and introduces the next speaker, Mark Jirik. Thanks the committee for having him.

**(1:55) Mark Jirik:** Director of the Northern Crops Institute (NCI). Introduces self to committee and gives a short overview of NCI.

**Mr. Jirik:** We are at a crossroads, we have recently cut about 50% of our staff and are trying to move forward through the cuts. We are working on ways to expand domestically and internationally.

**Mr. Jirik:** Passes out **attachments 1 and 2** to the committee. Begins presenting **attachment 1** on the state of NCI.

**(5:30) Mr. Jirik:** Presents the benefits and future goals of NCI outlined on **page 2 of attachment 1**.

**(7:30) Mr. Jirik:** Outlines the five main topics on **page 3 of attachment 1**.

**(8:50) Chairman Representative David Monson:** I see that you want to promote one FTE over another, how do you fund that?

**Mr. Jirik:** From funding through other states.

**Chairman Representative David Monson:** Have you got the ability to charge other states more?

**Mr. Jirik:** We have tried over the past few years and it does cost more to travel from other states, but we generally demonstrate our value. We need to develop some innovative programs and break away from the past.

**(10:20) Chairman Representative David Monson:** So your funding comes from other state's check off groups?

**Mr. Jirik:** It comes from both and we had participants from 13 or 14 countries as well.

**Chairman Representative David Monson:** Can you get us those breakout figures?

**(11:00) Mr. Jirik:** Yes, we could do that.

**Chairman Representative David Monson:** Your executive budget increases very minimal.

**Mr. Jirik:** Part of that is the budget cut and the request for the planned salary increase bring it up.

**(12:00) Representative Mike Nathe:** Can you explain exactly what you guys do?

**Mr. Jirik:** We do courses for buyers, we did 14 courses this last year, explaining how to buy commodities of this region. The nuts and bolts of how commodity markets work. For example, there was a new soybean oil created and we work to get companies and investors into these.

**(13:45) Representative Mike Nathe:** For private and public sectors?

**Mr. Jirik:** Yes.

**(14:00) Chairman Representative David Monson:** I personally used you when my son made a cinnamon pasta and we worked with you guys, but it never really got anywhere.

**(15:00) Chairman Representative David Monson:** There's an FTE increase in here and we usually always wonder why. We will probably scrutinize some of the newer information and looking at some of the hidden policy in the green sheets.

**Chairman Representative David Monson:** Any other questions for the committee?

**(16:10) Phil Murphy:** I represent the ND Soybean Growers Association. I want to thank you for your prior support.

**Mr. Murphy:** Just this fall, about 60 different companies involved in soybeans came into NCI from over 10 different countries. NCI is a linchpin for the soybean market and helps us market around the entire world.

**(18:45) Chairman Representative David Monson:** Question for Mr. Jirik, how close do you work with the North Dakota Trade Office?

**Mr. Jirik:** They will bring in the groups and we will host them.

**(1:19:35) Chairman Representative David Monson:** How many scientists and staff full-time employees (FTE) do you have?

**Mr. Jirik:** We have 1 administrator, 1 accounting clerk, 2 educational program managers, communications and marketing director, a consultant technical director, 1 pulse specialist, a food scientist, a processing manager and a food technologist.

**Chairman Representative David Monson:** The new FTE would do what?

**Mr. Jirik:** A program manager to help educate and the feed mill at NDSU is essentially a NCI building.

**(21:40) Greg Kessel:** Northern Crops Councilman. As you drive across the state, you see that we have changed from traditional crops and integrated new and diverse crops. With this brings marketing challenges and NCI is a huge part of relaying these changes.

**Mr. Kessel:** We bring new customers in, show them where it is grown, have them meet the growers and show them how to buy the crops and use them.

**(23:30) Mr. Kessel:** We have had new customers come in and want to learn and fine where to get these new crops from, so we explain it all to them.

**Mr. Kessel:** We want to give people good, healthy foods and need to evolve to do that.

**(24:40) Representative Mike Nathe:** Does the state of MN or other states give you funding?

**Mr. Kessel:** Yes, they have been very supportive along with many of the other states involved like Montana and South Dakota.

**(25:25) Vice Chairman Representative Jim Schmidt:** How does the NCI deal with non-GMO versus GMO?

**Mr. Kessel:** We will work with whoever to find the exact product they need, so we are not just mainstream and we work with all sides.

**Vice Chairman Representative Jim Schmidt:** Do you plan to move away from GMO?

**Mr. Kessel:** Feeding the masses makes it hard to move away completely from GMO, but those with a disposable income can utilize more expensive non-GMO's.

**(27:00) Chairman Representative David Monson:** So you are on the barley council?

**Mr. Kessel:** Yes.



**(27:20) Chairman Representative David Monson:** Gives a short story relating to his time involving barley. What can you do to help me here with my six-row barley?

**(29:00) Mr. Kessel:** The changing face of the barley sector has a huge part to play in the beer and craft beer industry demands and revolution. Two-row barley is the trend moving forward.

**(31:00) Vice Chairman Representative Jim Schmidt:** Mr. Chairman, are these GMO?

**Chairman Representative David Monson:** No, there is no such thing as GMO barley.

**Representative Tracy Boe:** Mr. Chairman, you need to be direct and ask how to get a constellation contract.

**(31:50) Chairman Representative David Monson:** Someone in Florida wanted to buy some malt barley, but it was a very small market and we need to get some more barley markets.

**(33:15) Mr. Kessel:** There is definitely a growing market for food barley due to its properties of gut health.

**Chairman Representative David Monson:** What is the gluten content of barley?

**Mr. Kessel:** It varies, but I suppose there is a little.

**(34:20) Representative Mark Sanford:** You are authorized for additional personnel, authorized for increases in compensation and your revenue source submitted is reduced in other areas, refresh my memory please.

**Mr. Kessel:** They are cuts and the state of Minnesota gives us around \$50K. So we want to know how to add courses when we either charge for our courses or are usually reimbursed.

**Representative Mark Sanford:** As you raise resources, I am assuming you can go above and beyond and use the resources you have?

**(36:20) Mr. Kessel:** Correct.

**Chairman Representative David Monson:** The governor's recommendation gives authorization to transfer funds from you guys to transfer funds to other research extension. If they give you money to develop something for barley or soybeans. I don't know if that is a good idea.

**(37:35) Mr. Kessel:** I am not addressing that specific point because we work very closely with NDSU.

**Representative Mike Nathe:** I think it is a common theme in these budgets that the Governor's recommendation has been transferring money.

**(38:40) Alex Cronquist:** As far as this goes with the authority to transfer resources, it has existed in the past.

**Representative Mark Sanford:** That authorization would be through the board of Higher Education.

**(39:45) Representative Tracy Boe:** They have transferred authority for a while, and has been to fulfil grants applied for and received and involves FTE's.

**Representative Mike Nathe:** Did you have this last session?

**Alex Cronquist:** Yes, that is correct.

**(41:00) Chairman Representative David Monson:** Reported to the office of management and budget.

**Representative Mark Sanford:** It says on FTE it has to go to the board of Higher Education.

**(41:35) Alex Cronquist:** Transfer authority of appropriation money and then there is a transfer of FTE position adjustments.

**Chairman Representative David Monson:** That has been in there and we tried to take that out last session.

**Alex Cronquist:** Those sections are in there as drafted by legislative council.

**(42:30) Vice Chairman Representative Jim Schmidt:** When it involves transfer of money it is SBARE, when it involves FTE it goes through the board of Higher Education?

**Alex Cronquist:** Correct, the authority goes to the board of Higher Education, but in practice they generally do it themselves and then it is okayed.

**(43:40) Mr. Kessel:** It would not sit well with our constituent states if money was put into the NCI budget and then transferred.

**Vice Chairman Representative Jim Schmidt:** It would not sit well? What would be your suggestion?

**Mr. Kessel:** In the case of the NCI it would have to be approved by the NCI board.

**(44:50) Vice Chairman Representative Jim Schmidt:** Why would the governor approve that?

**Mr. Kessel:** I do not know that.

**(45:35) Mr. Bresciani:** They are sent to that state board, but it would be impossible for them to approve every change in FTE.

**Chairman Representative David Monson:** Any opposition? None oppose.

**Chairman Representative David Monson:** Closes committee hearing on this portion of the NCI budget.

**(47:30) Dean Bresciani:** Introduces the Great Plains Institute to the committee and introduces the director.

**(48:10) Denver Tolliver:** Director of NDSU's Upper Great Plains Transportation Institute. Announces that he has prepared a detailed testimony and begins to read from **attachment 3**.

**Mr. Tolliver:** Outlines the expected budget on **page 3 of attachment 3**.

**(55:10) Chairman Representative David Monson:** We could have your special or other funds in here as \$1B and it would not matter because you would not get that money. Are you asking for enough in the green sheets?

**Mr. Tolliver:** I think it would be sufficient. I try to forecast these grants, but they are all subject to budget limitations.

**(56:30) Representative Mark Sanford:** You showed stability with customers you have some idea of their needs, right?

**Mr. Toliver:** Yes, that is correct. They are generally multi-year grants and we have not received the grant expected in October.

**(57:40) Chairman Representative David Monson:** A lot of those special funds are coming from North Dakota Department of Transportation (DOT). As soon as it passes through an agency and goes to you it goes from general funds to special funds.

**Mr. Tolliver:** That is correct. Continues to present **page 3 of attachment 3**.

**(1:03:25) Chairman Representative David Monson:** Why won't you receive the October grants soon?

**Mr. Tolliver:** There was a lot of pressure in the Federal Department of Transportation to make cuts and create savings and it also has to do with the Government Shutdown. We will probably receive it sometime in the spring.

**(1:05:05) Chairman Representative David Monson:** If these grants are delayed long enough, cut or do not receive them at all, will this affect your employees and salaries, will you be forced to lay off?

**Mr. Tolliver:** It would greatly hurt us and our funding to the students. It would probably cause us to close down some positions and allow us to keep unfilled positions open and we would like to fill those positions. I do expect to receive the grants we have not yet gotten.

**(1:06:40) Mr. Tolliver:** We request that the legislature not cut our general funds budget any further even though it calls for another 5% cut. Continues to outline the funds breakdown on **page 4 of attachment 3.**

**(1:09:35) Chairman Representative David Monson:** Besides having federal rail inspectors and state rail inspectors and other companies having inspectors, are you saying that you have inspectors?

**Mr. Tolliver:** No, we would not do the inspections and just do the research on the inspection findings.

**Chairman Representative David Monson:** It seems to me that you should be going to Public Service Commission (PSC) or government Operations to ask for funds like the Department of Transportation. They should be paying you, why does PSC get off free but Department of Transportation does not?

**(1:11:45) Mr. Tolliver:** That is the way it used to be, but most of their funding was cut out except for the track inspector.

**(1:13:00) Mr. Tolliver:** Continues presenting testimony from **page 5 of attachment 3.**

**(1:18:00) Vice Chairman Representative Jim Schmidt:** How much do the rumble strips cost us?

**Mr. Tolliver:** I will call up our expert.

**(1:19:05) Tim Horner:** Program Director for Upper Great Plains Transportation. You are asking about the outside and middle rumble strips, correct?

**Vice Chairman Representative Jim Schmidt:** Yes.

**Mr. Horner:** In the initial attempt to address distracted driving it may have been put into a road that did not have up to date compaction, which would be compensated for in the newer construction.

**(1:20:50) Vice Chairman Representative Jim Schmidt:** The ones on the side of the roads are great, but not the middle ones.

**(1:21:05) Representative Mike Schatz:** You are needing \$975K to evaluate county roads, what is the total savings of that? If you do not do it, you will have to spend a lot to repair.

**Mr. Tolliver:** Preventing would be much more cost effective. If I could have a few days to gather the information for you.

**Representative Mike Schatz:** That would be great.

**(1:22:30) Chairman Representative David Monson:** You will have at least a week to get those numbers to us. We would like that information for sure.

**Representative Mike Nathe:** You are familiar with 1066 the state wide infrastructure bill?

**Mr. Tolliver:** Yes, but not the actual provisions.

**Representative Mike Nathe:** There is money in there to revisit every two years and the \$975K would cover it?

**(1:24:15) Mr. Tolliver:** Yes, that is correct. Returns to presenting testimony on **page 8 of attachment 3.**

**(1:27:00) Mr. Tolliver:** Quickly gives an overview of **attachment 4.**

**Vice Chairman Representative Jim Schmidt:** Do you keep track of how many hits you get?

**Mr. Tolliver:** Over 50% of the counties utilize this.

**(1:29:20) Vice Chairman Representative Jim Schmidt:** Are we getting our money's worth for the public and the counties?

**Mr. Horner:** Only around 50% use it on a daily basis, but yes we are getting our money's worth. We could not continue our studies in the future without this database.

**Vice Chairman Representative Jim Schmidt:** Would there be any need to use it while traveling for the general public?

**(1:30:40) Mr. Horner:** I would say no due to the simplicity of Google, but this will continue to have higher levels of use and specialized details.

**Vice Chairman Representative Jim Schmidt:** My point is that it needs to be used.

**(1:31:30) Mr. Tolliver:** Returns to written testimony on **page 13 of attachment 3.**

**(1:32:30) Representative Mike Nathe:** When you say soon, how long?

**Mr. Tolliver:** Automated trucks will be up and running within 5 years.

**Representative Mike Nathe:** Is it not a little early to do a study now then?

**Mr. Tolliver:** No, we are trying to see how it will impact our travel and planning. It is not a onetime study, but to establish a knowledge on this. We can then seem to find funding from vehicle manufacturers.

**(1:34:10) Representative Mike Nathe:** Shouldn't we wait until that is a little close with how quickly technological findings change?

**Mr. Tolliver:** The purpose is to establish a strong base because automated trucking services is very much on the horizon. Continues to present on **page 15 of attachment 3.**

**(1:36:20) Representative Mike Schatz:** Is this on just 4 lane roads or also on 2 lane roads?

**Mr. Tolliver:** So far it is on limited access highways with 4 lanes and so far they are hard to use on 2 lane roads.

**(1:37:05) Mr. Tolliver:** There were at least 3 companies interested in platooning on I-29 just last year. So primarily on interstates and larger roads.

**Chairman Representative David Monson:** Makes a comment about 2016 technology that would steer the car automatically or disengage cruise control if something was too close to the front of the vehicle.

**(1:38:45) Mr. Tolliver:** We would look at the logistic side of platooning larger vehicles. Explains **page 15 in attachment 3**.

**(1:41:10) Chairman Representative David Monson:** So you are looking at \$250K a year?

**Mr. Tolliver:** Yes, and we could even link with larger vehicle manufacturers and other start-up companies working on this as well. Passes out **attachment 5** as a reference.

**Chairman Representative David Monson:** Calls a quick recess.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee - Education and Environment Division Roughrider Room, State Capitol

HB 1020  
1/11/2019  
30701

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachments 1-4

**Chairman Representative David Monson:** Opens meeting.

**Mr. Tolliver:** I am finished with my testimony.

**(00:30) Chairman Representative David Monson:** Any more questions or testimonies?

**(00:55) Russ Hanson:** Introduces self, passed out **attachment 1** and expressed support for HB 1020.

**(2:20) Representative Mark Sanford:** Would you be available on the 29<sup>th</sup> of January to visit with us?

**Mr. Hanson:** I may be unavailable, but I can get back to you.

**(2:45) Kayla Pulvermacher:** Introduced self to committee, passed out **attachment 2** and expressed support for HB 1020.

**(3:55) Linda Svihovec:** Introduced self to committee, passed out **attachment 3** and expressed support for HB 1020 and the funding of the Upper Great Plains Transportation Institute budget.

**(6:05) Chairman Representative David Monson:** There is no charge for using this Geographic Roadway Inventory Tool (GRIT) is there?

**Ms. Svihovec:** There is currently no charge I believe.

**(7:40) Geoff Simon:** Introduces self to committee and states that there are funds allocated in HB 1066 for the counties. We utilize the service that monitors oversized trucks in the oilfields and this has been spreading throughout the state. GRIT is a very valuable tool and we support its funding.

**(9:15) Representative Mike Nathe:** They pay the permit system and the money goes to the highway patrol?

**Mr. Simon:** There are 2 permit systems, the Highway Patrol operates the ePermit for state highways and we operate the load pass permit which is county and township roads.

**(9:45) Chairman Representative David Monson:** I forgot to remind you of the sign-up sheet.

**(10:20) Larry Severson:** I grow soybeans and have to use smaller roads and they are very important to me. I am charged with promoting roads all across the state and we fully support the Upper Great Plains funding.

**(12:00) Steve Salwei:** North Dakota Department of Transportation Programs Director. Introduced self to committee, passed out written testimony on **attachment 4** and expressed support for HB 1020.

**(13:45) Phil Murphy:** Introduces self to committee as a member of the North Dakota Soybeans committee. Expresses support for the asset management and support for HB 1020.

**(15:05) Chairman Representative David Monson:** Is there any opposition? No opposition.

**Chairman Representative David Monson:** Closes the hearing.



# 2019 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee – Education and Environment Division  
Roughrider Room, State Capitol

HB 1020  
1/29/2019  
31650

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

## Minutes:

Attachments 1-3

**Chairman Representative David Monson:** Opens the meeting on HB 1020 and we will begin working on the main research center using the green sheets.

**Chairman Representative David Monson:** The first thing is the executive budget highlights. It includes the employee salary and benefits, but we have to wait on that yet.

**(1:25) Chairman Representative David Monson:** Adjust funding for miscellaneous expenses was the Governor's request to reduce the budget. What was the \$2M in other funds?

**Mr. Cronquist:** One second.

**Larry Martin:** The \$2M was switched to other funds to help raise extra funds.

**Chairman Representative David Monson:** So it is truly special funds then. Anything from federal funds?

**Mr. Martin:** It could be.

**(2:40) Vice Chairman Representative Jim Schmidt:** Other funds are special funds now?

**Chairman Representative David Monson:** They could be.

**Vice Chairman Representative Jim Schmidt:** Could we get a break down?

**(3:00) Chairman Representative David Monson:** I would say special funds are those raised from industry, fees, federal funds within other and SIIF (Strategic Investment and Improvement Fund) could be something too, but I do not know where that crosses the line.

**Mr. Cronquist:** SIIF fund is a special fund that would go under other funds, but it would be identified if it was SIIF.

**Mr. Martin:** SIIF cannot be used for ongoing funds, which this is.

**Vice Chairman Representative Jim Schmidt:** Is there any laundered general funds?

**(4:15) Mr. Martin:** I do not believe so, but I can make sure.

**Chairman Representative David Monson:** This would be for ongoing expenses and the \$2M was taken from operating expenses and moved.

**Mr. Cronquist:** Correct.

**(4:55) Chairman Representative David Monson:** So it gives them the authority to go out and find the money. To expect them to find it may be tough and a bit of a stretch though. They have a shot at getting federal funds, but to expect industry to kick in money is farfetched.

**Representative Bob Martinson:** Where are we in the green sheets?

**Chairman Representative David Monson:** Budget number 640 on page 1.

**(6:45) Chairman Representative David Monson:** If we tell you to raise \$2M in special funds in operating, is there a chance you can do that?

**(7:10) Greg Lardy:** Our scientists are very good at finding grants for research, but it is harder to find funds for operating costs. Passes out **attachment 1**.

**Chairman Representative David Monson:** So the main research station has people that could gather federal funds?

**Mr. Lardy:** Yes, we are seeking grants from the FDA (Food and Drug Administration) and other federal agencies, but a lot of times they are seeking very specific research.

**(8:25) Chairman Representative David Monson:** The grants usually have operating costs built in though?

**Mr. Lardy:** That is correct.

**Chairman Representative David Monson:** If we gave you authority for \$2M, is that enough? We can give you the authority for more as well and what is a realistic number?

**(9:25) Mr. Lardy:** I think the \$3M would be a realistic figure.

**Vice Chairman Representative Jim Schmidt:** What percentage of your budget is salary and benefits?

**Mr. Lardy:** Around 80% is salary and benefits.

**Vice Chairman Representative Jim Schmidt:** Anything over 75% is risky.

**(10:05) Mr. Lardy:** We try to keep that number down.

**Vice Chairman Representative Jim Schmidt:** What percent are your fixed expenses?

**Mr. Lardy:** What do you mean exactly?

**Vice Chairman Representative Jim Schmidt:** Rent and vehicles.

**Mr. Lardy:** We would have to look.

**(10:45) Vice Chairman Representative Jim Schmidt:** You lose a lot of flexibility when your debt to income ratio is high.

**Chairman Representative David Monson:** If they think \$3M is reasonable; I think we put it in.

**(11:40) Chairman Representative David Monson:** We have been seeing where the Governor took money out and then restores it in another spot.

**Mr. Martin:** The part that was restored was the \$2M special and \$2M general. We would be restoring some funds with the increase to \$3M in other funds.

**Chairman Representative David Monson:** He did not restore it anywhere because it has to be raised.

**Vice Chairman Representative Jim Schmidt:** The \$3M is under other funds?

**(12:40) Chairman Representative David Monson:** It could be anything from special or federal funds.

**Vice Chairman Representative Jim Schmidt:** It could be from fees as well.

**Mr. Cronquist:** Other funds is anything that is not general fund.

**(13:20) Chairman Representative David Monson:** I liked the breakdowns we used to do, but it will work. Reduced funds for bond payments. Was from retiring debt or was it from reduced bond payments?

**Mr. Martin:** The amount coming is from the current biennia's bond payment. We then put in the next biennium bond payment.

**Mr. Cronquist:** It is just a reduction in the bond payments.

**(14:20) Chairman Representative David Monson:** Reduces capital funding from special funds is next.

**Representative Mark Sanford:** You were a good school administrator.

**Chairman Representative David Monson:** Reduces capital funding from special funds by \$6M.

**Mr. Martin:** Those were from one-time funding projects and were removed from the base.

**(15:40) Chairman Representative David Monson:** So that is okay then. The next item adds SIIF money for extraordinary repairs. Why is this not in their base?

**Mr. Martin:** This was a request over what was in their base and they have a large list of maintenance and it was SIIF because it was a one-time request.

**(16:50) Mr. Lardy:** We maintain a list of repairs and maintenance.

**Mr. Cronquist:** I will print that out.

**Chairman Representative David Monson:** We will put that on hold until it is passed out.

**(17:35) Chairman Representative David Monson:** Additional income appropriations would provide transfer authority and this is where we get into sticky wickets here.

**Chairman Representative David Monson:** They have made a case to why they need transfer authority. You have had this transfer authority before?

**Mr. Lardy:** Correct.

**Vice Chairman Representative Jim Schmidt:** How much have you used it?

**(18:50) Mr. Lardy:** We have not used it in the past.

**Vice Chairman Representative Jim Schmidt:** Would there be a need to keep this?

**Mr. Lardy:** We may need it due to flexibility.

**(19:20) Chairman Representative David Monson:** If we gave you the authority to raise \$3M, you could feed some of that to Williston for their project that we cannot fund.

**Mr. Lardy:** Correct.

**Chairman Representative David Monson:** It has been there in the past and they have not abused it. Otherwise they will have to come to the budget session.

**(20:20) Vice Chairman Representative Jim Schmidt:** I have no reason to take it out.

**Representative Mike Schatz:** Williston needs a new seed cleaning project; could this go over there?

**Chairman Representative David Monson:** Yes, they have raised a lot already after we gave them the authority for it.

**(21:40) Representative Mike Schatz:** If we cannot afford that in our budget, but they can raise it, they will be able to transfer it?

**Chairman Representative David Monson:** Yes, correct.

**Vice Chairman Representative Jim Schmidt:** Can it tell the difference between 2-row and 6-row barley?

**Chairman Representative David Monson:** No, but I can.

**(22:50) Chairman Representative David Monson:** We are alright with the transfer authority?

**Mr. Cronquist:** No changes need to be made because they are already in the base budget.

**Chairman Representative David Monson:** Why does it say “recommended to be added”?

**Mr. Cronquist:** It was just an oversight on our part.

**(23:35) Chairman Representative David Monson:** So these sections are already in there?

**Mr. Cronquist:** That is correct.

**(24:00) Chairman Representative David Monson:** They have the ability to move around FTE (full time employee). No continuing appropriations and no audit findings.

**Chairman Representative David Monson:** Any major related legislation? When Representative Tracy Boe carries this to the floor, if it is already in the base, will it be a problem?

**(26:05) Mr. Cronquist:** Are you referring to the FTE transfer authority?

**Chairman Representative David Monson:** I am meaning all of it.

**Mr. Cronquist:** The amendment will not show it.

**(26:35) Chairman Representative David Monson:** Do you feel good about that Representative Tracy Boe?

**Representative Mike Nathe:** Is the Williston seed cleaning plant in this?

**Chairman Representative David Monson:** No.

**(27:10) Mr. Martin:** There is an amendment to get it in here.

**Vice Chairman Representative Jim Schmidt:** Back to the one-time SIF funding for extraordinary repairs, if you do not know what it is, it is hard to do that. We need to know our balance for the SIF.

**Chairman Representative David Monson:** We need a summary of all the budgets we have had including all of the SIF funds, general funds and legacy funds.

**(28:40) Mr. Cronquist:** You want it all by this afternoon? Because we can try. You want all of general funds, special funds and legacy fund increase?

**Chairman Representative David Monson:** Yes.

**Vice Chairman Representative Jim Schmidt:** When we say we are over; we are over the appropriations of the base for the last biennium.

**(29:45) Chairman Representative David Monson:** We just need to know what we have tentatively added. This brings us back to the Williston seed cleaning plant, which I thought was in the extension.

**Representative Mike Nathe:** I will pass out the sheet on it **(attachment 3)**.

**(31:20) Mr. Cronquist:** So this **attachment 3** was drafted to go to the main research center instead of the branch research center.

**Chairman Representative David Monson:** Whose preference is this?

**Mr. Lardy:** The capital projects have been done by the branches, but they come through us because we have to manage those and make sure they are up to standard.

**(32:25) Chairman Representative David Monson:** It makes no difference to me.

**Representative Bob Martinson:** Is the greenhouse a new deal?

**(32:55) Mr. Lardy:** The greenhouse project has been discussed at the Williston extension center, but has now been proposed to the legislature.

**Chairman Representative David Monson:** A lot of this is from donations, but other things are hard to figure out. Are they thinking of using their oil money?

**Mr. Lardy:** I would have to ask the director about their plans for the use of special funds.

**Chairman Representative David Monson:** Can you find out that plan? He has been using oil money to help with his operation. I do not think we are quite ready.

**(34:40) Vice Chairman Representative Jim Schmidt:** You increased the \$2M to \$3M, is this \$500,000 a part of the \$1M increase?

**Mr. Lardy:** I believe the increase of the \$500,000 would be in the Williston budget, but it would be managed through us.

**Vice Chairman Representative Jim Schmidt:** If we add transfer authority, could you move that other and use it?

**Chairman Representative David Monson:** I think this is authority to carryover what they have already raised and they have \$1.5M in special funds raised for this.

**(36:35) Mr. Cronquist:** Session law carries over unless it is repealed.

**Chairman Representative David Monson:** What is **section 11 on attachment 3**?

**(37:15) Mr. Cronquist:** You appropriated the \$1.5M of special funds and they are asking permission to carry it over and use it.

**Chairman Representative David Monson:** This says you can keep your money and keep on raising more?

**Mr. Cronquist:** Correct.

**(38:00) Vice Chairman Representative Jim Schmidt:** Does that apply to the greenhouse?

**Chairman Representative David Monson:** No, the greenhouse is a new one. I do not have a problem putting that up, but they will need maintenance money at some point.

**Vice Chairman Representative Jim Schmidt:** Does the other income refer to SIIF?

**(38:45) Representative Bob Martinson:** I can go with you on the \$750,000 for the Williston seed plant.

**Representative Mike Schatz:** I am still a little curious about the transfer, do they have money yet?

**Chairman Representative David Monson:** We would give them authority.

**Representative Mike Schatz:** Will they have enough to transfer the \$750,000?

**(39:40) Chairman Representative David Monson:** If they only raise \$1M, they will not have enough to cover operating costs.

**(40:20) Chairman Representative David Monson:** We are taking \$3M out of general funds and we are expecting them to find \$3M in other funds to operate. I do not think they will have a lot of money to move \$750,000 to Williston.

**(41:20) Mr. Cronquist:** Unless \$750,000 in general funds is specifically appropriated, they cannot use transfer authority to use that on a building.

**Chairman Representative David Monson:** The seed cleaner is a capital project. We made the transfer for them if we do this \$750,000. I am also okay with doing less than that as well.

**(42:55) Vice Chairman Representative Jim Schmidt:** Increasing to \$3M further jeopardized opportunities? Could we put in more?

**Chairman Representative David Monson:** We can put authority in for as much as we want.

**Vice Chairman Representative Jim Schmidt:** I do not like taking base money and moving it around.

**Chairman Representative David Monson:** Alex just told us that you cannot transfer special funds.

**(44:05) Mr. Cronquist:** General funds cannot be used, but special funds can. I believe only \$1.5M has been appropriated for that, so you would have to increase the cap of it.

**Vice Chairman Representative Jim Schmidt:** So we cannot increase their other funds because it is a capital project?

**Mr. Cronquist:** You can, but you would have to designate it strictly for that project.

**(44:55) Mr. Lardy:** We may not be able to find funds specifically for operating costs, but we think we could raise money for projects.

**Vice Chairman Representative Jim Schmidt:** My confusion relies with miscellaneous expenses, what are those?

**(46:15) Mr. Lardy:** I believe the miscellaneous expenses would include operating costs and other.

**(46:35) Dave Ruhland:** The \$2M is kind of a way of not cutting as much general fund and trying to bring back other funds to help us. That is a cut to general funds.

**Chairman Representative David Monson:** I look in the bill itself and the main research center has a total budget of \$108M. Where is the other \$1.5M cut?

**(47:55) Chairman Representative David Monson:** It is because we have the Governor's salary package increased it and then we decreased the other budget by \$3M.

**(49:00) Chairman Representative David Monson:** These guys have taken some heavy duty cuts. I have no problem with \$3M in there. Just because we give them \$3M in authority does not mean they will raise it. It would still be a cut to their base.



**Mr. Martin:** Of the \$4M, we are looking at \$3M for general and \$1M for other or would it be \$2M and \$2M?

**Chairman Representative David Monson:** We would cut it by \$3M in general fund and add \$3M in special or other funds.

**(51:15) Vice Chairman Representative Jim Schmidt:** I would go with it like this for now with the idea that we will be changing it down the road.

**Representative Bob Martinson:** I think you should do the \$750,000.

**(51:55) Chairman Representative David Monson:** On attachment 3, what is the source of his other income? I do not want to see him using his oil funds because he has been using that to help this operation.

**Chairman Representative David Monson:** Otherwise I think we have this one all but penciled in.

**(53:00) Chairman Representative David Monson:** Begins to go over attachment 2.

**Chairman Representative David Monson:** There is no way that Research and Extension would fall into our tier 2, would it?

**Mr. Cronquist:** The agriculture research is different from the university system.

**(54:50) Chairman Representative David Monson:** It would not work the way we are talking.

**Mr. Martin:** The budget request for extraordinary repairs is attachment 2. The \$1.4M was the request.

**Chairman Representative David Monson:** Attachment 2 does not match up with the green sheets.

**Mr. Martin:** It is similar, but it is their justification for it.

**(57:00) Chairman Representative David Monson:** What is our SIIF breakdown?

**Representative Mike Nathe:** SIIF was all commerce.

**Vice Chairman Representative Jim Schmidt:** Attachment 2 is all deferred maintenance?

**(57:50) Chairman Representative David Monson:** That is how it appears to me.

**Vice Chairman Representative Jim Schmidt:** Is there any reason for why we have \$8.7M in deferred maintenance?

**Chairman Representative David Monson:** We have some blame due to cuts.

**(58:20) Representative Mike Nathe:** According to SIIF money would be the \$1.44M for extraordinary repair.

**Vice Chairman Representative Jim Schmidt:** To me we have to clean this up somehow because we cannot find \$8.7M.

**Chairman Representative David Monson:** The priority would be the \$1.44M request.

**(59:30) Vice Chairman Representative Jim Schmidt:** That is for extraordinary repairs, this is deferred maintenance.

**Mr. Martin:** They are the same thing.

**Vice Chairman Representative Jim Schmidt:** How are we supposed to know that?

**Chairman Representative David Monson:** In this case it is the same. If we give you \$1.44M in SIIF, we can get extraordinary repairs and deferred maintenance cleaned up?

**(1:00:35) Representative Mike Schatz:** Is this like life safety?

**Chairman Representative David Monson:** I saw that too. I am assuming that the \$1.44M would be a high priority and we are trying to avoid lawsuits.

**(1:01:45) Vice Chairman Representative Jim Schmidt:** If they have \$1.44M, I am assuming they know exactly where that is going and I would like to know that.

**Mr. Lardy:** We can provide that list.

**(1:02:50) Chairman Representative David Monson:** Let's take a look at all of the research stations clumped together.

**Vice Chairman Representative Jim Schmidt:** It is very difficult to figure out where we are going.

**Chairman Representative David Monson:** Let's take a look at the executive budget highlights. Did he ask for a 10% reduction?

**Mr. Lardy:** Yes, we submitted the 10% budget cut, but his 10% cut varied from center to center.

**(1:05:30) Chairman Representative David Monson:** Were some of these experiencing the full 10% cut?

**Mr. Martin:** The 10% reduction was not full. The Dickinson reduction was \$682,555 and the Governor recommended we put \$419,169 for a difference of \$263,386.

**Chairman Representative David Monson:** So these are not necessarily the 90% budget and looks more around 3%.

**(1:06:35) Mr. Martin:** If you want percentage wise, I will need one moment.

**Chairman Representative David Monson:** All we are seeing are reductions based on the reduction request. Carrington adds \$200,000 of other funds for an Oakes irrigation site; where are these other funds raised?

**Mr. Lardy:** This would be donations.

**Chairman Representative David Monson:** Could they raise that in Carrington?

**Mr. Lardy:** It would be difficult.

**(1:08:05) Chairman Representative David Monson:** Is \$200,000 enough to put in an irrigation system?

**Mr. Lardy:** It is for operational expenses and not actually irrigation systems.

**Chairman Representative David Monson:** Have they been trying to generate interest in this over the years?

**(1:08:40) Mr. Lardy:** Most of the funding for the Oakes site comes through the Carrington budget. I believe the \$200,000 is the general operating costs for that site and does not purchase the equipment.

**Chairman Representative David Monson:** Can you find out how much money they have raised? Have we given them authority to raise funds?

**Mr. Lardy:** I would have to look.

**(1:10:00) Chairman Representative David Monson:** I do not remember if we ever did.

**Mr. Cronquist:** I am not aware of doing this.

**Chairman Representative David Monson:** Find out more details. I seldom have a problem giving them authority to raise money from private industry or donations. If we give them \$200,000 in authority, that will never go into the base because that is correct, right?

**Mr. Cronquist:** It would go into their base, but as other funds.

**(1:11:45) Chairman Representative David Monson:** If they cannot raise it, they will ask for general fund money.

**Mr. Lardy:** The Oakes site has been funded through Garrison Diversion. The funds will no longer be available through grants, so the funds will disappear. The \$200,000 is not a request for additional irrigation, it is just the base operation costs.

**Chairman Representative David Monson:** I know nothing about the Garrison Diversion, any money in there?

**Vice Chairman Representative Jim Schmidt:** I do not know.

**(1:14:00) Chairman Representative David Monson:** Since you know where to look, I will make an assignment for you to find out. How much money can we expect to come from the Garrison Diversion?

**Representative Tracy Boe:** It says that Oakes site has been funded by the Garrison Diversion and the funding will not be available in the near future.

**(1:15:15) Mr. Martin:** Gives figures for research center reductions.

**Chairman Representative David Monson:** What kind of cuts have they sustained?

**Mr. Cronquist:** In the 2017 session they took a 7% reduction and this session they will take a 2% reduction.

**(1:17:05) Chairman Representative David Monson:** They have not been hit as hard as I thought.

**Mr. Lardy:** The numbers talked about did not include the allotment, which included a 6.55% cut.

**Mr. Cronquist:** They are adjusted numbers and will not affect the allotment.

**Chairman Representative David Monson:** So that makes it about a 14% reduction including this year's reduction. What do we want to do committee?

**(1:18:30) Chairman Representative David Monson:** If we take the Governor's recommendation, we would take a 2-4% more in reductions. These would all be reductions to the general fund.

**Representative Mike Nathe:** We could stick with the Governor's recommendation and see how the revenue forecast comes out and work this out in conference.

**Chairman Representative David Monson:** Not a bad idea.

**(1:20:00) Representative Tracy Boe:** I agree with Representative Mike Nathe in order to get things moving later on. We will have to have some numbers in there.

**Chairman Representative David Monson:** Just looking at that, the executive budget comparison to the base budget will not see as big of raises as the Governor projected. Does that include the \$200,000 for running the irrigation site?

**(1:22:25) Mr. Cronquist:** Everything listed in other sections is in the base already.

**Representative Mike Nathe:** Does Dickinson use the funding as they see fit for operational expenses and they could use that money for the reductions?

**Chairman Representative David Monson:** Yes, Williston does this too, but they oil money is shrinking. When you think about it, giving them the right to use that oil money and Williston uses that for the 3% and also takes a hit on oil production, they are now really hurting.

**(1:24:20) Chairman Representative David Monson:** We are okay with everything else for now?

**Chairman Representative David Monson:** Calls a quick recess.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
1/29/2019  
31656

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachments 1-2

**Chairman Representative David Monson:** Opens meeting. Alex has some rough numbers for us.

**(00:30) Alex Cronquist:** \$31M from SIIF with \$30M for commerce and the other \$1M for research and extension. BVLOS (Beyond Visual Line of Sight) was \$27M, Grand Sky was \$1M and the UAS (Unmanned Aircraft System) test site was \$2M.

**Mr. Cronquist:** Legacy fund money is \$60M, \$10M for Challenge Grants and \$50M for the Teddy Roosevelt library.

**Mr. Cronquist:** General fund money is a \$46.4M increase and that includes \$33M for buildings and these numbers do not include any salary or benefits and it does not include Representative Mark Sanford's proposal either.

**(3:00) Chairman Representative David Monson:** Thank you Alex. We are done with branch and the main research so far. We have Upper Great Plains and extension, which were going to be heard tomorrow.

**(3:55) Greg Lardy:** The intent would be all private fundraising and no oil money for the Williston greenhouse project and would use natural gas nearby to heat that project.

**Chairman Representative David Monson:** Are we okay with the greenhouse that is all raised by private donations?

**Representative Bob Martinson:** It does not say that.

**Mr. Cronquist:** We can change that "and other income" to just "donations".

**Vice Chairman Representative Jim Schmidt:** Any calculations for what the yearly maintenance costs would be?

**(5:20) Mr. Lardy:** We can get you that figure.

**Vice Chairman Representative Jim Schmidt:** Would there be a cost to make the natural gas pipeline?

**Mr. Lardy:** Yes, but that would be included in the cost.

**Vice Chairman Representative Jim Schmidt:** It seems to me that it would have to be added to the base then?

**Mr. Lardy:** I am not sure about that detail.

**(6:45) Chairman Representative David Monson:** We have the Northern Crops Institute (NCI) and Agronomy seed farms. We already okayed Agronomy because it is almost 100% special funds.

**Mr. Cronquist:** The only change made was the compensation increase.

**(7:30) Chairman Representative David Monson:** The big issue in all of these is the salary changes. Let's look at NCI.

**Chairman Representative David Monson:** What is the adjusted 10% reduction?

**Larry Martin:** We restored the funding, but switched funding sources from general fund to special funds.

**Chairman Representative David Monson:** Do you know anything about NCI?

**(9:30) Mr. Lardy:** We can have the director here tomorrow.

**Chairman Representative David Monson:** It is only a \$94,000 switch from general fund to special fund and he could clear up the source for that.

**(10:20) Chairman Representative David Monson:** Additional income and other expenses are all the same and in the base budget. I think we are done with NCI then. Our only question is where the \$94,000 other funds would be.

**Chairman Representative David Monson:** Let's look at Upper Great Plains Transportation.

**(11:55) Representative Mike Nathe:** I tried to get the information from Denver Tolliver. I did have a question for HB 1066, that Upper Great Plains study needs to be conducted and there is no money in the budget for that study. Provided as **attachment 1 and 2.**

**Mr. Martin:** It may be in their base request.

**Representative Mike Nathe:** I thought he said it was in there.

**(14:20) Chairman Representative David Monson:** Closes hearing on HB 1020.



# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
1/30/2019  
31768

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachments 1-2

**Chairman Representative David Monson:** Opens meeting and attendance is taken.

**Chairman Representative David Monson:** We are working on HB 1020. We worked on Research already and today we will be looking at Extension.

**(2:00) Greg Lardy:** Mark Jirik is here today to answer any questions you may have.

**Chairman Representative David Monson:** Alex, bring us up to speed on Northern Crops Institute (NCI). It is budget number 638 in HB 1020.

**Mr. Cronquist:** The building project was not recommended by the Governor.

**(3:30) Chairman Representative David Monson:** We have been working on a method to fund college building projects. It will not work for you guys because you do not offer credit. If it did not make the Governor's list, I do not think we will be able to find money.

**Chairman Representative David Monson:** If you use Legacy funds, it does not come in until the end of the biennium, so you would not even get the money until the end of the biennium or we would have to borrow it from Bank of North Dakota.

**(5:20) Chairman Representative David Monson:** If it is SIIF (Strategic Investment and Improvement Fund) money, that has all been spent and we are going to struggle to find money to fill that up.

**Chairman Representative David Monson:** Let's work on NCI. We have decided we will do 2% and 2% salary increases in the House side. What was the package?

**Representative Bob Martinson:** Fully funded

**Representative Tracy Boe:** I thought they said 3%?

**(6:35) Chairman Representative David Monson:** By funding the insurance, it makes it 3%.

**Representative Mike Nathe:** If we do the salary and stick with insurance, does that not make it 5% total?

**(7:20) Representative Tracy Boe:** I just heard 3%.

**Mr. Cronquist:** I am not sure what that would equate to yet.

**Chairman Representative David Monson:** I think the insurance equates to about 1%.

**Representative Mark Sanford:** Can Alex get us that number so we are all talking the same language.

**(8:35) Chairman Representative David Monson:** We need to know what that equates to in dollar amount so we can make sure we do not add or cut too often.

**Mr. Cronquist:** We do have those numbers. For NCI with the 2% and 2%, it would be \$87,154 increase from the base and \$37,010 from other funds.

**Chairman Representative David Monson:** Adjust funding for miscellaneous spending was a \$94,000 general fund cut. The Governor's recommendation was to allow special funds to supplant those.

**(10:45) Chairman Representative David Monson:** Let's make it \$100,000 authority.

**Representative Mark Sanford:** Would it be possible to summarize that into one number and make it composite?

**Mr. Cronquist:** Yes, we can do that. Do you want just a total number by bill or for all the bills in this committee?

**Representative Mark Sanford:** All please.

**(12:00) Chairman Representative David Monson:** I would like it for all of our bills. What does the adjusted 10% cut turn out to be?

**Mr. Cronquist:** It is a 5% cut.

**Chairman Representative David Monson:** They are a smaller agency so they only have to do 5%. Is that a 5% cut?

**Mr. Cronquist:** Yes, it is a 5% base cut.

**(13:25) Chairman Representative David Monson:** What would the number be to add 3% back?

**(13:40) Mr. Cronquist:** To add 3% back would be \$56,607 and a total reduction of \$38,000.

**Chairman Representative David Monson:** We would be cutting how much?

**Mr. Cronquist:** You would cut \$37,738 from the general fund instead of \$94,000.

**Representative Tracy Boe:** They are nodding.

**(15:00) Chairman Representative David Monson:** Other sections are all the same and in the base budget, so no changes there. They can add FTE (full time employee) as needed if they can find the money and the Governor recommended to add 1 FTE.

**Mr. Cronquist:** That is an adjustment made this past biennium to add FTE if needed.

**Representative Mike Nathe:** Have they had unexpended general fund authority before and do they have any carryover?

**Chairman Representative David Monson:** Yes, they have the authority and probably some carryover from companies asking to do experiments or test something for them.

**(17:15) Mark Jirik:** We always spend what we are allocated by the state. Last year we did have carryover from out processing and other funds. We are governed by the Northern Crops Council and they adjust our guidelines.

**Representative Mike Nathe:** How much then?

**Mr. Jirik:** Around \$700,000.

**Chairman Representative David Monson:** If we give you the authority to raise \$100,000, can you?

**(18:30) Mr. Jirik:** It really depends because things change so often, but I think we can.

**Chairman Representative David Monson:** Representative Tracy Boe, being the carrier on HB 1020, you may want to brush up on how they got the extra FTE.

**Chairman Representative David Monson:** I think we are done with NCI.

**(20:00) Chairman Representative David Monson:** Agronomy Seed Farms was 100% special funds and everything stays around the same.

**Mr. Cronquist:** With the insurance increase it is around \$26,000 instead of \$35,000, but that is Federal anyways.

**Chairman Representative David Monson:** No audit findings, no additional FTE. Anything else?

**(21:10) Representative Mike Nathe:** Is this where we talk about the Upper Great Plains study?

**Chairman Representative David Monson:** Upper Great Plains is next and a lot of special funds too. Representative Mike Nathe has a comment about a proposed study, but let's look at the salary increase first.

**Mr. Cronquist:** The general fund amount would be \$141,095 and other funds amount would be \$257,255.

**(22:30) Chairman Representative David Monson:** If we did a 2% cut instead of a 5% cut?

**Mr. Cronquist:** A 2% cut from the base would be \$70,863.

**Chairman Representative David Monson:** That is almost \$100,000 less of a cut. It would make them stretch a bit, but they can do it.

**Representative Mark Sanford:** I just need a recap of the general fund number.

**Chairman Representative David Monson:** That is \$141,095.

**(24:15) Representative Mike Nathe:** I had sent everyone the information on the Upper Great Plains cost of HB 1066. The formula needs to be redone every 2 years, it would cost \$975,000.

**Chairman Representative David Monson:** Do we need to put that in this bill?

**Representative Mike Nathe:** We need to fund it.

**Chairman Representative David Monson:** That would be special funds that they would do on behalf of Department of Transportation and a few other agencies.

**(25:20) Representative Mike Nathe:** It will cost close to \$1M.

**Chairman Representative David Monson:** I am not sure it will pass.

**Representative Mike Nathe:** You will see the general fund budget requests and the totals.

**(25:55) Chairman Representative David Monson:** Will you tell us what that number is?

**Representative Mike Nathe:** The base is \$3.4M and the new is \$975,000. Their budget total was \$4.418M.

**Chairman Representative David Monson:** Did you forward this from Denver Tolliver?

**Representative Mike Nathe:** I did.

**(27:00) Chairman Representative David Monson:** What is in their base right now? It is 3.443M. We would need to add general fund and not special funds.

**Mr. Cronquist:** I am not sure where that \$975,000 is supposed to come from.

**Representative Mike Nathe:** I am not sure why, but it is just under general fund budget request.

**Larry Martin:** They requested the \$975,000 from general funds.

**(28:20) Representative Mike Nathe:** It has many other applications other than HB 1066.

**Chairman Representative David Monson:** The Department of Transportation seems to be the one who needs it in their budget.

**Representative Mike Nathe:** The bill used the Upper Great Plains to determine what each county gets.

**Chairman Representative David Monson:** Let's coordinate with that before we go through.

**(29:20) Representative Mike Nathe:** I will do the legwork for that and let you know.

**Chairman Representative David Monson:** Anything new? I think we are done with this.

**Mr. Cronquist:** There was nothing else recommended by the Governor.

**(30:00) Chairman Representative David Monson:** Everything else is just rehashing what we have already talked about.

**Mr. Cronquist:** Correct, we have already discussed the branch center numbers.

**Chairman Representative David Monson:** Dickinson and Williston's numbers have shrunk a lot and it seems like it must be hard to operate.

**(31:00) Chairman Representative David Monson:** We will put a note on Upper Great Plains.

**(31:15) Chairman Representative David Monson:** Let's look at Extension. What are the salary increases?

**Mr. Cronquist:** It would be \$1,084,918 for general funds. Other funds amount is \$982,267.

**Chairman Representative David Monson:** Reduce funding for miscellaneous expenses is \$1M. The Governor recommended no changes to that. What percentage is that?

**Mr. Cronquist:** The \$1M reduction is about 4.1% reduction from the base.

**(32:55) Chairman Representative David Monson:** I cannot do that to them again. They have been whipped the last few biennia.

**Chairman Representative David Monson:** Is the allotment considered?

**Mr. Cronquist:** Yes, the allotment is considered.

**(34:10) Chairman Representative David Monson:** They were cut over \$2M in 2017-2019, which is around 14%.

**Mr. Cronquist:** It has the percentage decrease.

**Chairman Representative David Monson:** Okay, so that was actually a 7.9% cut.

**(35:05) Chairman Representative David Monson:** What do you want to do committee? What ever happened with the soil conservation?

**Mr. Cronquist:** Most of it was turned into a study and they did not really make any changes.

**(36:00) Duane Hauck:** The state soil conservation committee receives conservation money that goes out to districts to support them. The extension services provide a staff member that provides leadership for those committees.

**Mr. Hauck:** We have undertaken a significant change regarding the training and support to agents. Historically the state committee has always served as the base for soil district supervisors on what state law guides them to do.

**Mr. Hauck:** The funding line was reduced from \$1.33M down to \$1.091M, which is critical money used to support district staffing needs.

**(38:15) Chairman Representative David Monson:** Our problem last time was thinking it was redundant to have a middle person in there decide where to pass the money. Where does the money come from?

**Mr. Hauck:** The money comes from an appropriation by you.

**Chairman Representative David Monson:** What was it historically?

**(39:00) Mr. Hauck:** It was at one point \$1.37M and reduced slightly in the last two biennia.

**Chairman Representative David Monson:** And this time it is in the base at just over \$1M?

**Mr. Hauck:** That is correct. There are 59 soil conservations across the state. This state money has historically provided a little bit of a base to maintain their district technician staff.

**(40:20) Chairman Representative David Monson:** What do they all do at the county level?

**Mr. Hauck:** There are a number of conservation needs depending on the areas.

**(41:35) Bruce Schmidt:** Passes out **attachment 1** and begins to explain **attachment 1**.

**Chairman Representative David Monson:** I know the trees are in bad shape, so you guys do a lot of work and get ideas on what grows in certain soils. Tell us what you guys do.

**Mr. Schmidt:** Returns to presenting **attachment 1**.

**(46:00) Chairman Representative David Monson:** The ones in yellow have carryover and the ones in white have no carryover. What about the ones in blue; it looks like they have more carryover?

**Mr. Schmidt:** They were understaffed and I had to figure out the funding requests. They realized there is funding and there is new district staff. They did not have district staff for a little while there.

**(47:25) Chairman Representative David Monson:** Back when I was in the school, we took a field trip and I remember you guys being a part of the schools.

**Mr. Schmidt:** There are a number of school programs that they run. They do an 8<sup>th</sup> grade tour for all schools and a few other things.

**(48:25) Chairman Representative David Monson:** What does the cut show for conservation?

**Mr. Cronquist:** Soil conservation was not affected by the cut.

**Chairman Representative David Monson:** What was?

**Mr. Cronquist:** General extension was and they have to find where to save under that cut.

**(49:25) Chairman Representative David Monson:** Another 4% cut of \$1M is a little heavy.

**Representative Mike Schatz:** They are not getting cut according to my notes, they are going from \$25M to \$26M.

**(50:10) Mr. Cronquist:** The Governor added a one-time funding of \$345,000 for website and digital upgrades.

**Representative Mike Schatz:** We keep going from 5% to 2%, so eventually we will have to cut the full amount.

**Representative Bob Martinson:** These are programs that do actually help the state. I would not cut it at all.

**(51:15) Chairman Representative David Monson:** If we leave it at 2%, it takes it to a \$1M increase to cover salary and benefits. Right now the Governor's recommendation would be \$1M cut for a net of \$21,000 increase.

**Chairman Representative David Monson:** The one-time funding for digital upgrades can probably not be funded. I cannot get over our soil scientists like Naeem Kalwar for his research on soil science, but he is actually paid 100% from extension and he has made and saved our state millions of dollars.

**(53:25) Chairman Representative David Monson:** Mr. Kalwar has made farmers and agriculture a ton of money. He uses excess from coal plants to make gypsum from their byproducts that will help my soil and make money that way. I just can't see cutting this one anymore.

**Representative Bob Martinson:** Let's keep it.

**Representative Schatz:** I could go for the \$500,000.

**Representative Martinson:** Just keep it.

**Chairman Monson:** Zero at number 2 and zero at number 3. We saved \$345,000.

**(56:35) Chairman Representative David Monson:** So we say we reduced the general fund from the Governor's recommendation and we saved about \$350,000 there and spent \$1M and eliminated another \$400,000.

**Chairman Representative David Monson:** FTE have gone down about 10 on this executive budget recommendation. They have come down 11 FTE from 2015-2017 to 2019 and another 10 from 2017-2019-2021. What is your plan for 20 fewer FTE?

**(58:30) Mr. Lardy:** Our leadership team within extension would go through a process similar in the past. It would be specialists on campus, field agents and administrative support staff.

**Chairman Representative David Monson:** You are looking at cutting support staff for the counties. If the counties want to employ an agent, you will now be 40% to 60% funding?

**(59:25) Mr. Lardy:** That originally was a 50% to 50% salary split and the state was picking up a larger share. We decided with the counties to go to 40% and 60% splits with the counties and eliminated some of our inflation costs. Passes out **attachment 2**.

**Chairman Representative David Monson:** County taxes go up with county agent costs. Do they all still have their agents?

**Mr. Lardy:** Some multi agent counties opted to have lower numbers of extension staff. A few counties stepped up and continued to fund their county agent.



**(1:01:20) Mr. Lardy:** They indicated strong support for the local presence and we are still committed to the local presence. Stark and Billings counties share an agent, so we can be innovative in order to help.

**Chairman Representative David Monson:** One of the criticism we have heard is are you charging 4-H students to join?

**Mr. Lardy:** That was one of the cost saving strategies used by the previous director. In early January, we decided we would no longer go after the fee and decided it was not beneficial.

**(1:03:05) Chairman Representative David Monson:** I am glad to hear.

**Mr. Lardy:** It roughly generated \$100,000 in income, but the processing costs eats into a lot of that and the net effect is not large.

**(1:03:50) Representative Bob Martinson:** I would like to see us put that \$100,000 in there because this is valuable for the kids. Never say things are less.

**Representative Bob Martinson:** I am nodding to put it in for them.

**Representative Tracy Boe:** I am just wondering which budget is getting this money removed from.

**(1:05:10) Chairman Representative David Monson:** Representative Mike Schatz is nodding no and I am kind of with him there.

**Representative Mike Schatz:** What organization do the kids belong to? I know FFA (Future Farmers of America) is out of pocket, so paying something for 4-H is not a big deal.

**Chairman Representative David Monson:** There were a lot of 4-H kids who had no money at all, so there are extra that could be reached.

**(1:06:20) Chairman Representative David Monson:** Does the 4-H foundation help?

**Mr. Lardy:** They do have some programs to help support and hold the camp at Washburn and a few state competitions.

**Representative Mike Nathe:** Why do we not just take \$100,000 out of the \$1M.

**Chairman Representative David Monson:** We do not have a line item, but that keeps them at the base and technically they would be still running on last year's base then.

**(1:07:30) Chairman Representative David Monson:** I could sure give them \$100,000 more in special funds. I know the foundation will chip in some money.

**Representative Bob Martinson:** My grandkids are fortunate that their parents can afford these things, but there are a lot of families out there that cannot keep paying all sorts of fees here and there for these programs. The kids that can afford it the least are helped the most by these programs.

**Chairman Representative David Monson:** So you want \$100,000 instead of \$0? You make a good point on the dress code.

**(1:09:15) Chairman Representative David Monson:** Can you go with \$100,000 Representative Mike Schatz? How about \$50,000 there and \$50,000 in special funds?

**Chairman Representative David Monson:** General funds for \$100,000 there then.

**Chairman Representative David Monson:** Is that it committee? We have a few things for Representative Delzer here.

**(1:11:40) Chairman Representative David Monson:** Closes hearing on HB 1020. Can you start drafting the amendments?

**Mr. Cronquist:** Yes, we can start on that.

**Representative Mark Sanford:** When the estimates are made on the insurance, I am assuming that is made on the basis of the contracts, but how do you arrive at that number?

**(1:12:35) Mr. Martin:** The number comes from PERS (Public Employees' Retirement System) and we get the numbers from them.

**Representative Mark Sanford:** So it is based on the FTE utilization?

**Mr. Martin:** Correct, but not all FTE use the benefits because some have spouses and only can use one there, but it is a family plan.

**(1:13:30) Chairman Representative David Monson:** I am not sure if you can make the amendments because there are a few questions of lower paid employees getting a base.

**Representative Mark Sanford:** An additional follow-up; the impact of the agency's retirement plan, does the executive budget include the 1:1?

**Mr. Martin:** Yes, it does.

**Representative Mark Sanford:** That is another consideration for us.

**Chairman Representative David Monson:** That is still a decision for the people above our pay grade.

# 2019 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee – Education and Environment Division  
Roughrider Room, State Capitol

HB 1020  
1/30/2019  
31775

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

## Minutes:

No attachments

**Chairman Representative David Monson:** Opens hearing on HB 1020.

**Larry Martin:** This is in regards to the additional money for roads and bridge study for the Upper Great Plains. It is not in the base budget and they need the money over and above the base budget. It is \$975,000 and mainly for travel and operating expenses.

**Representative Mike Nathe:** So Department of Transportation does not pay for that?

**Mr. Martin:** Correct.

**(1:20) Representative Mike Nathe:** Will they do the study if we do not fund it?

**Mr. Martin:** No they will not.

**Chairman Representative David Monson:** Closes hearing on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
2/4/2019  
32079

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachment 1

**Chairman Representative David Monson:** Opens meeting on HB 1020. The first item is **item 7 on page 1 of attachment 1**. **Item 6 on attachment 1** adds \$750,000 for the seed cleaner.

**Representative Bob Martinson:** The greenhouse was all authority to raise \$500,000.

**(2:00) Chairman Representative David Monson:** I am a little hesitant to give them authority because the oil money is declining and this is an expensive project.

**Representative Mike Nathe:** You are talking about taking off the greenhouse?

**Chairman Representative David Monson:** I think we should take the greenhouse item off.

**(3:20) Mr. Cronquist:** I wanted to apologize for having two **item 7's on page 1 of attachment 1**.

**Chairman Representative David Monson:** If we take the other 7 out, you will only have 1 item 7. As far as **item 6 on attachment 1 page 1**, I am fine with it and I say we leave it on.

**(4:10) Chairman Representative David Monson:** I do not think there is anything else on page 1. It adds one-time funding for \$1.44M, what is that?

**Mr. Cronquist:** One-time funding for extraordinary repairs. That is from SIIF (Strategic Investment and Improvement Fund).

**(5:20) Chairman Representative David Monson:** **Page 2 of attachment 1** outlines the Northern Crops Institute (NCI). This was nothing other than payroll and should be good.

**Chairman Representative David Monson: Page 3 of attachment 1** is the NDSU Extension Service and we did not do much there.

**Mr. Cronquist:** You added \$100,000 to eliminate payments of members in 4-H.

**(6:20) Chairman Representative David Monson: Page 4 of attachment 1** is the branch research centers and what is **item 3** regarding Oakes?

**Mr. Cronquist:** They have to raise that money or find it in their budget.

**(6:50) Chairman Representative David Monson: Page 5 of attachment 1** is the Upper Great Plains.

**Representative Mike Nathe:** Basically what the study does is uses \$975,000 to use the formula study to dictate the payouts to the counties and that happens every 2 years. It was decided if Department of Transportation or Upper Great Plains should do this and if we should put it in the base budget or not.

**Chairman Representative David Monson:** And that would have to be general funded then?

**(8:35) Representative Mike Nathe:** Yes. The information from this study is crucial for the Department of Transportation and is also outlined in HB 1066. There is no money in there for this study.

**(9:25) Representative Tracy Boe:** The Department of Transportation does not want this in their budget?

**Chairman Representative David Monson:** Representative Vigesaa said no, so it is not duplicated. It makes out budget look bigger though.

**(10:15) Representative Tracy Boe:** I would have thought that the Department of Transportation would be able to assess the value of this study closer than we would. They probably know if they would need closer to \$1M or even \$500,000, so we do not know that.

**Chairman Representative David Monson:** This is for townships and counties and they do not generally cover those.

**Representative Mike Nathe:** They use this, but they really do not pay for it.

**(11:25) Representative Tracy Boe:** They build their formula off of this study?

**Representative Mike Nathe:** They make a lot of decisions based on this study.

**(11:45) Chairman Representative David Monson:** If we gave the money to Department of Transportation they would just turn around and give it to Upper Great Plains.

**Larry Martin:** Department of Transportation does not do a lot with general funds, they are more of special funds and it would be a little more difficult for them based on accounting.

**(12:40) Representative Mike Nathe:** HB 1066 will be on the floor way before our budget bills, so that would justify this budget.

**Representative Tracy Boe:** When was the last time they did this study?

**Mr. Martin:** They did it every 2 years, but last session the money was removed.

**(13:40) Representative Tracy Boe:** It seemed to me that the first study had to be the bearcat, but bridges that have been replaced should rotate to the top of the list and the future studies should not be as expensive.

**Vice Chairman Representative Jim Schmidt:** I would agree with Representative Tracy Boe and it would be updating and monitoring the list.

**(14:50) Mr. Cronquist:** In 2015, you had a one-time funding of \$750,000 for the road and bridge study and just about \$800,000 for road and bridge asset management system. In 2017, You had \$100,000 from general fund and \$200,000 from county matching funds. So, \$300,000 total in 2017 for the road and bridge study.

**Vice Chairman Representative Jim Schmidt:** I would be looking to reduce it.

**Chairman Representative David Monson:** What do you think?

**(15:45) Vice Chairman Representative Jim Schmidt:** My starting number would be \$300,000.

**Representative Tracy Boe:** I would recommend \$500,000.

**Representative Mike Nathe:** We have not done this for 4 years and the study is that old now. I would think we could do the \$725,000 from back then.

**(16:30) Vice Chairman Representative Jim Schmidt:** The Senate will update it, but Morton County updates this quite a bit and a lot of this is probably done by the counties.

**Representative Mike Nathe:** It is my understanding that the counties rely on this information.

**Chairman Representative David Monson:** We gave them \$100,000 and they had to match it with \$200,000.

**(17:30) Mr. Cronquist:** That was to continue the road and bridge asset management system.

**Mr. Martin:** I believe the asset management system was their program management, but I do not think they were given money for the actual study. It was pulled for the allotment.

**(18:25) Representative Tracy Boe:** They picked it to be pulled from the allotment?

**Chairman Representative David Monson:** When the Governor told them to cut?

**Representative Tracy Boe:** Yes, they picked that as what they wanted to give up.

**(18:50) Chairman Representative David Monson:** I suppose they do not care.

**Representative Mike Nathe:** If HB 1066 passes, we have to care. What the study will do is prioritize who needs the money the most.

**(19:50) Representative Mark Sanford:** If Department of Transportation uses this, they would endorse it.

**Chairman Representative David Monson:** I know they would want it, but it's whose budget is it in, and I would say it is this one. If we give the money to Department of Transportation, there is no guarantee.

**Representative Mark Sanford:** What progress did they make doing these studies. I keep thinking of deferred maintenance, so I value what Upper Great Plains brings to the table.

**(21:10) Chairman Representative David Monson:** If we underfund it, we can always see what the Senate wants to do with it. Representative Tracy Boe said \$500,000.

**Vice Chairman Representative Jim Schmidt:** We are kind of in the warmup lap and \$300,000 warms me up.

**Representative Mike Schatz:** I say \$300,000.

**Representative Mark Sanford:** I would say average all of the numbers.

**(22:15) Representative Bob Martinson:** I say between \$300,000 and \$500,000.

**Representative Mike Nathe:** I say stay at \$500,000.

**(23:25) Chairman Representative David Monson:** Can we go with around half of the \$975,000 and say \$450,000?

**Representative Bob Martinson:** Put it in at \$450,000.

**(24:15) Chairman Representative David Monson:** Closes hearing on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee – Education and Environment Division  
Roughrider Room, State Capitol

HB 1020  
2/5/2019  
32158

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

## Minutes:

No Attachments

**Chairman Representative David Monson:** Opens meeting on HB 1020.

**Chairman Representative David Monson:** Draft an amendment for \$2M in special funds authority and we will only give them \$250,000 for the seed cleaning plant. We will let them carryover their \$1.5M and give them nothing for the greenhouse.

**(1:20) Chairman Representative David Monson:** You can start drafting that then.

**(1:35) Chairman Representative David Monson:** Closes meeting on HB 1020.



# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
2/8/2019  
32459

- Subcommittee  
 Conference Committee

Committee Clerk Signature Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachment 1

**Chairman Representative David Monson:** Opens meeting on HB 1020.

**(00:35) Mr. Cronquist:** Begins presenting **attachment 1 on page 4.**

**(1:40) Representative Tracy Boe:** What reduction was this?

**Mr. Cronquist:** It was a 2% reduction.

**Chairman Representative David Monson:** We did not add any sections.

**(2:15) Mr. Cronquist:** There are some sections that affect this, but none were actually added. They have the ability to adjust their FTE (full time employees) levels. They can also carryover and use those funds. Continues outlining **attachment 1 on page 4.**

**(4:30) Chairman Representative David Monson:** What is less estimated income on **page 4?**

**Mr. Cronquist:** That is just a wording clause.

**Chairman Representative David Monson:** When they use research dollars for salaries, it is subtracted from salaries and benefits?

**(5:00) Mr. Cronquist:** **Page 5 of attachment 1** has the breakdown of the salaries.

**Chairman Representative David Monson:** So we pretty much did take the Governor's recommendation on this?

**Mr. Cronquist:** Yes, other than the salary increase level recommendation. Continues presenting **attachment 1 on page 5.**

**(6:55) Chairman Representative David Monson:** Representative Delzer had a problem with **section 10 on page 2 of attachment 1.**

**Representative Tracy Boe:** What was the point of the bond reduction?

**Mr. Cronquist:** We paid principle on it so the payment would be less.

**(7:50) Mr. Cronquist:** Returns to **attachment 1 on page 6.**

**(9:00) Chairman Representative David Monson:** They added \$100,000 to remove the 4-H fee.

**Mr. Cronquist:** They were going to remove the fee from the extension service.

**Chairman Representative David Monson:** All of the increases for general fund were for salary and benefits.

**(9:40) Mr. Cronquist:** Yes.

**Chairman Representative David Monson:** If anyone asks why we did not reduce it, I will talk about Naeem Kalwar saving the state millions. If I remember historically, they took about a 7% real cut and they also had an allotment taken the time before of around 6.5%. I think between the allotment and the real cuts, they almost had a 14% reduction.

**(11:05) Mr. Cronquist:** After the allotment, it was essentially a hold even budget in 2015-2017. In 2017-2019 there was about an 8% reduction.

**Chairman Representative David Monson:** This is also involving the number 1 industry in our state. These extension guys are responsible for stopping plant diseases.

**(12:35) Mr. Cronquist:** Returns to **attachment 1 on page 7.**

**Chairman Representative David Monson:** What is their percentage of other funds versus general funds?

**(13:50) Mr. Cronquist:** It is pretty close to 50-50.

**(14:30) Chairman Representative David Monson:** When they do research for commodity groups, that would be their source of special funds?

**Mr. Cronquist:** That would be one and other states would be another source. Continues on **page 7 of attachment 1.**

**(16:35) Chairman Representative David Monson:** No guarantees they will get the \$3M in special funds.

**(16:55) Mr. Cronquist:** Continues on **page 7 of attachment 1.**

**Chairman Representative David Monson:** How much do they have left in bond payments?

**(17:40) Mr. Cronquist:** That is primarily an adjustment for how much they have available for capital projects. This would be for equipment and extraordinary repairs. Continues on **footnote 6 of page 7 in attachment 1.**

**Mr. Cronquist:** **Footnote 5 on page 7** could mostly be related to equipment. Continues on **page 7 of attachment 1.**

**(20:05) Chairman Representative David Monson:** That seed cleaning plant would cost the state \$250,000 and the rest would be \$2M in special funds.

**Representative Mike Nathe:** How do they raise that?

**Chairman Representative David Monson:** I think they are private donations.

**Mr. Cronquist:** They are donations and through the sale of products.

**Representative Mike Nathe:** Have they done that in the past?

**(20:50) Chairman Representative David Monson:** That is a good question.

**Mr. Cronquist:** I am not sure on Williston exactly.

**(21:35) Chairman Representative David Monson:** I am guessing a lot of that money is from foundation seed and the color sorter helps to get all of the right stuff out. I am thinking the commodity groups are kicking in money.

**Representative Mike Nathe:** If we have done this in the past, I have no problem.

**(22:25) Chairman Representative David Monson:** There are two branch research stations with oil revenue and that money has been declining. Williston was down quite a bit. Dickinson has more.

**(23:15) Mr. Cronquist:** Returns to **page 8 of attachment 1.**

**(25:10) Chairman Representative David Monson:** I am willing to leave all of the base items there. Removing the authority to get contracts for projects really limits them.

**Representative Tracy Boe:** If I remember right, these contracts are sometimes multi-year contracts and in order for them to enter these, they need the authority.

**(26:30) Chairman Representative David Monson:** You can probably make the same argument for HB 1003. Ramping up or declining the amount of FTE is important for their operations.

**(27:35) Representative Tracy Boe: Motion made to adopt amendment. Vice Chairman Representative Jim Schmidt seconded. Motion carries with a voice vote.**

**Chairman Representative David Monson:** Any other amendments?

**Representative Tracy Boe: Motion made of Do pass as amended, seconded by Vice Chairman Representative Jim Schmidt. Clerk takes roll call vote. 6 yeas, 0 nays and 1 absent. Motion carries.**

**(28:55) Chairman Representative David Monson:** Closes meeting on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

**Appropriations Committee**  
Roughrider Room, State Capitol

HB 1020  
2/14/2019  
32807

- Subcommittee  
 Conference Committee

Committee Clerk: Risa Bergquist by Caitlin Fleck

**Explanation or reason for introduction of bill/resolution:**

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

**Minutes:**

**Chairman Delzer:** Opened hearing.

**Representative Boe:** Explaining amendment 19.0208.01002.

**Chairman Delzer:** How many times have they asked for funding for the study?

**Representative Boe:** They didn't ask for that money, the governor wanted that study.

**Chairman Delzer:** Where was the money ask for from then?

**2:50 Representative Monson:** It was because of HB 1066, and if that goes forward there will be a need for a lot of upgrades to what they have done in the past for their studies.

**Representative Boe:** Last study was in 15-17 biennium for a cost of \$719,000.

**Chairman Delzer:** Did you ask who paid for that?

**Representative Boe:** I believe we did.

**Chairman Delzer:** I believe the Western counties did.

**Representative Boe:** Continued explaining amendment.

**Chairman Delzer:** So they have authority to raise funding?

**Representative Boe:** They do, they can make those adjustments as the funding changes.

**Chairman Delzer:** There is still capital bond payments, that the reductions then?

**Representative Boe:** There are bond payments and they expire in 2023. Continued explanation.

**Chairman Delzer:** Did you put the caveat in there?

**Representative Boe:** I do not believe we did.

**Representative Monson:** They gave us assurances that they weren't going to charge the 4-H materials and they got backlash and decided to not continue that past the one year that they tried it. There are more 4-H individuals now that they don't charge the fees.

**Representative Boe:** Continued explanation.

**Chairman Delzer:** What else in the existing bill moved over?

**Representative Boe:** In the existing bill we have Dickinson Research with their mineral rights and the Williston Research with their mineral rights. They retained their transfer authority and their ability to adjust their fulltime employees (FTE). Section 8 is unexpended general fund carryover authority.

**Chairman Delzer:** So why do you give them that?

**Representative Boe:** I believe that is for them to be able to sign contracts for research.

**Chairman Delzer:** That shouldn't be on the general fund side thought should it?

**Alex Cronquist, Legislative Council:** It is something they have had and it's in their base budget, I'm not sure why they have that though.

**Chairman Delzer:** Did you get into what kind of carryover they are carrying over?

**Representative Boe:** I don't recall.

**Representative Monson:** We talked about some of that but we didn't dig into it.

**Larry Martin, Office of Management and Budget:** I believe that language is similar to the other higher education bills, they have the same ability.

**Chairman Delzer:** Do you have any idea how much they are carrying over? Or why they have that ability?

**Mr. Martin:** I can find that out for you.

**Representative Boe:** I move adopt amendment 19.0208.01002

**Representative Schmidt:** Second

**Representative J. Nelson:** With the plant in Williston they had the 1.5 million in the budget and we added 250,000? We are saying they should be able to build it for 1.75 million and if the Bakken factor kicks in for another half million they will have to raise the money?

**Representative Boe:** That's correct.

**Voice Vote. Motion carries.**

**Representative Boe:** I move a do pass as amended.

**Representative Monson:** Second.

**Roll Call Vote: 20 yes, 0 no, 1 absent.**

Motion Carries.

Floor Assignment: **Representative Boe**

Meeting closed.

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1020

Page 1, replace lines 17 through 24 with:

"	Base Level	Adjustments or Enhancements	Appropriation
Extension service	\$51,188,489	\$2,167,185	\$53,355,674
Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	<u>26,646,689</u>	<u>982,267</u>	<u>27,628,956</u>
Total general fund	\$25,633,320	\$1,184,918	\$26,818,238
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 3 through 9 with:

"	Base Level	Adjustments or Enhancements	Appropriation
Northern crops institute	<u>\$3,642,721</u>	<u>\$186,426</u>	<u>\$3,829,147</u>
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	<u>1,755,830</u>	<u>137,010</u>	<u>1,892,840</u>
Total general fund	\$1,886,891	\$49,416	\$1,936,307
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 12 through 19 with:

"	Base Level	Adjustments or Enhancements	Appropriation
Upper great plains transportation institute	<u>\$22,060,242</u>	<u>\$777,487</u>	<u>\$22,837,729</u>
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	<u>18,617,068</u>	<u>257,255</u>	<u>18,874,323</u>
Total general fund	\$3,443,174	\$520,232	\$3,963,406
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 22 through 28 with:

"	Base Level	Adjustments or Enhancements	Appropriation
Main research center	<u>\$108,642,243</u>	<u>(\$775,377)</u>	<u>\$107,866,866</u>
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	<u>59,084,828</u>	<u>157,539</u>	<u>59,242,367</u>
Total general fund	\$49,557,415	(\$932,916)	\$48,624,499
Full-time equivalent positions	336.12	3.93	340.05"

Page 3, replace lines 1 through 13 with:

"	Base Level	Adjustments or Enhancements	Appropriation
Dickinson research center	\$6,825,551	(\$152,469)	\$6,673,082
Central grasslands research center	3,423,624	(56,881)	3,366,743
Hettinger research center	4,975,133	(22,900)	4,952,233



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Langdon research center	2,964,607	(16,696)	2,947,911
North central research center	4,953,652	314	4,953,966
Williston research center	5,118,890	(50,125)	5,068,765
Carrington research center	<u>9,175,491</u>	<u>198,300</u>	<u>9,373,791</u>
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	<u>20,281,691</u>	<u>459,338</u>	<u>20,741,029</u>
Total general fund	\$17,155,257	(\$559,795)	\$16,595,462
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 16 through 20 with:

"		<u>Adjustments or</u>	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
Agronomy seed farm	\$1,536,129	\$26,205	\$1,562,334
Total special funds	\$1,536,129	\$26,205	\$1,562,334
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 23 through 27 with:

"		<u>Adjustments or</u>	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
Grand total general fund	\$97,676,057	\$261,855	\$97,937,912
Grand total other funds	<u>127,922,235</u>	<u>2,019,614</u>	<u>129,941,849</u>
Grand total all funds	\$225,598,292	\$2,281,469	\$227,879,761"

Page 3, remove lines 30 and 31

Page 4, replace lines 1 through 5 with:

"	<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
Seed cleaning plants		\$1,500,000	\$750,000
Extraordinary repairs		0	1,440,465
Junior master gardener program		15,000	0
Road and bridge asset management system		<u>300,000</u>	<u>0</u>
Total all funds		\$1,815,000	\$2,190,465
Total other funds		<u>1,700,000</u>	<u>1,940,465</u>
Total general fund		\$115,000	\$250,000"

Page 4, after line 13, insert:

**"SECTION 4. ESTIMATED INCOME - STRATEGIC INVESTMENT AND IMPROVEMENTS FUND.** The estimated income line item in subdivision 4 of section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs."

Page 5, after line 7, insert:

**"SECTION 10. EXEMPTION - WILLISTON SEED CLEANING PLANT.** The \$1,500,000 of special funds appropriation authority for the Williston research extension center included in subdivision 5 of section 1 of chapter 45 of the 2017 Session Laws for a seed cleaning plant is not subject to the provisions of section 54-44.1-11 and may be continued and expended by the Williston research extension center for the seed cleaning plant during the biennium beginning July 1, 2019, and ending June 30, 2021."

Re-number accordingly

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**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of House Action**

	Base Budget	House Changes	House Version
<b>Transportation Institute</b>			
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	18,617,068	257,255	18,874,323
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE	43.88	0.00	43.88
<b>Branch Research Centers</b>			
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	20,281,691	459,338	20,741,029
General fund	\$17,155,257	(\$559,795)	\$16,595,462
FTE	110.29	(0.48)	109.81
<b>NDSU Extension Service</b>			
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	26,646,689	982,267	27,628,956
General fund	\$25,633,320	\$1,184,918	\$26,818,238
FTE	252.98	(10.47)	242.51
<b>Northern Crops Institute</b>			
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	1,755,830	137,010	1,892,840
General fund	\$1,886,891	\$49,416	\$1,936,307
FTE	11.80	1.00	12.80
<b>Main Research Center</b>			
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	59,084,828	157,539	59,242,367
General fund	\$49,557,415	(\$932,916)	\$48,624,499
FTE	336.12	3.93	340.05
<b>Agronomy Seed Farm</b>			
Total all funds	\$1,536,129	\$26,205	\$1,562,334
Less estimated income	1,536,129	26,205	1,562,334
General fund	\$0	\$0	\$0
FTE	3.00	0.00	3.00
<b>Bill total</b>			
Total all funds	\$225,598,292	\$2,281,469	\$227,879,761
Less estimated income	127,922,235	2,019,614	129,941,849
General fund	\$97,676,057	\$261,855	\$97,937,912
FTE	758.07	(6.02)	752.05

**House Bill No. 1020 - Transportation Institute - House Action**

	Base Budget	House Changes	House Version
Upper Great Plains Trans. Institute	\$22,060,242	\$777,487	\$22,837,729
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	18,617,068	257,255	18,874,323
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE	43.88	0.00	43.88

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**Department 627 - Transportation Institute - Detail of House Changes**

	Adds Funding for Salary and Benefit Increases <sup>1</sup>	Adjusts Funding for Miscellaneous Expenses <sup>2</sup>	Adds Funding for a Road and Bridge Study <sup>3</sup>	Total House Changes
Upper Great Plains Trans. Institute	\$398,350	(\$70,863)	\$450,000	\$777,487
Total all funds	\$398,350	(\$70,863)	\$450,000	\$777,487
Less estimated income	257,255	0	0	257,255
General fund	\$141,095	(\$70,863)	\$450,000	\$520,232
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$83,222	\$136,645	\$219,867
Health insurance increase	57,873	120,610	178,483
Total	\$141,095	\$257,255	\$398,350

<sup>2</sup> Funding is reduced by \$70,863 from the general fund for miscellaneous expenses.

<sup>3</sup> Ongoing funding of \$450,000 from the general fund is added to continue the road and bridge study.

**House Bill No. 1020 - Branch Research Centers - House Action**

	Base Budget	House Changes	House Version
Dickinson Research Center	\$6,825,551	(\$152,469)	\$6,673,082
Central Grasslands Research Center	3,423,624	(56,881)	3,366,743
Hettinger Research Center	4,975,133	(22,900)	4,952,233
Langdon Research Center	2,964,607	(16,696)	2,947,911
North Central Research Center	4,953,652	314	4,953,966
Williston Research Center	5,118,890	(50,125)	5,068,765
Carrington Research Center	9,175,491	198,300	9,373,791
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	20,281,691	459,338	20,741,029
General fund	\$17,155,257	(\$559,795)	\$16,595,462
FTE	110.29	(0.48)	109.81

**Department 628 - Branch Research Centers - Detail of House Changes**

	Removes FTE Position <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Reduces Funding for Operating Expenses <sup>3</sup>	Adds Funding for Oakes Irrigation Site <sup>4</sup>	Reduces Funding for Capital Bond Payments <sup>5</sup>	Total House Changes
Dickinson Research Center		\$110,917	(\$263,386)			(\$152,469)
Central Grasslands Research Center		82,870	(130,969)		(\$8,782)	(56,881)
Hettinger Research Center		118,850	(141,750)			(22,900)
Langdon Research Center		76,755	(93,451)			(16,696)
North Central Research Center		117,939	(103,316)		(14,309)	314
Williston Research Center		148,606	(198,731)			(50,125)
Carrington Research Center		267,257	(268,957)	\$200,000		198,300
Total all funds	\$0	\$923,194	(\$1,200,560)	\$200,000	(\$23,091)	(\$100,457)
Less estimated income	0	259,338	0	200,000	0	459,338
General fund	\$0	\$663,856	(\$1,200,560)	\$0	(\$23,091)	(\$559,795)
FTE	(0.48)	0.00	0.00	0.00	0.00	(0.48)

<sup>1</sup> Pursuant to Section 10 of Chapter 45 if the 2017 Session Laws, the branch research centers removed 0.48 FTE

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positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	<u>General Fund</u>	<u>Other Funds</u>	<u>Total</u>
<b>Dickinson Research Center</b>			
Salary increase	\$49,814	\$6,041	\$55,855
Health insurance increase	<u>50,600</u>	<u>4,462</u>	<u>55,062</u>
Total	\$100,414	\$10,503	\$110,917
<b>Central Grasslands Research Center</b>			
Salary increase	\$36,824	\$1,424	\$38,248
Health insurance increase	<u>42,390</u>	<u>2,232</u>	<u>44,622</u>
Total	\$79,214	\$3,656	\$82,870
<b>Hettinger Research Center</b>			
Salary increase	\$45,284	\$11,098	\$56,382
Health insurance increase	<u>44,620</u>	<u>17,848</u>	<u>62,468</u>
Total	\$89,904	\$28,946	\$118,850
<b>Langdon Research Center</b>			
Salary increase	\$33,925	\$2,671	\$36,596
Health insurance increase	<u>36,813</u>	<u>3,346</u>	<u>40,159</u>
Total	\$70,738	\$6,017	\$76,755
<b>North Central Research Center</b>			
Salary increase	\$38,586	\$21,345	\$59,931
Health insurance increase	<u>28,781</u>	<u>29,227</u>	<u>58,008</u>
Total	\$67,367	\$50,572	\$117,939
<b>Williston Research Center</b>			
Salary increase	\$66,310	\$15,366	\$81,676
Health insurance increase	<u>49,082</u>	<u>17,848</u>	<u>66,930</u>
Total	\$115,392	\$33,214	\$148,606
<b>Carrington Research Center</b>			
Salary increase	\$71,665	\$52,806	\$124,471
Health insurance increase	<u>69,162</u>	<u>73,624</u>	<u>142,786</u>
Total	\$140,827	\$126,430	\$267,257
<b>Total</b>			
Salary increase	\$342,408	\$110,751	\$453,159
Health insurance increase	<u>321,448</u>	<u>148,587</u>	<u>470,035</u>
Grand total	\$663,856	\$259,338	\$923,194

<sup>3</sup> Funding is reduced by \$1,200,560 from the general fund for operating expenses.

<sup>4</sup> Funding of \$200,000 from other funds is added for the Oakes irrigation site at the Carrington Research Center.

<sup>5</sup> Funding is reduced by \$23,091 from the general fund for capital bond payments.

**House Bill No. 1020 - NDSU Extension Service - House Action**

	<u>Base Budget</u>	<u>House Changes</u>	<u>House Version</u>
Extension Service	\$51,188,489	\$2,167,185	\$53,355,674
Soil Conservation Committee	<u>1,091,520</u>		<u>1,091,520</u>
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	<u>26,646,689</u>	<u>982,267</u>	<u>27,628,956</u>
General fund	\$25,633,320	\$1,184,918	\$26,818,238
FTE	252.98	(10.47)	242.51

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**Department 630 - NDSU Extension Service - Detail of House Changes**

	Removes FTE Positions <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adds Funding for Miscellaneous Expenses <sup>3</sup>	Total House Changes
Extension Service Soil Conservation Committee		\$2,067,185	\$100,000	\$2,167,185
Total all funds	\$0	\$2,067,185	\$100,000	\$2,167,185
Less estimated income	0	982,267	0	982,267
General fund	\$0	\$1,084,918	\$100,000	\$1,184,918
FTE	(10.47)	0.00	0.00	(10.47)

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, NDSU Extension Service removed 10.47 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$577,488	\$473,054	\$1,050,542
Health insurance increase	507,430	509,213	1,016,643
Total	\$1,084,918	\$982,267	\$2,067,185

<sup>3</sup> Funding of \$100,000 from the general fund is added for miscellaneous expenses.

**House Bill No. 1020 - Northern Crops Institute - House Action**

	Base Budget	House Changes	House Version
Northern Crops Institute	\$3,642,721	\$186,426	\$3,829,147
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	1,755,830	137,010	1,892,840
General fund	\$1,886,891	\$49,416	\$1,936,307
FTE	11.80	1.00	12.80

**Department 638 - Northern Crops Institute - Detail of House Changes**

	Adds One FTE Position <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Total House Changes
Northern Crops Institute		\$124,164	\$62,262	\$186,426
Total all funds	\$0	\$124,164	\$62,262	\$186,426
Less estimated income	0	37,010	100,000	137,010
General fund	\$0	\$87,154	(\$37,738)	\$49,416
FTE	1.00	0.00	0.00	1.00

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, the Northern Crops Institute added 1.00 FTE position.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$46,996	\$19,162	\$66,158
Health insurance increase	40,158	17,848	58,006
Total	\$87,154	\$37,010	\$124,164

<sup>3</sup> Funding is adjusted by \$62,262 for miscellaneous expenses, including a reduction of \$37,738 from the general fund and an increase of \$100,000 from other funds.

House Bill No. 1020 - Main Research Center - House Action

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	Base Budget	House Changes	House Version
Main Research Center	\$108,642,243	(\$775,377)	\$107,866,866
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	59,084,828	157,539	59,242,367
General fund	\$49,557,415	(\$932,916)	\$48,624,499
FTE	336.12	3.93	340.05

Department 640 - Main Research Center - Detail of House Changes

	Adds FTE Positions <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Reduces Funding for Capital Bond Payments <sup>4</sup>	Reduces Capital Funding from Other Funds <sup>5</sup>	Adds One-Time Funding for Extraordinary Repairs <sup>6</sup>
Main Research Center		\$3,052,389	\$44,258	(\$65,091)	(\$5,997,398)	\$1,440,465
Total all funds	\$0	\$3,052,389	\$44,258	(\$65,091)	(\$5,997,398)	\$1,440,465
Less estimated income	0	1,214,472	3,000,000	0	(5,997,398)	1,440,465
General fund	\$0	\$1,837,917	(\$2,955,742)	(\$65,091)	\$0	\$0
FTE	3.93	0.00	0.00	0.00	0.00	0.00

	Adds One-Time Funding for a Williston Seed Cleaning Plant <sup>7</sup>	Total House Changes
Main Research Center	\$750,000	(\$775,377)
Total all funds	\$750,000	(\$775,377)
Less estimated income	500,000	157,539
General fund	\$250,000	(\$932,916)
FTE	0.00	3.93

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, the main research center added 3.93 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$1,039,641	\$593,352	\$1,632,993
Health insurance increase	798,276	621,120	1,419,396
Total	\$1,837,917	\$1,214,472	\$3,052,389

<sup>3</sup> Funding is adjusted by \$44,258 for miscellaneous expenses, including a reduction of \$2,955,742 from the general fund and an increase of \$3,000,000 from other funds.

<sup>4</sup> Funding is reduced by \$65,091 from the general fund for capital bond payments.

<sup>5</sup> Capital funding is reduced by \$5,997,398 from other funds.

<sup>6</sup> One-time funding of \$1,440,465 from the strategic investment and improvements fund is added for extraordinary repairs.

<sup>7</sup> One-time funding of \$750,000 is added for a Williston seed cleaning plant, including \$250,000 from the general fund and \$500,000 from other funds.

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**House Bill No. 1020 - Agronomy Seed Farm - House Action**

	Base Budget	House Changes	House Version
Agronomy Seed Farm	\$1,536,129	\$26,205	\$1,562,334
Total all funds	\$1,536,129	\$26,205	\$1,562,334
Less estimated income	1,536,129	26,205	1,562,334
General fund	\$0	\$0	\$0
FTE	3.00	0.00	3.00

**Department 649 - Agronomy Seed Farm - Detail of House Changes**

	Adds Funding for Salary and Benefit Increases <sup>1</sup>	Total House Changes
Agronomy Seed Farm	\$26,205	\$26,205
Total all funds	\$26,205	\$26,205
Less estimated income	26,205	26,205
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	Other Funds
Salary increase	\$12,819
Health insurance increase	13,386
Total	\$26,205

**House Bill No. 1020 - Other Changes - House Action**

This amendment also adds a new section to allow funds appropriated for the 2017-19 biennium for a Williston seed cleaning plant to be continued and spent during the 2019-21 biennium.

**2019 HOUSE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. HB 1020**

House Appropriations - Education and Environment Division Committee

Subcommittee

Amendment LC# or Description: 19.0208.01002 Voice Vote - passed

- Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar
- Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Representative Tracy Boe Seconded By Representative Jim Schmidt  
Vice Chairman

<b>Representatives</b>	<b>Yes</b>	<b>No</b>	<b>Representatives</b>	<b>Yes</b>	<b>No</b>
Chair David Monson			Representative Tracy Boe		
Vice Chair Jim Schmidt					
Representative Bob Martinson					
Representative Mike Nathe					
Representative Mark Sanford					
Representative Mike Schatz					

Total (Yes) Voice Vote - passed No \_\_\_\_\_

Absent \_\_\_\_\_

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent: voice vote carried to adopt amendment  
19.0208.01002



**2019 HOUSE STANDING COMMITTEE  
 ROLL CALL VOTES  
 BILL/RESOLUTION NO. HB 1020**

House Appropriations - Education and Environment Division Committee

Subcommittee

Amendment LC# or Description: \_\_\_\_\_

Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
 Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Representative Tracy Boe    Vice Chairman  
 Seconded By Representative Jim Schmidt

Representatives	Yes	No	Representatives	Yes	No
Chair David Monson	X		Representative Tracy Boe	X	
Vice Chair Jim Schmidt	X				
Representative Bob Martinson	X				
Representative Mike Nathe	X				
Representative Mark Sanford	X				
Representative Mike Schatz					

Total    (Yes) 6    No 0

Absent 1

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:

Date: 2/14/2019  
Roll Call Vote #: 1

**2019 HOUSE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. 1020**

House Appropriations Committee

Subcommittee

Amendment LC# or Description: 19.0208.01002

Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Representative Boe Seconded By Representative Schmidt

Representatives	Yes	No	Representatives	Yes	No
Chairman Delzer					
Representative Kempenich					
Representative Anderson			Representative Schobinger		
Representative Beadle			Representative Vigesaa		
Representative Bellew					
Representative Brandenburg					
Representative Howe			Representative Boe		
Representative Kreidt			Representative Holman		
Representative Martinson			Representative Mock		
Representative Meier					
Representative Monson					
Representative Nathe					
Representative J. Nelson					
Representative Sanford					
Representative Schatz					
Representative Schmidt					

Total (Yes) \_\_\_\_\_ No \_\_\_\_\_

Absent \_\_\_\_\_

Floor Assignment \_\_\_\_\_

**Voice Vote/Motion Carries**

Date: 2/14/2019  
Roll Call Vote #: 2

**2019 HOUSE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. HB 1020**

House Appropriations Committee

Subcommittee

Amendment LC# or Description: \_\_\_\_\_

Recommendation: **Adopt Amendment**  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Representative Boe Seconded By Representative Monson

<b>Representatives</b>	<b>Yes</b>	<b>No</b>	<b>Representatives</b>	<b>Yes</b>	<b>No</b>
Chairman Delzer	X				
Representative Kempenich	X				
Representative Anderson	X		Representative Schobinger	X	
Representative Beadle	X		Representative Vigesaa	X	
Representative Bellew	X				
Representative Brandenburg	X				
Representative Howe	X		Representative Boe	X	
Representative Kreidt	X		Representative Holman	X	
Representative Martinson	X		Representative Mock	A	
Representative Meier	X				
Representative Monson	X				
Representative Nathe	X				
Representative J. Nelson	X				
Representative Sanford	X				
Representative Schatz	X				
Representative Schmidt	X				

Total (Yes) 20 No 0

Absent 1

Floor Assignment Representative Boe

**Motion Carries**

REPORT OF STANDING COMMITTEE

HB 1020: Appropriations Committee (Rep. Delzer, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS (20 YEAS, 0 NAYS, 1 ABSENT AND NOT VOTING). HB 1020 was placed on the Sixth order on the calendar.

Page 1, replace lines 17 through 24 with:

	Base Level	Adjustments or Enhancements	Appropriation
Extension service	\$51,188,489	\$2,167,185	\$53,355,674
Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	<u>26,646,689</u>	<u>982,267</u>	<u>27,628,956</u>
Total general fund	\$25,633,320	\$1,184,918	\$26,818,238
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 3 through 9 with:

	Base Level	Adjustments or Enhancements	Appropriation
Northern crops institute	<u>\$3,642,721</u>	<u>\$186,426</u>	<u>\$3,829,147</u>
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	<u>1,755,830</u>	<u>137,010</u>	<u>1,892,840</u>
Total general fund	\$1,886,891	\$49,416	\$1,936,307
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 12 through 19 with:

	Base Level	Adjustments or Enhancements	Appropriation
Upper great plains transportation institute	<u>\$22,060,242</u>	<u>\$777,487</u>	<u>\$22,837,729</u>
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	<u>18,617,068</u>	<u>257,255</u>	<u>18,874,323</u>
Total general fund	\$3,443,174	\$520,232	\$3,963,406
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 22 through 28 with:

	Base Level	Adjustments or Enhancements	Appropriation
Main research center	<u>\$108,642,243</u>	<u>(\$775,377)</u>	<u>\$107,866,866</u>
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	<u>59,084,828</u>	<u>157,539</u>	<u>59,242,367</u>
Total general fund	\$49,557,415	(\$932,916)	\$48,624,499
Full-time equivalent positions	336.12	3.93	340.05"

Page 3, replace lines 1 through 13 with:

	Base Level	Adjustments or Enhancements	Appropriation
Dickinson research center	\$6,825,551	(\$152,469)	\$6,673,082
Central grasslands research center	3,423,624	(56,881)	3,366,743
Hettinger research center	4,975,133	(22,900)	4,952,233
Langdon research center	2,964,607	(16,696)	2,947,911
North central research center	4,953,652	314	4,953,966
Williston research center	5,118,890	(50,125)	5,068,765
Carrington research center	<u>9,175,491</u>	<u>198,300</u>	<u>9,373,791</u>
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	<u>20,281,691</u>	<u>459,338</u>	<u>20,741,029</u>

Total general fund	\$17,155,257	(\$559,795)	\$16,595,462
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 16 through 20 with:

"		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
Agronomy seed farm	\$1,536,129	\$26,205	\$1,562,334
Total special funds	\$1,536,129	\$26,205	\$1,562,334
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 23 through 27 with:

"		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
Grand total general fund	\$97,676,057	\$261,855	\$97,937,912
Grand total other funds	127,922,235	2,019,614	129,941,849
Grand total all funds	\$225,598,292	\$2,281,469	\$227,879,761"

Page 3, remove lines 30 and 31

Page 4, replace lines 1 through 5 with:

"	<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
Seed cleaning plants		\$1,500,000	\$750,000
Extraordinary repairs		0	1,440,465
Junior master gardener program		15,000	0
Road and bridge asset management system		300,000	0
Total all funds		\$1,815,000	\$2,190,465
Total other funds		1,700,000	1,940,465
Total general fund		\$115,000	\$250,000"

Page 4, after line 13, insert:

**"SECTION 4. ESTIMATED INCOME - STRATEGIC INVESTMENT AND IMPROVEMENTS FUND.** The estimated income line item in subdivision 4 of section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs."

Page 5, after line 7, insert:

**"SECTION 10. EXEMPTION - WILLISTON SEED CLEANING PLANT.** The \$1,500,000 of special funds appropriation authority for the Williston research extension center included in subdivision 5 of section 1 of chapter 45 of the 2017 Session Laws for a seed cleaning plant is not subject to the provisions of section 54-44.1-11 and may be continued and expended by the Williston research extension center for the seed cleaning plant during the biennium beginning July 1, 2019, and ending June 30, 2021."

Re-number accordingly

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of House Action**

	Base Budget	House Changes	House Version
Transportation Institute			
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	18,617,068	257,255	18,874,323
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE	43.88	0.00	43.88

Branch Research Centers			
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	20,281,691	459,338	20,741,029
General fund	\$17,155,257	(\$559,795)	\$16,595,462
FTE	110.29	(0.48)	109.81
NDSU Extension Service			
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	26,646,689	982,267	27,628,956
General fund	\$25,633,320	\$1,184,918	\$26,818,238
FTE	252.98	(10.47)	242.51
Northern Crops Institute			
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	1,755,830	137,010	1,892,840
General fund	\$1,886,891	\$49,416	\$1,936,307
FTE	11.80	1.00	12.80
Main Research Center			
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	59,084,828	157,539	59,242,367
General fund	\$49,557,415	(\$932,916)	\$48,624,499
FTE	336.12	3.93	340.05
Agronomy Seed Farm			
Total all funds	\$1,536,129	\$26,205	\$1,562,334
Less estimated income	1,536,129	26,205	1,562,334
General fund	\$0	\$0	\$0
FTE	3.00	0.00	3.00
Bill total			
Total all funds	\$225,598,292	\$2,281,469	\$227,879,761
Less estimated income	127,922,235	2,019,614	129,941,849
General fund	\$97,676,057	\$261,855	\$97,937,912
FTE	758.07	(6.02)	752.05

**House Bill No. 1020 - Transportation Institute - House Action**

	Base Budget	House Changes	House Version
Upper Great Plains Trans. Institute	\$22,060,242	\$777,487	\$22,837,729
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	18,617,068	257,255	18,874,323
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE	43.88	0.00	43.88

**Department 627 - Transportation Institute - Detail of House Changes**

	Adds Funding for Salary and Benefit Increases <sup>1</sup>	Adjusts Funding for Miscellaneous Expenses <sup>2</sup>	Adds Funding for a Road and Bridge Study <sup>3</sup>	Total House Changes
Upper Great Plains Trans. Institute	\$398,350	(\$70,863)	\$450,000	\$777,487
Total all funds	\$398,350	(\$70,863)	\$450,000	\$777,487
Less estimated income	257,255	0	0	257,255
General fund	\$141,095	(\$70,863)	\$450,000	\$520,232
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$83,222	\$136,645	\$219,867
Health insurance increase	57,873	120,610	178,483
Total	\$141,095	\$257,255	\$398,350

<sup>2</sup> Funding is reduced by \$70,863 from the general fund for miscellaneous expenses.

<sup>3</sup> Ongoing funding of \$450,000 from the general fund is added to continue the road and bridge study.

**House Bill No. 1020 - Branch Research Centers - House Action**

	Base Budget	House Changes	House Version
Dickinson Research Center	\$6,825,551	(\$152,469)	\$6,673,082
Central Grasslands Research Center	3,423,624	(56,881)	3,366,743
Hettinger Research Center	4,975,133	(22,900)	4,952,233
Langdon Research Center	2,964,607	(16,696)	2,947,911
North Central Research Center	4,953,652	314	4,953,966
Williston Research Center	5,118,890	(50,125)	5,068,765
Carrington Research Center	9,175,491	198,300	9,373,791
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	20,281,691	459,338	20,741,029
General fund	\$17,155,257	(\$559,795)	\$16,595,462
FTE	110.29	(0.48)	109.81

**Department 628 - Branch Research Centers - Detail of House Changes**

	Removes FTE Position <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Reduces Funding for Operating Expenses <sup>3</sup>	Adds Funding for Oakes Irrigation Site <sup>4</sup>	Reduces Funding for Capital Bond Payments <sup>5</sup>	Total House Changes
Dickinson Research Center		\$110,917	(\$263,386)			(\$152,469)
Central Grasslands Research Center		82,870	(130,969)		(\$8,782)	(56,881)
Hettinger Research Center		118,850	(141,750)			(22,900)
Langdon Research Center		76,755	(93,451)			(16,696)
North Central Research Center		117,939	(103,316)		(14,309)	314
Williston Research Center		148,606	(198,731)			(50,125)
Carrington Research Center		267,257	(268,957)	\$200,000		198,300
Total all funds	\$0	\$923,194	(\$1,200,560)	\$200,000	(\$23,091)	(\$100,457)
Less estimated income	0	259,338	0	200,000	0	459,338
General fund	\$0	\$663,856	(\$1,200,560)	\$0	(\$23,091)	(\$559,795)
FTE	(0.48)	0.00	0.00	0.00	0.00	(0.48)

<sup>1</sup> Pursuant to Section 10 of Chapter 45 if the 2017 Session Laws, the branch research centers removed 0.48 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
<b>Dickinson Research Center</b>			
Salary increase	\$49,814	\$6,041	\$55,855
Health insurance increase	50,600	4,462	55,062
Total	\$100,414	\$10,503	\$110,917
<b>Central Grasslands Research Center</b>			
Salary increase	\$36,824	\$1,424	\$38,248
Health insurance increase	42,390	2,232	44,622
Total	\$79,214	\$3,656	\$82,870
<b>Hettinger Research Center</b>			
Salary increase	\$45,284	\$11,098	\$56,382
Health insurance increase	44,620	17,848	62,468
Total	\$89,904	\$28,946	\$118,850
<b>Langdon Research Center</b>			
Salary increase	\$33,925	\$2,671	\$36,596
Health insurance increase	36,813	3,346	40,159
Total	\$70,738	\$6,017	\$76,755
<b>North Central Research Center</b>			
Salary increase	\$38,586	\$21,345	\$59,931
Health insurance increase	28,781	29,227	58,008
Total	\$67,367	\$50,572	\$117,939
<b>Williston Research Center</b>			
Salary increase	\$66,310	\$15,366	\$81,676
Health insurance increase	49,082	17,848	66,930
Total	\$115,392	\$33,214	\$148,606

<b>Carrington Research Center</b>			
Salary increase	\$71,665	\$52,806	\$124,471
Health insurance increase	69,162	73,624	142,786
Total	\$140,827	\$126,430	\$267,257
<b>Total</b>			
Salary increase	\$342,408	\$110,751	\$453,159
Health insurance increase	321,448	148,587	470,035
Grand total	\$663,856	\$259,338	\$923,194

<sup>3</sup> Funding is reduced by \$1,200,560 from the general fund for operating expenses.

<sup>4</sup> Funding of \$200,000 from other funds is added for the Oakes irrigation site at the Carrington Research Center.

<sup>5</sup> Funding is reduced by \$23,091 from the general fund for capital bond payments.

**House Bill No. 1020 - NDSU Extension Service - House Action**

	Base Budget	House Changes	House Version
Extension Service	\$51,188,489	\$2,167,185	\$53,355,674
Soil Conservation Committee	1,091,520		1,091,520
<hr/>			
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	26,646,689	982,267	27,628,956
General fund	\$25,633,320	\$1,184,918	\$26,818,238
<hr/>			
FTE	252.98	(10.47)	242.51

**Department 630 - NDSU Extension Service - Detail of House Changes**

	Removes FTE Positions <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adds Funding for Miscellaneous Expenses <sup>3</sup>	Total House Changes
Extension Service		\$2,067,185	\$100,000	\$2,167,185
Soil Conservation Committee				
<hr/>				
Total all funds	\$0	\$2,067,185	\$100,000	\$2,167,185
Less estimated income	0	982,267	0	982,267
General fund	\$0	\$1,084,918	\$100,000	\$1,184,918
<hr/>				
FTE	(10.47)	0.00	0.00	(10.47)

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, NDSU Extension Service removed 10.47 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$577,488	\$473,054	\$1,050,542
Health insurance increase	507,430	509,213	1,016,643
Total	\$1,084,918	\$982,267	\$2,067,185

<sup>3</sup> Funding of \$100,000 from the general fund is added for miscellaneous expenses.

**House Bill No. 1020 - Northern Crops Institute - House Action**

	Base Budget	House Changes	House Version
Northern Crops Institute	\$3,642,721	\$186,426	\$3,829,147
<hr/>			
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	1,755,830	137,010	1,892,840
General fund	\$1,886,891	\$49,416	\$1,936,307
<hr/>			
FTE	11.80	1.00	12.80



**Department 638 - Northern Crops Institute - Detail of House Changes**

	Adds One FTE Position <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Total House Changes
Northern Crops Institute		\$124,164	\$62,262	\$186,426
Total all funds	\$0	\$124,164	\$62,262	\$186,426
Less estimated income	0	37,010	100,000	137,010
General fund	\$0	\$87,154	(\$37,738)	\$49,416
FTE	1.00	0.00	0.00	1.00

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, the Northern Crops Institute added 1.00 FTE position.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$46,996	\$19,162	\$66,158
Health insurance increase	40,158	17,848	58,006
Total	\$87,154	\$37,010	\$124,164

<sup>3</sup> Funding is adjusted by \$62,262 for miscellaneous expenses, including a reduction of \$37,738 from the general fund and an increase of \$100,000 from other funds.

**House Bill No. 1020 - Main Research Center - House Action**

	Base Budget	House Changes	House Version
Main Research Center	\$108,642,243	(\$775,377)	\$107,866,866
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	59,084,828	157,539	59,242,367
General fund	\$49,557,415	(\$932,916)	\$48,624,499
FTE	336.12	3.93	340.05

**Department 640 - Main Research Center - Detail of House Changes**

	Adds FTE Positions <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Reduces Funding for Capital Bond Payments <sup>4</sup>	Reduces Capital Funding from Other Funds <sup>5</sup>	Adds One-Time Funding for Extraordinary Repairs <sup>6</sup>
Main Research Center		\$3,052,389	\$44,258	(\$65,091)	(\$5,997,398)	\$1,440,465
Total all funds	\$0	\$3,052,389	\$44,258	(\$65,091)	(\$5,997,398)	\$1,440,465
Less estimated income	0	1,214,472	3,000,000	0	(5,997,398)	1,440,465
General fund	\$0	\$1,837,917	(\$2,955,742)	(\$65,091)	\$0	\$0
FTE	3.93	0.00	0.00	0.00	0.00	0.00

	Adds One-Time Funding for a Williston Seed Cleaning Plant <sup>2</sup>	Total House Changes
Main Research Center	\$750,000	(\$775,377)
Total all funds	\$750,000	(\$775,377)
Less estimated income	500,000	157,539
General fund	\$250,000	(\$932,916)
FTE	0.00	3.93

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, the main research center added 3.93 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$1,039,641	\$593,352	\$1,632,993
Health insurance increase	798,276	621,120	1,419,396
Total	\$1,837,917	\$1,214,472	\$3,052,389

<sup>3</sup> Funding is adjusted by \$44,258 for miscellaneous expenses, including a reduction of \$2,955,742 from the general fund and an increase of \$3,000,000 from other funds.

<sup>4</sup> Funding is reduced by \$65,091 from the general fund for capital bond payments.

<sup>5</sup> Capital funding is reduced by \$5,997,398 from other funds.

<sup>6</sup> One-time funding of \$1,440,465 from the strategic investment and improvements fund is added for extraordinary repairs.

<sup>7</sup> One-time funding of \$750,000 is added for a Williston seed cleaning plant, including \$250,000 from the general fund and \$500,000 from other funds.

**House Bill No. 1020 - Agronomy Seed Farm - House Action**

	Base Budget	House Changes	House Version
Agronomy Seed Farm	\$1,536,129	\$26,205	\$1,562,334
Total all funds	\$1,536,129	\$26,205	\$1,562,334
Less estimated income	1,536,129	26,205	1,562,334
General fund	\$0	\$0	\$0
FTE	3.00	0.00	3.00

**Department 649 - Agronomy Seed Farm - Detail of House Changes**

	Adds Funding for Salary and Benefit Increases <sup>1</sup>	Total House Changes
Agronomy Seed Farm	\$26,205	\$26,205
Total all funds	\$26,205	\$26,205
Less estimated income	26,205	26,205
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	Other Funds
Salary increase	\$12,819
Health insurance increase	13,386
Total	\$26,205

**House Bill No. 1020 - Other Changes - House Action**

This amendment also adds a new section to allow funds appropriated for the 2017-19 biennium for a Williston seed cleaning plant to be continued and spent during the 2019-21 biennium.

**2019 SENATE APPROPRIATIONS**

**HB 1020**

# 2019 SENATE STANDING COMMITTEE MINUTES

**Appropriations Committee**  
Harvest Room, State Capitol

HB 1020 - UGPTI  
3/20/2019  
JOB # 34001

- Subcommittee  
 Conference Committee

Committee Clerk: Alice Delzer / Florence Mayer

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation to defray the expenses of NDSU – Upper Great Plains Transportation Institute (UGPTI)

## Minutes:

- 1.UGPTI 2019-2021 Budget Request
- 2.2019-2021 Biennial Budget Request
- 3.Steve Salwei, NDDOT
- 4.Linda Svihovec, NDAC
- 5.Dana G. Larsen, Ward County Engineer
- 6.AI Heiser, NDLTAP

**Chairman Holmberg:** Called the Committee to order on HB 1020 regarding the UGPTI. Roll call was taken. All committee members were present. Danielle Foster, Legislative Council, Chris Kadrmas, Legislative Council and Larry Martin, OMB were also present.

**Dr. Dean L. Bresciani, President, NDSU:** A catch phrase we have used for several years at NDSU, when asked what we do, “We are feeding the world and curing cancer”. You’re about to hear from individuals who are enthusiastic about that statement. He introduced Denver Tolliver, Director of Upper Great Plains Transportation Institute (UGPTI).

**Denver Tolliver, Director UGPTI:** Testified in favor of HB 1020 and provided Attachment #1, a presentation entitled UGPTI 2019-2021 Budget. He also provided Attachment #2, the 2019-2021 Biennial Budget Request.

**Chairman Holmberg:** The subcommittee for HB 1020 is Senator Erbele, Chair, Senator Wanzek and Senator Robinson.

**Denver Tolliver:** Began testimony with the PowerPoint (Attachment #1), pages 1-4.

**(11:30) Senator Oehlke:** On the road and bridge study, you have done the study previously, but nothing has been done with those roads and bridges since?

**Denver Tolliver:** Correct, they did not have the funding.

**Senator Oehlke:** So when you do another road and bridge study, do you do that one again even those things haven't changed? Do you only look at the roads and bridges that haven't been address or the ones that were already fixed?

**Denver Tolliver:** The roads and bridges that have been approved, we don't look at them again. We look at the needs, the ones that were not funded previously.

**Senator Oehlke:** So you don't take your thumper truck out to test the road?

**Denver Tolliver:** We don't have to do that for the next several years. We have some good numbers on the sub-grade. We do have many traffic data; we have to collect that every biennium so we know what the conditions are.

**Senator Wanzek:** You are saying that the recommendation by you folks is for the \$975,000 and yet the House did \$450,000. So the \$450,000 is already the difference that we have to address?

**Denver Tolliver:** That is correct.  
Continued with Attachment #1 pages 4-6.

**(19:32) Senator Robinson:** We had the DOT budget a week ago and we are struggling with keeping up. Based on your analysis of where most of our road needs are, do you have a breakdown of where we are with our road repair needs?

**Denver Tolliver:** For the county and township road, we do. I will cover that a little later on. We have a significant number of roads where the present service building rating is already below a 3. That means they need to be resurfaced very soon.  
Continued with Attachment #1 pages 6-10.

**(28:56) Senator Wanzek:** Do you consider the increases in yields in Agriculture, to have an impact on this? I know for our farm, based on a normal year, we had 350 more loads coming out of our farm. Do you consider those things?

**Denver Tolliver:** Yes, we do consult with NASS and our Agriculture College at NDSU. We build those forecasts in.

**Senator Robinson:** Based on our current funding level, how far off are we from maintaining?

**Denver Tolliver:** That is a difficult question. Our data is 3-4 years old. That doesn't sound bad, but when you have heavy truckloads, the roads can deteriorate quickly. I think that if we reengage in the funding in operation prairie dog, we should be able to get on top of it in the very near future.

**Senator Robinson:** We notice a growing number of semis. Many of them no longer have the double axels. Does that have any measurement impact on the roads?

**Denver Tolliver:** That is something we have a really good handle. It depends on the axel load, but a tandem axel spreading the load is always better than a single axel. If you are referring to the dual tires versus single tires, the single tires concentrates the load and it much worse for the pavement.

**Senator Bekkedahl:** This is all great information. Out West, when you talk about the pavement costs, that is an asphalt system you're talking about. In Williston, we have 122 Bakken oil wells in a short circumference. To build a system that lasts for heavy use, we are going to concrete. Are you seeing that other places in your system? What is the cost difference between that and asphalt?

**Denver Tolliver:** We don't see that outside of the cities. Yes, our models handle concrete as well, the initial cost is much higher, but it lasts double or more time. Deciding the best option is a localized engineering decision. It has a lot to do with local situation the traffic, soil, and costs.

**Senator Bekkedahl:** Our preference is to leave them in gravel-based systems. The only issue we have with that is dust control.

**Denver Tolliver:** Our asset management system has something called a "Surface Selection Tool". Based on the amount of traffic you have and cost of aggregate, it will come up with a recommendation of when a gravel road should become paved. I talked mostly about paved roads, but we have a very detailed gravel road model. Based on different truck traffic levels, it looks at different frequencies of graveling, gravel depth, blading, dust control, etc.

**V. Chairman Wanzek:** Any further questions? Anyone else who wishes to comment on this budget?

**Steve Salwei, Transportation Program Director NDDOT:** Testified in favor of HB 1020. Provided **Attachment #3**, which states they support UGPTI and NDDOT has utilized UGPTI as a resource to assist in conducting research and special studies.

**(37:34) Linda Svihovec, ND Association of Counties (NDAC):** Testified in favor of HB 1020 and provided **Attachment #4**, stating the NDAC stands in support of the request for the additional funding needed to update the UGPTI's 2016 Local Roads Infrastructure Needs Study. She also provided **Attachment #5**, testimony from Dana Larsen, Ward County Engineer, which asks for continued support for the infrastructure Needs Study and GRIT (Geographical Roadway Inventory Tool).

**(40:35) Al Heiser, Stark County Road Superintendent, representing ND Local Technical Assistance Program (NDLTAP):** Testified in favor of HB 1020. Provided **Attachment #6**, asking for support for the request for additional funding needed to update the UGPTI Local Roads Infrastructure Needs Study.

**(43:12) Scott Rising, ND Soybeans Growers Association:** (No written testimony.) Testified in favor of HB 1020 regarding UPGTI. Last year we put together a symposium to address the issue of deteriorating roads and using the right type of equipment. We've done a lot of work to encourage our members and all of Agriculture to have the right equipment to reduce the consumption factors. These studies are critically important for putting all of the dollars to the best use. Please provide the investments to help this succeed.

**V. Chairman Wanzek:** Is there anyone else who wants to testify? Seeing none, we will close this portion of HB 1020 regarding the Upper Great Plains Transportation Institute.

# 2019 SENATE STANDING COMMITTEE MINUTES

## Appropriations Committee Harvest Room, State Capitol

HB 1020-Main Research Station, Branch Centers  
3/20/2019  
JOB # 34020 & JOB # 34036

- Subcommittee  
 Conference Committee

Committee Clerk: Alice Delzer, Rose Laning and Alicia Larsgaard

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide for an appropriation to defray the expenses of NDUS- NDSU- Main Research Station and branch centers.

### Minutes:

Testimony # 1 – 43.

**V. Chairman Wanzek:** Called the Committee to order on HB 1020 regarding NDSU Main Research station, Branch Centers & Agronomy Seed Farm. All committee members were present. Larry Martin, OMB and Chris Kadrmas, Legislative Council were also present. The listed Attachments #1 and #2 were presented before the hearing began.

**Attachment # 1** – The list of presenters.

**Attachment 2** – ND Agricultural Experiment Station Biennial Budget Request

**Keith Peltier, General Manager of ProSeed Inc. Chairman of SBARE:** Testified in favor of HB 1020 and provided **Attachment # 3**, which lists the 10 responsibilities of SBARE and states that Ag Research and Extension provides an excellent return on the State's investment.

**(4:35)** I submit that you will be making an investment in the future. State government cannot spend a better dollar than it can for Ag research. Multiple studies over the last 20 years by USDA think tanks, and universities show that over the 40-50-year time period, the average return to public Ag research is 40%. Microsoft has not done that good in the last 10 years. If the Legacy Fund was getting that kind of money, we wouldn't be here asking for money. The wheat varieties released by NDSU are one example this ROI. It had been determined that each variety released is worth between \$69M and \$284 M to the ND economy over the period of time that that variety remained in the market place.

Beef cattle are an important sector for the ND economy. The 2016 nutrient requirements for beef cattle is a tool used by ND cattlemen to more accurately formulate beef diets. It indicates that a 5% improvement in feed efficiency could save the ND cattlemen up to \$25M in feed costs annually. Please remember these numbers; 40% ROI, \$69 - \$289M per variety, and \$25M in feed savings cost.



One out of every four people in ND work in agriculture. Everyone is effected by the research. Agriculture is in every county in ND. Let me share an example that exemplifies the bang for your buck that you get when the extension service delivers the message of Ag research. In the early 90s, there were 6.5 M acres of summer fallow in western ND. Most of it was wheat, summer fallow which is basically a monoculture.

An extension agent from NW North Dakota decided to do some studies on replacing summer fallow with the pulse crops. That research was picked up by Blaine Schatz at the Carrington experiment station and Kent McKay at the Minot station. It expanded to include an application, sunflowers, canola corn, soybeans, minor oil seed crops, and barley. They found that you could produce a vibrant, diverse ecosystem by rotating other crops and systems on summer fallow.

By the late 90s, there were less than 300,000 acres of summer fallow in ND. If you use a conservative number of \$200 an acre gross return to farming, that \$200 multiplied by 6M acres is \$1.2 B. Over the last 20 years, that is over \$20 B. Those are huge numbers that Ag research has called back into the economy of ND.

In the case of transformational information, if you are just talking about \$10 an acre, there are 20M crop land acres in ND, which equals \$200M that we can effect each year on the economy of ND. If you count all the Ag land of 40M acres, that is \$40M a year. Those are big numbers. As a result of identifying cyst nematode as negatively effecting crops, we have distributed over 3,000 cyst nematode samples by the extension agent. The value of planting the variety that is resistant to this crop is about a 40% yield increase. You can see what kind of effect we can have on the economy that way.

4-H is an integral part of extension. The 4-H part of extension can be used as the feeder system for agriculture. You need a feeder system to make it good all the time. A 4-H participant is twice as likely to be civically active. If you ask that people who follow me if they have participated in 4-H, it would likely be most of them. 4-H people are 4 times more likely to give back to their community. That investment in the 4-H actually pays. Remember these numbers: 40% ROI, 69M–284M, \$25M in feed cost, \$20B over 20 years. Those are great numbers are great stories.

We are respectfully asking for whole even budgets and out top two initiatives of research and extension. Our 2<sup>nd</sup> priority is on buildings which would be the seed cleaning plant at Williston. Thank you for your past and future support. I will stand for any questions.

**Senator Robinson:** I grew up on a farm. I remember in the early 60s, my dad had a small field of wheat. It was 20 bushels. I remember him saying he better buy a truck that year. A few years ago, our good friend and former Senator Russ Thane, when we started seeing corn being planted in Barnes and Stutsman County, he said that that is not corn country. He said you are not going to grow big crops in that area with corn. When I think back with what has happened, Senator Wanzek talked about 200-bushel corn, draught resistant varieties, disease resistant varieties, the technology, etc. and even in our area when we had some very dry weeks, last summer, 70 + bushel of wheat! The impact is beyond words. It says research extension is so important to ND and we need to continue to invest in it.

**V. Chairman Wanzek:** Keith, wouldn't you say in my assessment, one thing I think research, technology, and the tools we have today has provided more consistency. I do not know how many times in July, we had 85-95-degree heat and little or no rain. My brother would say if we don't get rain that weekend, the crop would be gone. He said it all the way into August when we finally got rain and we still ended up with a very respectable crop. It makes me wonder if my great grandfather would have had those tools in the 30s that we have today, would it have been as serious as it was for them? I do not think so.

**Mr. Peltier:** All of those tools working together can certainly help benefit agriculture. We are here to help people use those tools and make them better.

**Greg Lardy, AES/EXT Main Station:** Testified in favor of HB 1020 and provided Attachment #4.

**(24:10) Senator Mathern:** 4-H has come up several times this morning. I am wondering if 4-H needs more financial resources or do you need more people? Are there individuals out there willing to be 4-H leaders to meet what is needed?

**Mr. Lardy:** We have experienced a 19% growth in our enrolled in our 4-H over the last 5 years. We have robust 4-H programs throughout the entire state of ND. We can always benefit from more resources. Particular, in term of assisting without volunteer network and development opportunities that are so critical to maintaining that club presence.

**Senator Mathern:** You have plenty of volunteers willing to help?

**Mr. Lardy:** It is a county by county issue. In some, we are stressed in being able to identify enough volunteers for the amount of kids that want to participate. Overall, we have an excellent network of volunteers across the state.

**Senator Erbele:** I believe last session the counties were asked to pick up more of the cost for the extension agent. Has there been any talk with the House or your department to kind of go back to where we were on that? I have not had time to look in the budget to see if that is addressed.

**Mr. Lardy:** That is correct. As a result of the budget cuts that were implemented in 2017, one of the changes made was to move the base policy for county extension agents which in the past NDSU extension would provide 50% of funds for salary for the position and all of the benefit package. In those budget challenges, what we negotiated on a temporary solution with our county partners was a 60/40 split with the state of ND NDSU extension paying 60% of the salary and benefit package. The counties picked up 40%. The programmatic initiative for extension does include funds for us to go back to in more equitable county partnership with the state picking up some additional cost share with those county based positions.

**Blaine Schatz, Director of the Carrington Research Extension Center:** Testified in favor of HB 1020. Distributed Attachment # 5.

**(33:55) Darrell Oswald, Chairman of the Central Grasslands Extension Center Advisory Committee:** Testified in favor of HB 1020 and provided **Attachment # 6**. He also submitted **Attachment # 7**.

**(40:05) Representative Wayne Trottier, District 19, Northwood:** Testified in favor of HB 1020. I was raised on grain and small dairy farm in Pembina county. I've always been involved in agriculture. This bill is not about me. It is entirely about the future of ND agriculture and our farmers. For the last 100 years, agriculture has been the economic drive for the state of ND. Ag was number one except maybe for the last few years when energy, oil, gas, coal, and, wind moved ahead. That is why I stand before you this morning.

When SB 2020 was voted on the floor, I was a no vote. I felt that was a protest vote entirely based on extension ag research and ag research funding. The energy recently has gone through some troubled times. I don't believe they have cut their research and development funding like other successful businesses. When they are struggling, we see corporations increase their research and development. Ag research funding has gone backward with some over \$4 M cut in the last two sessions. Some of this could maybe be justified with the state budget issues. Today, we are now facing reality.

Just one research project goes back some years ago. Farmers would idle 1/3<sup>rd</sup> to 1/2 of their acres pre year. It was called summer fallow. There was research in some stations that did trials and the research became known as no till and minimum till. It has been reported research alone returned over \$1 B per year. It now still returns \$500 M each and every year. This is one small example.

If you build a big beautiful restaurant facility and do not hire the best chef, your business will suffer and collapse. If you then hire the best chef and expect the business to prosper, it may not because your staff are not doing a good job. It takes a full team. I believe that research is important and related. It takes facility, research scientists, and a top support staff. If you try to save and cut any of this out of the team, the resulting research will suffer. We cannot afford to lose any of our top research people. NDSU's ag research has returned millions of dollars to our farmers and the state of ND.

In closing, many years ago, a wise farmer told me that if we farmed today like we did 10 years ago, we won't be farming 10 years from now. I believe those numbers have change and become smaller. It is more like if we farm today like we did 5 years ago, we won't be farming 5 years from now. I truly believe that. It has been an honor to stand before you and a privilege to be here. I thank you. I will stand for any questions.

**Christopher Schauer, Interim Director of the Dickinson REC:** Testified in favor of HB 1020 and provided **Attachment # 8**.

**(51:52) Wayne Hendrickson, Hettinger REC:** Testified in favor of HB 1020 and provided **Attachment # 9**. I have a beef operation. My great-grandfather started our ranch in 1908. Agriculture has changed so much over the years. Basically my operation right now is cow-calf operation where I source verify everything. Every animal is taken to finish. None of that would be possible without the Hettinger Research Center. I have smart people around me. I called upon them for weed control, agronomy, and animal science. At our last meeting, we

started talking about not only wildlife but also bee keeping. Agriculture in ND is continuing to get more expansive, and larger.

As I listened to the other people speak, I thought that a lot of them are hurrying through because they are worried about their 5 minutes. I don't have that much to say. The biggest thing I would ask of you is to go to a hold even budget. My grandfather told me you need to invest and believe in yourself. We are ND, we are Agriculture. That is who we are. I will stand for questions.

**V. Chairman Wanzek:** How is calving going?

**Wayne Hendrickson:** It's going great. We started heifers when it was 30 below at night. We have 4 left, the cow herd is starting and the snow is melting. I think we are going to have spring.

**(55:10) Randy Melhoff, Director Langdon REC:** Testified in favor of HB 1020 and provided **Attachment # 10**. Langdon became a research center in 1909. As you know, last session, we had to go through a little bit of a budget cutting exercise. I want to share what we did in the last two years when you approved out budget back then. Currently, our core research programs are in agronomy and plant pathology. I want to share a few new things, in the agronomy program. Langdon has been the only center able to do hemp research. With our data, we believe we are going to be able to put together an insurance program for those who want to grow hemp. It's very critical to have that insurance program.

In plant pathology, we are the plant pathology research center of ND because our climate is very conducive to disease development every year. One new thing, is that we are trying to control head rot on sunflowers. We are using honey bees to deliver the disease fighting organism. We are in the 3<sup>rd</sup> year of research. Finally, another big program is our foundation seed program at Langdon. Only three years ago we started growing soybeans for seed. It is a tribute to Dr. Ted Helms and his soy bean research program. We finally have some soybeans we can grow up in northeastern ND. We have now taken this on so our farmers can have the good seed. We also have extension research programs. Our number one priority is to have a hold even budget. As a result of the last budget cut, we cut our research down by 10-15%. We do not want to follow that pattern.

In conclusion, we support SBARE and the priorities set by SBARE. I will stand for questions.

**Chairman Holmberg:** Down memory lane, I see the dedication of the building and the dedication. No one from NDSU could get there because it was too foggy. As the dedication wound down and we had the roast beef, potatoes and gravy were being dished up, two politicians got up and spoke for a long time. Everyone was salivating because they did not want to hear them. Otherwise, it was a good meeting. The cold beef was very tasty.

**Senator Mathern:** Describe what you refer to as insurance for hemp growers.

**Randy Melhoff:** One of our missions is testing newly virgin crops. As we find a crop, like canola, it's important that the producers have an insurance program in case they have a disaster. Typically, if they are under that farm program and there is an insurance program

with the risk management agency, the producers are much more protected in case something adverse happens.

**Senator Mathern:** You are talking about general crop insurance.

**Randy Melhoff:** Yes. Also, we are working on simulating hail damage on hemp and what would happen if certain percentages of the crop were to be hailed out.

**V. Chairman Wanzek:** My brother and I had bought a seed cleaning equipment. My brother was talking to the guy who was selling it to him about a farmer that is raising 2,000 acres of hemp. That shocked me to hear of that kind of a size. What kind of potential does hemp have here and where would our markets be?

**Randy Melhoff:** Right now, we have some new crops that are very exciting in ND. Hemp is a big question mark. I think the secret is where the markets are. That really has not been established yet. There is excitement up there about growing hemp but there is also a lot of uneasiness.

**V. Chairman Wanzek:** Thus the need for research, right?

**Randy Melhoff:** Exactly.

**V. Chairman Wanzek:** We will take a 5-minute break.

JOB # 34036 –

**Senator Wanzek:** Called the committee back to order on HB 1020, the NDSU Extension Service.

**North Central REC -**

**Shana M. Forster, Director, North Central Research Extension Center, Minot, ND**

Testimony in support of HB 1020 - Attached # 11.

**Williston REC–**

**Tom Wheeler, Chairman, Joint Advisory Committee of Williston Research Extension Center and Eastern Agricultural Research Center**

Testimony in support of HB 1020 - Attached # 12.

Also submitted were letters of support from the Williston Research Extension Center:

**Connie Iverson,** Focus Group President and MonDak area farmer/rancher - Attached # 13.

**Wayne Berry,** WREC-EARC Joint Advisory Committee – Attached # 14.

**Shawn Wenko,** Executive Director, Williston Economic Development – Attached # 15.

**David Montgomery,** Chairman, Williams County Board of Commissioners – Attached # 16.

**Thomas McCabe,** Chairman, McKenzie County Commission – Attached # 17.

**Tim Selle,** Divide County Commissioners – Attached # 18.

**Lucas Holmes,** NDSU/ANR Extension Agent & Ryan Davidson, VP-NDCISA – Attached # 19.

**Cameron Wahlstrom**, President, McKenzie County Crop Improvement Association - Attached # 20.

**Emily Paul**, Sales & Product Development Director – Attached # 21.

**Charlie Cahill**, Cahill Seed Facility, Scobey, Montana – Attached # 22.

**Jerry Bergman**, Director, NDSU Williston Research Extension Center (WREC) – Attached # 23.

**William R. Fortier**, President, North Dakota Rural Rehabilitation Corp. – Attached # 24.

**(8:55) Senator Wanzek:** As I understand it, you want the spending authority at \$2.25 M but need \$750,000 from the state.

**Tom Wheeler:** That is correct. We are asking for the authorization to raise up to \$2.25 M. We are also asking for the \$750,000 from the general fund.

**Agronomy Seed Farm -**

**Brian Otteson, Director, Agronomy Seed Farm, Casselton, ND**

Testimony in support of HB 1020 - Attached # 25.

**Donnell Preskey, NDACo**

Testimony in support of HB 1020 - Attached # 26.

Letters in support of HB 1020 also submitted:

**Stanley Dick, Cavalier County Commissioner** – Attached # 27.

**Charlie Adams, Bottineau County Commissioner** – Attached # 28.

**Lynn Brackel, Bowman County Commissioner**

Testimony in support of HB 1020 - Attached # 29.

North Dakota Ag Facts – Attached # 30.

**(23:43) Naeem Kalwar, Extension Soil Health Specialist, Langdon Research Extension Center**

I have been in that job since 2012, and as an extension soil health specialist, I frequently help producers with areas that either do not produce anything or very little. 99% of the time, when we go and check these areas and we look at the root cause, it is either high levels of salt which deprive plants of water, or it is excess levels of soil sodicity, which makes the soil areas tight.

About 15% of our total crop land in our state, which is about 39 M acres, 15% of that land is effected by high salt levels. That would be about 6 M acres.

On average, producers spend \$82 - \$187 per acre just at the time of planting to plant soybeans, canola, corn and spring wheat. That is a net loss. That is also a result of a loss of millions of dollars in revenue to the state every year.

We have been helping producers with site specific soil sampling and testing and close coordination with the county extension agents. By doing that, we are able to assess the levels of salt and sodicity. That is the first step to bringing these acres back into the regular crops. That also provides us with the opportunity to provide practical solutions to these producers

that are based on science. We spend quality time with them, look at their land escape, discuss their issues, and we suggest practices which will work on their farms.

After helping them with the sampling, we also provide them with the information to pass it onto the lab for soil testing. Once we get the result back, we coordinate a meeting with them, along with the county extension agents and producers, hired hands, and crop consultants in order to explain the result to them and provide them with our suggestions to improve these unproductive areas.

Our objective is to provide information to the producers to make educated decisions. This whole exercise has resulted in long term relationships which are based on trust. I would also like to highlight that I am an extension specialist who works out of a research extension center. I do not work out of the main campus. I find myself in a unique position to pull campus, county extension, and my own REC resources together to better serve the people of ND. I utilize my REC land, equipment, and my fellow co-workers help me perform my job. Without this hope, I would not be able to do my job the way I do right now.

The money the legislature gives to the extension of research gives me my operating budget. That helps me travel and help these producers. My budget has already been reduced to 80% of what I was getting in 2012. If my budget is cut, my operating budget would also be cut. I heard an example of hiring the best chef in order to have the best restaurant. If the chef does not get the ingredients, he cannot make the dishes you want to eat.

Thank you for your time.

**Senator Wanzek:** I have a lot of interest in that area. I see a lot of those spots. Unfortunately, they are growing.

**Naaem Kalwar:** Unfortunately, the wet cycle resulted all of the salt and the sodium in the top soil but the dry weather is not going to help us. In 17-18 these problem spots were more visible. The best thing is to go to the people, soil test and help them be on the right track.

**(28:44) Wesley Frederick Farmer/Rancher, Flasher, ND**  
Represents Area IV on State Soil Conservation Committee.  
Testimony in support of HB 1020 - Attached # 31.

**(32:15) Chairman Holmberg:** There was a time that soil conversation districts weren't invited to the table when it came time for discussions on this budget. Tip your hat to Senator Bowman for you having a louder voice for soil conservation. A number of years ago, when we served together, he was chair of this budget. We went round and round with the House. Now, you have that program and I think it is so important. Senator Bowman led the charge so you can thank him.

**Wesley Frederick:** Senator Bowman is our general. All the work he has done over the years has not gone unnoticed and we glad he can be here today.

**Mara Bornemann, local 4-Her from Morton County**  
Testimony in support of HB 1020 - Attached # 32.

**Vawnita Best, RLND Alumni (Rural Leadership North Dakota), Watford City, ND**  
Testimony in support of HB 1020 - Attached # 33.

**(42:44) Dave Miller, Citizen Advisory Council (CAC) member and farmer, Donnybrook, ND.** Testimony in support of HB 1020 - Attached # 34.

**Dick Roland, SBARE board member, Crosby, ND**

Testimony in support of HB 1020 - Attached # 35.

Dirt to Soil book – Attached # 36.

Public Comment -

**(57:00) Dan Kail, Farmer, Williams County**

No written testimony but speaking in support of HB 1020.

I want to touch on three areas of the Williston research center. The first is budget cuts. There is a young and energized dynamic team of work. They have a great following in our community. The average age group of a farmer in our area is 62. We like to get our information face-to-face by going to meetings.

Our greatest export is our smart kids. When I met Senator Bowman, I thought to myself “when I grow up, I want to be just like him.” I want to be a man of that integrity. Bill was a mentor of mine. He and Representative Weiland taught me that you cannot balance the budget on the backs of your employees. If you do, you will not have those employees and those smart kids will go right back to Minneapolis and we’ll lose them again.

The next area is a greenhouse. We need to raise money for a greenhouse up there. We cannot develop new varieties and we cannot grow seed with just one crop a year. We have a lot of enthusiasm to get green house built and we need the authority to do it. We had an arrangement with the Williston high school that worked for a while. They had a greenhouse built at their new high school that they were not using. The research center was able to use it, but it’s a long way from the research center to the high school and they were unable to give those people a key to the building.

If I can steal words from Keith Peltier - “Think Seed, Think Greenhouse”.

Our seed cleaner was built in 1954 and it produces 35 bushels/hour. We’re seeding at 90 bushels/hour. Think of how that seed cleaner must run year round to keep up with the demand for the new varieties. It is held together with duct tape but we have a 65-year-old seed cleaner. I hauled seed away from that cleaner with a 1957 Chevy pickup when that pickup was only 7 years old.

Going back to our reliance on NDSU for seed varieties. It is a trust issue. We know that NDSU has our concerns in mind. They are working for everyone in ND. That is a really big trust issue with us. Thank you. “Think seed, think seed cleaner!”

**(1:01:14) Jim Bahm, Executive Committee member, North Dakota Ag Coalition**

Testimony in support of HB 1020 - Attached # 37.

**(1:05:05) Barton Schott, chairman, State Soil Conservation Committee**

Testimony in support of HB 1020 - Attached # 38.

ND Soil Conservation Districts – Attached # 39.



**(1:08:00) Sara Lovas, SBARE board, Hillsboro, ND**

No written testimony but speaking in support of HB 1020.

I want to introduce myself as an agriculturalist who uses the data from the ag expanding station and information from the NDSU extension service. Part of the independent crop consulting business is to provide precision agriculture services to clients and also on my own farm so we use satellite imaging data to create zones for soil sampling. I also write variable weight prescriptions for seed and fertilizer. This is becoming a huge part of the farming business. I charge farmers and they pay me to provide those services for them.

Agriculture is a changing face. We need the research to keep us relevant. I also help farmers make decisions regarding weed management for things like weed resistance, and soil fertility. I get asked a lot of random questions about specialty crops. In my area, I have been asked about specialty crops like fava beans and field peas which in Hillsboro, ND, it is not a mainstream crop. I rely on the expending station to deliver that information.

I have heard it said that farmers can get their agronomy information from the private industry. I am a private industry. I get my information from the ND ag expending station and extension. I am the face of a ND agriculturist. I do not stand before you today for my purposes and what I am doing. I have a 14-month old son, and his first word was tractor. Should he choose to farm, he will need to have access to this information to keep his farm operation relevant. Please support ag research and extension.

**(1:11:22) Blake Inman, President, US Durum Growers Association, Berthold, ND**

Testimony in support of HB 1020 - Attached # 40.

**Dan Wogsland, Executive Director, North Dakota Grain Growers Association**

Testimony in support of HB 1020 - Attached # 41.

**(1:14:44) Julie Ellingson, North Dakota Stockman's Association**

No written testimony but speaking in support of HB 1020.

This bill is full of projects that will help us stabilize the agriculture economy, leverage private investment, and convert the natural resources into ways to address the growing food and fiber demands of the growing world. The budget reductions that extension and research had to realize over the last few years have resulted in our challenges. Thanked the committee for their support and asked them to do all they can to fortify the agriculture industry.

**Scott Rising, North Dakota Soybean Growers Association**

Testimony in support of HB 1020 - Attached # 42.

Introduced Casey Bitz.

**Casey Bitz, North Dakota Soybean Growers**

No written testimony but speaking in support of HB 1020.

I come from a family of 4-H. My mom has been a leader for 31 years. Currently, my niece was just elected to the state 4-H council as well. I did not come from an ag university. I went to U of Mary and then I came back to the family farm. With that, I relied heavily on ag research and education and the programs for my education and my background in agriculture. I go east for irrigation, north for research, and west for livestock management courses.

Agriculture research is vital to me as a young beginning farmer. We need to continued support and we need to look at the individuals with the green and yellow name tags because I do not want to leave them to a blue and yellow name tag. I will stand for questions.

**Pete Hanebutt, Director of Public Policy, North Dakota Farm Bureau**

No written testimony but speaking in support of HB 1020.

If you look in our policy book, we have 7 policies that are in favor of this. Extension funding is vitally important to agriculture and we need it to be maintained. Keep up the good work.

**Jennifer Hegland, North Dakota NRCS**

No written testimony, but speaking in support of HB 1020.

We want to show our support to everyone and everything that supports the operations of these organizations. USDA is a partner to the state in providing voluntary conservation assistance to our farmers and ranchers. With this, throughout conservation districts, NRCS delivers annually to ND, \$135 M for financial assistance and technical assistance to our farmers and ranchers. That is all to help them manage their soil and water for food and fiber. We enjoy an 85-year-old partnership of delivering conversation assistance to the local farmers and ranchers. No other organization has this deep foundation for their partnership.

I want to talk about the partnership and the innovation the soil conservation districts do on a daily basis. They do things like soil health and deliver that to the field and the producers on a field basis. We work in a partnership of delivering big projects like flood reductions.

North Dakota conservation ethic is largely because of the soil conservation district as delivered through the soil conservation committees. The beauty on the countryside and pride people have is largely because of soil conservation district and the funding they receive. I encourage you to continue to fund this program.

**Sara Tunge, North Dakota Conservation District employees**

No written testimony. but speaking in support of HB 1020.

We provide services to local constituents, producers, and pre-school thru high school We provide technical assistance for planning, soil conservation, cover crops, etc. We work closely with our extension offices. This district assistance funding allows us to keep those doors open to provide those services at grass root level. We encourage you to keep that funding if not increase it.

**Kayla Pulvermacher, ND Farmers Union**

No written testimony, but speaking in support of HB 1020.

I want to talk about a project we have been working with NDSU on for the last year. We are helping farmers thru this tough time and we are creating programs that will help them with their mental health. We are also working on peer to peer program that will help farmers identified any issues they have. Thank you.

**Senator Bill Bowman, Former ND State Senator, District 39**

I prepared a speech for today, but didn't know there was a hearing. I have been a part of this for 28 years. What an honor. You have listened to all the people who work with the research, extension, and the 4-H people. You put that pie together, and when everyone is on track it

makes a good pie. If you have any money, stick into research and extension and it is going to generate more dollars.

When I started ranching in 70s. We had cows weighing 900 pounds. We sold some calves, some tail enders two days ago and they were already at 778 pounds. That is was research does. Higher production generates more wealth and more wealth makes the state great. I hope you find every dollar you can to put into the budgets. I know what it's like to have to say no. That is the hardest thing to do. I know you will do your job because I know most of you personally. I know how much you care about agriculture. Thank you for this opportunity.

**Senator Wanzek:** Thank you for coming. Our creator works in great ways and I think he planned for you to be here today.

**Senator Robinson:** Thanked everyone for great presentation.

**Senator Wanzek:** Adjourned the hearing for the Extension Service.

Written testimony in support of HB 1020 also submitted:

**Mark Birdsall, Vice Chair, SBARE, State Board Agriculture Research and Education**

Testimony in support of HB 1020 - Attached # 43.

# 2019 SENATE STANDING COMMITTEE MINUTES

## Appropriations Committee Harvest Room, State Capitol

HB 1020 – NDSU/Northern Crops Institute  
3/20/2019  
Job # 34041

- Subcommittee  
 Conference Committee

Committee Clerk: Rose Laning

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Testimony # 1 – 4.

Legislative Council: Danielle Foster  
OMB: Larry Martin

**Senator Wanzek** called the committee back to order on HB 1020 – Northern Crops Institute.

### **Mark Jirik, Director, Northern Crops Institute**

Northern Crops Institute testimony – Attached # 1.  
Pasta Production and Technology Course – Attached # 2.  
NCI-INTSOY Course – Attached # 3.  
Northern Crops Institute 2019-2021 Biennial Budget – Attached # 4.

(8:34) **Senator Mathern:** This has certainly been a positive thing for ND and do you know what benefits the other partner states get for their investment? What is the ratio of the payments they make or the appropriation they make compared to what we're delivering?

**Mark Jirik:** Every state functions in a little different way. In the State of Minnesota, it comes through their Dept. of Agriculture – lately it's been around \$50,000/year. In the State of South Dakota, it's a percentage of gas tax. The last several years, it's between \$70,000-\$80,000/year. From a commodity group standpoint, the commodity groups from those states are generally fairly generous – as are the North Dakota commodity groups. In Montana, it's commodity group funding alone.

**Senator Mathern:** But what is the relationship between what they are putting in and what they are receiving?

**Mark Jirik:** They see some of the same benefits. When we are talking about spring wheat, Minnesota, Montana, South Dakota are also producers of spring wheat so the work we do

does benefit them. Part of the issue is that they have not historically seen that benefit, when we're not in their backyard, when we're not going through their fields. They should ultimately get some of those same benefits, as far as that market promotion and crop promotion.

**Senator Mathern:** I'm wondering how it translates into dollars, like do they get \$100 bucks worth and pay \$50 or do they get \$100 buck worth and pay \$100?

**Mark Jirik:** That is a good question and I don't really have an answer for you today. My argument would be that they haven't necessarily seen the value. When we have not traditionally done courses in Montana, South Dakota, Minnesota...so my past career was in grain trading and I was in charge of exporting wheat and soybean meal and I would argue market promotion overall is a good thing. At the same time, there is a high level economic activity. When we bring in those 250 participants from overseas to Fargo, they're staying in Fargo hotels. They're eating their meals in Fargo, so for the ag community as a whole, for North Dakota, as well as the other three states, it's money very well spent. As far as what they are getting back, I don't have an exact answer so I apologize.

**Senator Wanzek:** That could be something you could provide for the subcommittee. Welcome to North Dakota and your new job.

(12:16)

**Keith Peltier, General Manager, ProSeed; Past-chairman of Northern Crops Council**

No written testimony but testifying in support of HB 1020.

The Northern Crops Council governs the Northern Crops Institute. They do a fantastic job and is one of the better examples of Public Private Partnership working together to promote our crops in North Dakota. In addition, it's working with the other states too, so I think we get our bang for our buck. My personal opinion is to leave the budget unchanged and even. Thank you for your consideration and I'd be willing to answer any questions.

(13:06)

**Neil Fischer, Administrator, North Dakota Wheat Commission; member of Advisory Council, Northern Crops Institute**

No written testimony but testifying in support of HB 1020.

I want to thank you for all the great testimony you took this morning and took the time to listen to a lot of my colleagues and our constituents in agriculture on the work this morning. That matters because a lot of the work that is accomplished in that is what we display at the Northern Crops Institute. Much of that extends to the four state region. All those wheat states belong to the US Wheat Associates which is a national membership that has the footprint and boots on the ground in the national and international arena for us. They're the people that pick the candidates that come to the NCI. This was a very controversial idea when it came up back in 1981 and finally came through the 1983 session. It was a very good idea and it has been copied and developed in other places since then. The flagship course that they designed in the very first years is still the number one course, the grain procurement, back in the days before we had this great diverse agriculture that we're talking about today. We have an expanding agriculture; we have more industries to think about. When we were wheat and barley and durum, it was a simpler job. So they are asking that they be kept whole. NCI, at that time, was a natural step forward. It's become an integral part of the whole promotion effort. Like we say at the ND Wheat Commission, we wouldn't be worth much

without our partners at US Wheat Associates; NDSU, NCI, the Legislature, our grain grower organizations, and durum growers, and so on. We value that very much. We also have some skin in the game. The commodity groups do put in a very good leveraged amount of funding and appreciate all the general fund efforts. This tariff thing right now – in soybeans we have one market. Through the work of the Northern Crops Institute and the funding for the cereal science department and the quality analysis there, that's what has allowed us to have 60 markets in wheat. We can differentiate ourselves away from the Russian wheat and even my cousin's wheat in Kansas, which sells for \$1 or so less than ours does. That differentiation is amplified as we move our customers through the NCI where they learn at the new trading room. Bill Wilson works very hard to make them more savvy with the grain buying system so they'll stay US wheat customers – and ND wheat customers. It takes professional technical trade servicing to make that work. You can tell them that this is the good part of our crop this year but there are these two factors that we can help you tweak your mills to make it work better for you. That's the kind of work we do in cereal science and its amplified through the Northern Crops Institute. I appreciate every effort you have invested in us thus far and hope you continue that great effort.

(17:32)

**Phil Murphy, North Dakota Soybean Growers**

No written testimony but testifying in support of HB 1020.

Like many of you, I have toured the Northern Crops Institute more than once. And I would take about 15 seconds of your time to simply amplify a few things here. What they do in my mind, is they help create relationships and that drives innovation and that drives markets and I will stand for any questions.

**Senator Wanzek:** Adjourned the hearing on Northern Crops Institute section of HB 1020.

# 2019 SENATE STANDING COMMITTEE MINUTES

**Appropriations Committee**  
Harvest Room, State Capitol

HB 1020  
4/2/2019  
JOB # 34452

Subcommittee  
 Conference Committee

Committee Clerk: Alice Delzer / Florence Mayer

## Explanation or reason for introduction of bill/resolution:

A Subcommittee hearing for the Research Center

## Minutes:

1.Base Level Funding Changes (UGPTI) 2.Base Level Funding Changes Branch Research Center 3.Base Level Funding Changes NDSU Ext. Service 4.Base Level Funding Changes Northern Crops Institute 5.Base Level Funding Changes NDSU Main Research 6.Base Level Funding Changes Agronomy Seed Farm
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**Senator Erbele:** Called the Subcommittee hearing to order on HB 1020. Let the record show that all three members were present: Senator Erbele, Chair, Senator Wanzek and Senator Robinson. Danielle Foster, Legislative Council, Alex Cronquist, Legislative Council and Larry Martin, OMB were also present.

It has been a while since we have heard the budget. There have been a couple of other bills that have come our way since then. I think all of us here are going to need a refresher today. We do have a whole hour and thanks for letting us start early. Danielle did give us long sheets; there are some extras if anyone in the crowd would like to see those. What we plan on doing is walking through that to see what the House version is compared to the executive budget recommendations. We will go through the different divisions, the Upper Great Plains Transportation Institute, Northern Crops, the main stations, all the research stations, the county extension service, restoration soil conservation and capital projects and so forth. There is a lot to go over. We will take one sheet at a time and walk through it. Then if there is anyone in the audience that would want to give us additional information, info on what the House changes were, or additional requests then come forward. We will work sheet by sheet and item by item. If you come forward please state your name for the record, so our clerk has that. Is there anyone here from upper Great Plains Transportation? Danielle, if you would update us on the sheets, we can follow along. Tell us how you are looking at it and what we should see.

**(0.2:55) Danielle Foster, Legislative Council: Submitted Attachment #1, Base Level Funding Changes Upper Great Plains Transportation Institute (UGPTI) Budget #627 and explained the changes that were made. (Read from Attachment #1.)**

**(3:58) Senator Erbele:** On that road and bridge study for the \$450,000, was there more requested than that or was that the amount?

**Larry Martin, OMB:** The original request was \$975,000. The House reduced it, and then they brought it back up to the \$450,000. My understand is it is what is needed with the prairie dog bill.

**(0.5:03) Danielle Foster:** Continued to explain the funding changes listed on Attachment #1, beginning with the three sections the House adopted.

**Senator Erbele:** It shows on the executive side, section 7 and across on the House version section 8, the wording is the same. Is that something to be aware of?

**Danielle Foster:** The section added is re-numbered.

**(0.6:02) Alex Cronquist, Legislative Council:** Section 4 simply identifies the amount of funding from the Strategic Investment Improvement Fund (SIIF) that is included in this. That was added.

**Senator Wanzek:** Were there any other optional requests that we are not talking about yet or that do not show up?

**Tim Horner, Program Director for the Upper Great Plains Transportation Institute (UPGTI):** I am here and available to answer questions.

**Senator Wanzek:** Is there something else that was presented to us that Upper Great Plains Transportation is requesting that was not offered or provided for? Are we forgetting something?

**Tim Horner:** The two things that Dr. Denver Tolliver asked for was the financing for the road bridge and asset management program. I would have to look up the exact titling. Then reinstatement of the base budget. The primary issue was the money for the study on the program. That ties in with HB 1066, operation Prairie Dog.

**(0.8:20) Senator Robinson:** What you are saying is if we address those two issues, you are happy with the budget? (That was confirmed.)

**Senator Erbele:** Any other comments on Upper Great Plains? If now, we will move to next sheet titled "The Branch Research Centers". Those first lines will all be changed with the current update to the budget. Those first 4-5 lines we can skip those and move on to any changes.

**(0.9:09) Danielle Foster:** The House adopted the executive budget recommendation for the last two changes. The funding for Oaks irrigation site was \$200,000 of other funds. Then a reduction in funding for capital bond payments of \$23,091. (Asked Alex to talk about the sections.)



**(0.9:36) Alex Cronquist: Submitted Attachment #2, Base Level Funding Changes for Branch Research Centers** and explained the changes and different sections.

**(0.11:26) Senator Robinson:** Section 10, I think we do have amendments offered for the seed operation in Williston. I believe the request is for \$750,000 with authorization to raise additional dollars above and beyond that. That would be consistent with what we have done in Minot and Carrington.

**Alex Cronquist:** In the main research center long sheet, you will see that there is \$750,000; however, \$500,000 of it they have to raise. There is \$250,000 from general funds. There is at least some funding for that in the main research center budget.

**Senator Erbele:** Is that a separate sheet in this packet, which we will be getting to? (That was confirmed.) Anything on these two sheets committee?

**Senator Wanzek:** I am still confused with the seed plant in Williston. Again, you said it specifies in the main research budget?

**Alex Cronquist:** That was something the agency requested, that the capital projects be funded through the main research center rather than through the branch. It is the second to last sheet in your packet.

**Senator Erbele:** Did the discussion of this sheet trigger anything from anyone in the audience that wants to offer anything towards it?

**(0.13:34) Greg Lardy, Associate Vice President for Agriculture Affairs, NDSU:** Just want to draw your attention to the further erosion of our base operating budget at the branch stations. The \$1.2 million dollar cut is a significant cut. It would require all of our branch stations to make some difficult decisions regarding which research programs they would continue to be able to go forward with.

**Senator Erbele:** The \$1.2 million, it is not an equal cut to all stations I am assuming? There is a level of need within the stations that some are experiencing a larger amount of than others?

**Greg Lardy:** That is correct. The House adopted the executive budget recommendations, which were not a uniform cut across the branch stations. I don't know if there was a reason for the governor's executive recommendations in terms of differential cuts between the branch stations. They vary from approximately 5-8%.

**Senator Erbele:** That was part of my next questions was, if that was part of the governor's ask for a reduction of the budget? Give us a picture of what the operating losses would entail. What would it look like with the different impacts? If I were the manager of a branch station, what would I have to deal with?

**(0.15:12) Greg Lardy:** Each branch station would address this cut differently. All of them would involve some degree of staffing changes or personal cuts. There would be an elimination of research programs, technician positions, and scientist positions. There is

simply not enough room in the operating budget to address this level of cut with simply a reduction in operating and equipment expenses.

**Senator Erbele:** Do you have a number on what that would look like at a specific station? If I called Mr. Sedivec, up here and ask him to tell us, what it would mean to him and what he would have to do to adjust the amount of dollars?

**Greg Lardy:** He could certainly address it from the perspective of managing the central grassland station and would give you an idea of that.

**Senator Erbele:** I think it would give us a picture of what we are looking at, if he would be willing to do that?

**Senator Wanzek:** I know on our spreadsheets it said it was reducing funding for travel and miscellaneous. It is more than just that I would assume?

**Greg Lardy:** That is correct. Each station would address this differently. Given the magnitudes of the cuts that need to be implemented to address the budget difficulties from the 17<sup>th</sup> session. This cut coming on the heels of that, it would require each branch station elimination of research programs and scientists positions or technician positions, to address the magnitude of the cut. Dr. Sedivec can you more specific examples at his station.

**(0.17:06) Dr. Kevin Sedivec, Interim Director of Central Grasslands Research Station:** I am the only REC director here, and so it is a pleasure to be here. For us the 2017-2019 budget cuts equivalent to about \$320,000 from the 2015-17 budget and the 7%, we were at 6.58%, which would be another \$130,000 cut. That becomes about \$440,000 over the last biennium and this biennium. Which would make up about 20% of our budget from the 2015-17 budget. For us, we always look at operating first. We struggled the hardest because we have cattle. Those of you with cattle know it takes a lot of money to raise cattle. When you reduce operating, it only goes so far, without impacting with the livestock size. We look at positions; we cut one scientist position and a tech position.

**(0.18:05) Senator Erbele:** What did that scientist do?

**Dr. Sedivec:** It was a forage scientist position. We cut that one then we cut the tech position. I hired back a specialist position because I felt the forage program was critical for our producers in the Coteau regions as well as the state. I did not want to abandon it totally, but it allowed me to save about \$100,000 per year in terms of output.

**Senator Robinson:** What is the count of your FTEs right now with the reductions and the add back? Where are you at with full time employees?

**Dr. Sedivec:** Our FTE's is at 8 and we have 2 part-time.

**Senator Erbele:** But you have also gone to a more usage of grad students to fill in some of the work you need to do there versus hiring positions?

**Dr. Sedivec:** My philosophy was that we have scientists at the main station that are already paid for. I brought in their expertise and I funded grad students to do the research because I do not have to pay fringe benefits. That is 3% versus 45%. It allows me to look at the greatest bang for my buck in terms of research output while engaging the scientists in the main station and also my staff at the station.

**(0.19:24) Senator Erbele:** Did you do that in response to the 2015-17 cuts or have you gone down that road prior?

**Dr. Sedivec:** I did that, #1- because I thought it was a great use of money and #2, because of the cuts it allowed me to save dollars at the same time. It allowed me to generate about 4 times more research dollars for that savings. Not everybody can do that, because I'm not at the main station anyway and so it was a great tie.

**Senator Erbele:** Any other questions? That line Senator Wanzek pointed out where it says funding for travel and miscellaneous, it is really not the whole story.

**(0.20.06) Greg Lardy:** I would like to make one more comment relative to the governor's executive budget and the House version. They did include \$200,000 in other funds for operation of the Oakes research site. That site is operated through the Carrington Research Extension Center in a collaborative effort with the Garrison Diversion. The \$200,000 in other funds would require Carrington to obviously raise those in order to continue that research operation. That process would be somewhat difficult according to the station director at Carrington. There is concern about being able to actually raise those funds and carry out the research program that's been established there with the fund raiser.

**Senator Erbele:** So, you are saying if some general fund dollars could be appropriated toward that versus the fundraising, and even a match, would that be an acceptable thing for us to consider?

**Greg Lardy:** That would be very helpful.

**Senator Wanzek:** You said they are doing that in collaboration with the Garrison Diversion. Do they provide funding for that too?

**Greg Lardy:** I do not know specifics regarding Garrison Diversion funding for that research program. I can get that for you.

**Senator Erbele:** Would Council know anything about that at all? (He was told no.)

**Senator Wanzek:** If there was expected funding there, we would still have to give them authority. If they are working in collaboration, do we even see that in our budget?

**Alex Cronquist:** This would be the Garrison conservancy district? (Yes.) If the money does not flow through the branch research center, we would not even see it.

**Larry Martin, OMB:** I would have to look at my notes. I believe there is current funding from the Garrison Diversion, but that funding is going away. That is why it is in the budget request.

**Senator Erbele:** If no one wants to comment, we will slip over to the next sheet then. That is Base Level Funding Changes NDSU Extension Service.

**Alex Cronquist: Submitted Attachment #3, Base Level Funding Changes for NDSU Extension Services budget # 630** and explained the differences between the House version and the executive budget. He also explained the other sections, 3, 7,8 and 9.

**(0.24:49) Senator Erbele:** The \$100,000 increased funding for miscellaneous, does that join up with the \$1.063M or is that different usage of those funds?

**Alex Cronquist:** That was a recommendation from the governor's office. The House did not reduce that funding. If you are comparing to the governor's budget, there is an increase of \$1.063M there and an addition increase of \$100,000. From the base level, there is just the increase of \$100,000.

**Senator Wanzek:** Can you fill us in a little bit on why the one time funding for the website and digital upgrades was not extended? What was the reasoning?

**Alex Cronquist:** I am not sure on the exact reason. I believe the House members of the Appropriations committee had indicated because they had already elected not to reduce funding but instead increase it by \$100,000 for the miscellaneous expenses; they thought they had done enough at that point.

**Senator Wanzek:** Was there an identified project for that one-time funding?

**(0.26.20) Greg Lardy:** The discussion in the House relative to the \$100,000 was in response to some changes we had made in Extension relative to a program fee for 4-H. We adopted to no longer continue that program. The proceeds from that equated to about \$100,000 so the committee added that back to our budget in response to changes we made in the 4-H program to no longer continue that fee.

**Senator Wanzek:** I was asking about the one time funding, the \$345,000. Was that identified for a certain project or just an upgrade?

**Greg Lardy:** The \$345,000 came from, if you remember, the Extension Service was reviewed at the request of the previous legislative assembly. One of the recommendations from that was to upgrade the extension's digital presence. Making more information available through phone apps, iPads, and the website compatible with that. The governor included that in his budget, the House opted not to, but I don't know their reasoning why they didn't include that.

**Senator Erbele:** But you did not have funding for that prior? This is new funding. (Correct.)

**Larry Martin, OMB:** This is one of the SBARE initiatives also.

**Senator Erbele:** Any other things you care to look on? If not, we will move on. The next sheet is budget 638 the Northern Crops Institute.

**(0.29:03) Alex Cronquist: Submitted Attachment # 4, Northern Crops Institute, Budget # 638.** He explained the changes that were made within the budget and gave a brief description of each section.

**(0.29.47) Senator Erbele:** The source of the other funds, did they identify anything there?

**Alex Cronquist:** Just wherever the Northern Crops Institute can raise their funding from. He continued with explanations of the different sections.

**Senator Erbele:** Any requests we should be made aware of that were requested and not funded by the executive or the House? Is there anyone from Northern Crops who would like to address anything?

**Mark Jirik, Director, Northern Crops Institute:** Our request was to leave our general fund budget unchanged.

**Senator Erbele:** We will move on. The next sheet is budget #640 NDSU Main Research Center.

**Alex Cronquist: Submitted Attachment # 5, NDSU Main Research Center, Budget #640.** He explained the Attachment and covered changes that were made. This is where that Williston Seed Cleaning Plant funding is where the governor's recommendation didn't provide for that, however, the House put in \$250,000 general fund, with \$500,000 other funds. That \$500,000 would be in addition to the 1.5M that was already appropriated. So the total would be \$2M other funds, \$250,000 general funds.

**(0.32:39) Senator Robinson:** The expectation there would raise those dollars? (Correct.) If we go back to the SIIF fund and the \$1.4M, was that the actual request or was the request greater? I'm trying to recall the testimony, but it's been a few weeks. Was the \$1.4 million the amount requested for that line item?

**Alex Cronquist:** They did bring in a list of potential extraordinary repairs projects to the House. This did not cover the entirety of that list. I am unsure of the exact amount.

**Larry Martin, OMB:** The \$1.4M was the request.

**Greg Lardy:** Just to make a comment on the \$1.4M, there is a list. approximately \$8M in extraordinary repairs that we have across our main station and branch stations system for those projects.

**Senator Erbele:** Of that \$8M only \$1.4 is being funded? (Correct.)

**Senator Wanzek:** Can we see that list?

**Greg Lardy:** We will make that available to you.

**Senator Erbele:** Is that the capital list with the stations and storage sheds?

**Greg Lardy:** No, it is a deferred maintenance list. It is different from the capital improvement project list.

**Senator Wanzek:** Alex, could that \$5.99M reduction in capital funding from special funds, can you expound on that? You are saying that puts them more in line with what their resources were? What was that being used for?

**Larry Martin, OMB:** That money was because they completed the Vet lab last time, so part of that is remaining. This is the appropriation they did not need for that. They had it last time for the Vet lab; they have completed that project so now we are taking it out of this biennium.

**Senator Wanzek:** It was used to pay for the vet lab or for the bond payments?

**Larry Martin, OMB:** To build it, I believe.

**Senator Robinson:** Just for the record, we do have the amendments, getting back to the Williston Seed Cleaning Plant, there is \$250,000 in the budget. The folks in Williston are asking we add another \$500,000 and authorization for them to go above and beyond to cover the difference. That would satisfy that need in Williston is that correct?

**Alex Cronquist:** Correct. Their request is for \$750,000 general fund to match the \$1.5M they are raising. Right now, there is \$250,000 as it came from the House.

**Senator Erbele:** Do you want to share your ability to raise those additional funds if you get the \$750,000?

**(0.36:40) Thomas Wheeler, Chairman, Advisory Board of the Williston Research Extension Center:** It is mostly correct I believe. We were authorized to raise \$1.5M towards a new seed cleaning facility last session. We found out that was not enough, we needed more. We based that on the fact Carrington needed more money to finish theirs. That is why we came back this session. We asked for authorization to raise up to \$2.25M total. We also asked for authorization of \$500,000 to raise towards building a new greenhouse. That is not asking for any general fund dollars at all. That's just be asking for authorization to raise the money ourself. At this point we're asking, the House did drop the \$750,000 out of general fund down to \$250,000. We are asking that to go back to \$750,000 and then also the authorization to raise the money for the greenhouse. We have equipment from rural rehabilitation of \$300,000, if we get \$750,000 from the state. That is the same as Carrington and Minot got.

**Senator Erbele:** For the record, if my memory serves me right, your current facility you are only cranking out about 35 bushels an hour?

**Thomas Wheeler:** That is correct. We would like to get that up to over 200 maybe 300. It depends on the machine you buy and the dollars we have to work with. We are adding a colored sorter. That is something that is essential to keeping the seed pure for the standards we need nowa days. That works really well for the specialty crops, but we use it for all crops. That alone is over \$200,000 for that machine.

**Senator Erbele:** Going back to the green house, one of the issues that was raised is that, yes, you can raise the money to build it, what about the ongoing maintenance and care of it? Is that coming back to the general fund for that or do you have other means of doing those operational costs?

**Thomas Wheeler:** We have other means for doing that. When our current director was director at the Eastern Agriculture Research Center in Sydney, Montana, for 12 years they did not ask for any money. They got all the monies to operate the greenhouse from grants and things of that sort. We do have the heating capacity to heat that greenhouse to 50 degrees. We would need more to get above that in the wintertime. We are also working with the oil industry. We have oil wells within a quarter of a mile from the research station. We are looking to get natural gas in there to supplement the heat. They are looking at it as a PR thing. There are a lot of roadblocks to get around, but we think we can do it. It has been done other places. We have no intentions of getting any general fund dollars used for the greenhouse operations.

**Senator Erbele:** So there are synergies up there that that would come together to make that happen.

**(0.41.03) Senator Wanzek:** You are saying you want authority for \$500,000 for the green house? (Yes.) That would all be special funds, which you are raising. As far as the seed cleaning facility, you are saying \$750,000 of general fund dollars, which is the same as Carrington and Minot received?

**Thomas Wheeler:** That is correct. We are asking for the same they got and we will raise the funds ourselves. We are well on the way to that.

**Senator Wanzek:** So far, the House only offered \$250,000?

**Senator Erbele:** So the ask is for another \$500,000.

**Thomas Wheeler:** Yes, to get where we want to be.

**Senator Erbele:** Last one in the packet here, the Agronomy Seed Farm Budget #649.

**(0.42:33) Greg Lardy:** Before you, move on I would like to make some comments on the funding cuts that were proposed for the main station. In the executive recommendation and the version the House adopted, it recommended a cut of \$2.955M. That is similar to the branch stations' significant cut coming off the last session's cuts. We would be similar to the branch station cutting a number of different positions and research programs if that cut were implemented. Our operating budgets are such that it would require us to reduce scientist positions and eliminate technician positions in an effort to address that cut. We have already begun that process by participating in the voluntary separation agreement process that NDSU implemented. We have a number of positions that we have accepted that agreement on already. We would continue to evaluate. We have asked each of our unit leaders to submit a list of positions that could potentially be eliminated if this cut were to come to fruition. It would significantly hamper our ability to deliver research that our constituents need across

the state and address the pressing issues relative to Agriculture production, both crops and livestock across our state of North Dakota.

**Senator Erbele:** What did your reduction look like from the last biennium? You are being asking to take another \$2.9M cut. But looking back to the 2015-17?

**(0.44.33 )Greg Lardy:** Through the allotment process and the additional cuts, we gave back about 6.55%. Another 7% through the budget cuts that were implemented during the session. All told, about 13.7% reduction in the main station budget through that 2017 process.

**Senator Erbele:** Do you know a dollar amount that translates to dollars?

**Greg Lardy:** The two together came to approximately \$8M.

**Senator Erbele:** So you'd almost be \$11M behind? (Correct.)

**Senator Wanzek:** Can someone explain the other funds? What are they expecting you to go out and find other funds to replace that cut?

**Greg Lardy:** Yes, that is the expectation is to raise that through grants and so on. The challenge, our scientists are well equipped to go out and seek funds for specific research projects. If there is a need for a project in soil health or a plant disease, we can seek funds from a variety of different sources of grant funding. What we are not well equipped for and what grant agencies don't want to fund, is the baseline operations of the main campus or our branch stations. Grant agencies are much more interested in funding specific projects. In fact, when you look at their request for proposals, they're addressing specific issues within what their crop commodity group or agency wants to address. They are not offering grant dollars to simply support the baseline operations of the agency.

**Senator Erbele:** They want something that will provide a result not pay the fuel bill. (Correct.)

**(0.46:46) Senator Robinson:** Do you have, or could you get us in simplistic terms, a list of the reductions in this budget? Not the 2017-19, but in this budget, the total reductions. We do not need much description, just so we know what the package looks like and what it would take to get back to, If you want to call it needs-based. I think we have gone too far, in my opinion, to the extent we can try to catch up or come back, I think it's incumbent we try to do that. I am not speaking for the committee here. But, this is important stuff. I cannot imagine the morale, when folks have the uncertainty of job security and all those other issues, and at the same time you're supposed to produce and get your job done. I hope we can turn the corner on that this session.

**Greg Lardy:** We would be happy to provide that information in a simple format. State Board of Agriculture Research and Education (SBARE), in Century Code their duties are spelled out. One of those is to provide program direction, budget direction for a needs-based budget. They have ranked a number of initiatives heard, of course, testimony of our constituent groups across the state relative to the needs. Those needs are described for both agencies in our budget book. I can highlight those for you if you are interested.



**Senator Robinson:** I grew up on a farm, but it has been a long time since I operated that whole process. I know what has happened. I have been out here 30 years, when I first got here; I would take my coat to the Senate locker room. Literally, the top of the lockers were covered with cowboy hats. There is none left. I hear from colleagues that extension and research have outlived their usefulness. We have a very aggressive private sector of agronomy experts. And they get all their information from those folks. That is not the case. They are not independent, they are good people, don't get me wrong, but they have alternative motives to sell their products. It is scary that we have fewer people here that come from the farm; work on a farm, etc. This is an industry that is critical to our state. If there is one thing that is causing us to be cautious, it is the Agriculture economy. If we had a magic wand to turn that around, we would be in another place. I think we have to be careful here. The greater cost to me is in "not" investing in extension and research.

**Senator Wanzek:** We no doubt agree with Senator Robinson. I look at my life and career on the farm. It has been mostly growth through scientific advancement and research. The yields, production, efficiencies, that is how we stayed in farming. We would not have stayed in farming if we were still using the methods and the tools I had when I first started. If I were operating with that, I wouldn't be competitive. I think we all get it.

**(0.51.26) Greg Lardy:** The investments you are making in Ag research and extension programs, if you look at national studies, it shows a return of investment that is well over 30-40%. Just as you mentioned, those investments pay dividends in terms of increased productivity, increased yield, and soil conservation. All these things that lead to generational benefits. Not a single year benefit, but long term benefits for the health of the land, for the health of our rural communities, for the sustainability of our farming and ranching operations and so when we look at the ongoing cuts that are proposed, it will play out in terms of reduced research productivity and answers to those questions that are going to come up, not just next year but a decade from now, and we will see the slowdown in terms of our ability to respond to those critical needs.

**(0.52:36) Senator Robinson:** One thing we should do as a committee is recommend to the greater committee and to our legislative leadership, I think the one thing we have failed to do is let people see this. We have tours of the higher education institutions. We are not very good about getting out and visiting our research stations across the state. In 1995, we went to Hettinger and I do not think anyone has been back since. These facilities are assets to the state. We need to do a better job of getting our people out there to get a little taste of what is happening and what's going on. They are all very productive and do great work. Senator Wanzek talks about production. Not many years ago, a former senator told the committee, you will never plant corn and have crops in Barnes County. It is not corn country. We know that has been proven to be wrong. Disease resistant, drought resistant, we look back a few years and we would be struggling more than we are. I think that is something we should talk about and get out to those facilities on a regular basis.

**Greg Lardy:** We would welcome you and any members of the legislation assembly to come to our centers and stations at any time.

**Senator Erbele:** That could be worked into some of the studies we do. We need to move on here. Let us pick up the last sheet on budget #649, the Agronomy Seed Farm. If I remember right, that self-sustaining, self-funding entity that doesn't have a lot in it for us here.

**Chris Kadrmas: Submitted Attachment # 6, Agronomy Seed Farm, Budget # 649.** Correct, it is a special fund agency the only changes that were made by the House were the compensation changes and that is all that was requested as well. The other sections are the additional income appropriation, FTE position adjustment and the carry-over authority.

**Senator Wanzek:** There has been requests made for a list of the cuts that have to be made. I am coming at it from the other side. We see what is in the budget now, to help us; I am thinking there is some willingness to restore some of that funding. How can you help us achieve that realistic number? What kind of number would that take, to prevent from losing programs, scientists, etc.? If something like that could be put together to help us, instead of throwing numbers out there.

**Senator Robinson:** Perhaps some of the other agencies are providing us a list of reductions. I know this is difficult, but prioritizing restorations. Of these however many reductions, this number is absolutely critical.

**Senator Erbele:** I see some heads nodding.

**Greg Lardy:** We would be happy to provide that list for you. The obvious, most pressing need is the restoration of the proposed cuts, but we can get into more detail on that.

**Senator Erbele:** Speaking of getting into more detail on that, most of you have come from a great distance. Are there days that do not work for you if we want to meet again soon? Maybe by Thursday this week or should we wait until next week? What are your thoughts, we want to be sensitive to you.

**Greg Lardy:** We are happy to come when you need us, we will adjust our calendars to do so.

**Senator Wanzek:** We might have to do one more this week. We have to get the bills out soon.

**Senator Erbele:** I see that our Wednesday is full. I think we will talk again on Thursday. I am sorry I cannot hold you over, but I guess you can stay 2 nights if you want. We will work on it this afternoon and try to finalize the schedule. We will try to do it on a Thursday late morning or after session. If we look at the research stations, other than the special request for Williston, the rest are all under that \$1.2 million. I didn't see anything on soil conservation, is that part of the section of this budget?

**Greg Lardy:** It is contained within the NDSU extension service budget. There is nothing specific to that.

**Senator Erbele:** As long as you are up there, flip to page 59 in the book. We have the capital improvement requests. In that list, we have the Williston station, but then there are others

that don't show up anywhere as being funded or taken care of. Are any of those a critical priority that you would want us to consider?

**Greg Lardy:** SBARE ranks the capital improvement requests for the two agencies you are dealing with today. The Williston facility was #2 on their list. We also had #1, which was an agronomy, pathology and soil field lab facility, which is a replacement for Waldron Hall. Given the budget conditions, we know what the state is facing. We don't believe that request is realistic at this point. #3 on the list is equipment storage sheds. That would be sheds that are constructed to house the various specialized plot equipment at each branch stations. The equipment is becoming more and more expensive. The need to store it indoors with the specialized equipment is a critical need.

**(1:02:22) Senator Erbele:** Of the eight, are there some in greater need than others? If we could find it in our hearts to do two? I know in Streeter, there are many barns and sheds. I don't know if they are adequate?

**Greg Lardy:** If the subcommittee chose to put two in, we would certainly find a way to prioritize those and identify the most pressing needs.

**Senator Erbele:** Do you want to talk a little bit about the precision Agriculture request?

**Greg Lardy:** The precision Agriculture facility is a capital construction cost estimated at \$6 million dollars. It is becoming much more important in terms of our research agenda and across the state. This facility would allow us and our scientist to pursue a number of different research areas that they can't conduct in an outdoor setting.

**Senator Wanzek:** Maybe we should have Terry or Donnell comment on the agreement made for the request to restore some funding to the state share versus local tax.

**Greg Lardy:** From an extension perspective, as part of the budget realignment process with the 2017 session, the counties and the NDSU extension changed our base policy agreement with funding county base positions. We went from a system where extension was funding 50% of the salary package, to a system where extension and counties partnered on a 60/40% split of both the salary and benefit package. It upped the cost to the counties to continue to fund extension agents at somewhere around \$4-5,000 per agent. SBARE listened carefully to the testimony and upon evaluation of that; the #2 request is enhancing our county partnership. Those funds would allow us to go back to a more equitable partnership between NDSU extension and county government to put those funds to use.

**Senator Erbele:** Is that a \$2 million dollar request?

**Greg Lardy:** It is a \$870,000 per biennium to help us make that adjustment.

**(1:06:04) Donnell Preskey, ND Association of Counties (NDACO):** The number is correct. The county commissioners formed a group to work on a compromise with how to address the shortfall. They reached an agreement to change that funding formula. My testimony has a chart on it that shows what the funding formula was before the budget cuts and with the agreement. I want to emphasize, that agreement was for the calendar year 2019 only. There

has already been discussions by our county commissioners' group to reevaluate this. We have been able to hold that off until we see what happens this legislative session. It was a shift of \$820,000 onto the property tax payers. That is already on top of the \$5.5 million that our counties are funding for extension. There were definitely counties that were not able to do this. Bottineau was a county that could not fill a position.

**Senator Erbele:** Did some counties raise their a million or two to cover this or did they find it within the budget?

**Donnell Preskey:** It mainly came from the general funds. Stressing that this was a temporary agreement.

**Senator Erbele:** Anybody from the audience that may of got bypassed?

**(1:08:09) Barton Schott, President, State Soil Conservation Committee:** When I testified in front of the whole committee, we thanked them for restoring and keeping our base funding. I had made a request to go back to the 2017 funding and increase our committee funding by that amount. I would just remind the committee of that.

**Senator Erbele:** What is the amount of that request?

**Barton Schott:** The amount in 2017 was \$1,212,800. Now it is \$1,091,520. So it is around a \$121,000 just to restore that funding back. The reason I made the request is we are okay with the funding, but when I looked two years ahead, it would be a mistake not to take us back to the previous funding.

**Senator Erbele:** These walls have ears and I just got a note from our chairman that says "No problem for Thursday at either 10 or 11 am." Unless someone has a strong desire for 10 am, I will set it for 11 am. We will be back Thursday at 11 am to hopefully draft some final amendments and get this thing moving on to the next phase. We started 5 minutes early and ending 5 minutes late, so it's better than ending 10 minutes late if we'd of started on time. Thank you all for being here.

The subcommittee hearing was adjourned on HB 1020.

# 2019 SENATE STANDING COMMITTEE MINUTES

## Appropriations Committee Harvest Room, State Capitol

HB 1020  
4/4/2019  
JOB # 34527

- Subcommittee  
 Conference Committee

Committee Clerk: Alice Delzer/ Amy Crane

### Explanation or reason for introduction of bill/resolution:

A Subcommittee hearing for NDSU Extension Service

### Minutes:

No testimony submitted

**Senator Erbele:** Called the Subcommittee to order in regards to HB 1020 at 11:00 am in the Harvest Room. Let the record show that all subcommittee members were present: Senator Erbele, Chair., Senator Wanzek and Senator Robinson. Larry Martin, OMB and Alex Cronquist, Legislative Council and Danielle Foster, Legislative Council were also present.

**Senator Erbele:** Welcome to those in the audience. We will be opening it up for discussion. What we want to do today is a walk-through of the various sections that we discussed. On Tuesday when we met, we have the items kind of in mind and then once I've asked you up here to make your point, we'll discuss it as a subcommittee. Our intent to make a motion for an amendment and as we have the long sheets, we have six different pages of budgets, six separate parts and we'll be taking amendments on each one as we go.

**Senator Erbele:** So this morning we will start with the upper Great Plains Transportation Institute (Budget #627 UGPTI) if Denver would come up. I'll have you just address the line there where the house had added \$450,000. I think the understanding is there that that only gets us half way to where we need to be. And also the line above it, for the miscellaneous expenses, those numbers are different from the executive side to that side and also then there was also a mention made of the tie in with the prairie dog, so if you could bring those threads back together and give us a synopsis of what we're really looking for I see that as probably being the only part in budget #627 that we need to be discussing here for an amendment.

**(0.02.12) Denver Tolliver; UGPTI:** I'll start with our base budget for the current biennium which the House started with, was \$3,433,174, that should appear somewhere on your work sheet. (This document was presented to the subcommittee on 04-02-19.) There is a line of \$70,863 which would also appear on your worksheet, that was a 2% cut enacted by the House in response to the governor's budget limit guidelines which had actually called for 5%, the House cut 2% instead.

**Senator Erbele:** So they then restored \$101,000 of that executive cut?

**Mr. Tolliver:** Correct and then there should be another number in there that should say the addition of \$141,095, that's the salary package only.

**Senator Erbele:** We won't address that.

**Mr. Tolliver:** So there was the \$70,863 cut and then the House added back \$450,000 for our Road and Bridge Study. Our request for the Road and Bridge Study and our asset management program was \$975,000 and in addition to doing the biennial needs assessment which is needed for Operation Prairie Dog, we would continue to build out our Road and Bridge asset management system for the counties which they heavily utilize and we would expand this geographic roadway intermission tool that we have with the remaining part of that \$975,000 and my goal for the next legislative session would be to have that completely up to date online, with all the information so that anyone, a county road manager or a legislator, could just simply go online and click on the road segment and you'd see all the construction history, the current condition of the road, our estimate of truck traffic on it. And then also, where that money came from to invest in the road. So was it money that came from the legislature or was it from other sources. So we are hoping then, with the full funding, not only to do the Road and Bridge Study but to really get that honoring tool ready, in great shape for the next legislative session.

**Senator Erbele:** Would it be safe to say that you're viewing this more as a one-time funding so that once the data is up there, we wouldn't be looking at \$975,000 as a continuing appropriation? It would be a matter of a maintenance of the system?

**(0.05.34) Mr. Tolliver:** Our request is for addition to our base funding. The House added it to our base because the expectation is that we'll be doing the biennial needs assessment study every biennium as required by Operation Prairie Dog.

**Senator Wanzek:** For providing that kind of information, is the IT's GIS (Geographic Information System) program an important part of that?

**Mr. Tolliver:** We have a very detailed GIS system, and we do start with the network hub that the North Dakota DOT puts out, but we build it out with our own system. And so with respect to the GIS hub, that is our starting point. Yes, it is, Senator.

**Senator Wanzek:** So I'm hearing you say that \$450,00 is just going to cover the ongoing reports? Biennium to biennium?

**Mr. Tolliver:** Plus, continue to, well if we were to get the full funding, it would cover the biennial needs assessment and the continued improvement of the online asset management tool and system. The last time we did the biennial needs assessment study, it was \$750,000 that the legislature provided. We were able to do all the county, tribal, and township roads. We didn't drill down at the jurisdiction level, at the township level that some people are wanting in this updated study. There was an initial request that we would report out at the township level. So the level of effort is pretty consistent. So each year we go out and we

collect each biennium traffic counts. More than 1,000 locations around the state. We update all the economic forecasts for crop production and oil and so it's a big ongoing effort.

**Senator Erbele:** Was the case made to the governor to include this in his budget? And can you tell me why it wasn't?

**Mr. Tolliver:** The case was made, but the executive recommendation was not to add anything to our budget but to cut our budget.

**Senator Robinson:** I don't know where the rest of the committee is coming from but I think this is something we need to do. And I think over the interim, to the extent we can bring other entities and agencies on board, I think we're in a critical situation with our roads and bridges, and I think we're less than responsive if we don't respond to the needs out there. It's just getting away from us. I sat here 20 years ago, and we had the same story: we can't do it now, maybe next year. We've been putting it off and it's a cancer. I think we should include the full funding for the Road and Bridge Study.

**Senator Erbele:** So Denver, would your request then be to add to the \$450,000 another \$525,000?

**Mr. Tolliver:** That's correct. In my testimony I pointed out the cost savings from really being on top of the situation out there and making the timely improvements and avoiding rehabilitation. And I made the point in my statement, that if we just spend \$1 at the right time, in the right way, we save \$4-5. It only takes the right decision on 5-10 miles of road out there to pay for the entire program. So the cost savings of the program, as I documented in my write up would greatly exceed the additional costs.

**Senator Erbele:** I remember that. I think that will be it, thank you Denver. What do we want to consider here?

**Senator Wanzek:** I think as we go these we'll identify each budget, that's what I'm thinking you're asking for. And I think we could include in the amendment the \$525,000. We know full well it will go to the House. We might not get the full amendment but we might get something.

Senator Erbele: So will you make that into a motion for Budget # 627 as an amendment to that budget? We are going to take each budget in sections.

Senator Wanzek: Obviously, the payroll changes are going to be what they are going to be.

Senator Erbele: That would be standard going forward on all of them.

**Senator Wanzek made the motion to fully fund the Road & Bridge Study for \$525,000 for Budget # 627. 2<sup>nd</sup> by Senator Robinson.**

**A Roll Call vote was taken. Yea: 3; Nay:0; Absent: 0. (For Budget # 627, UGPTI, Roll call vote # 1.)**

**Senator Erbele:** We're now going to go into Budget # 628, (Branch Research Centers) And I have some questions because we're going to be addressing soil conservation. There was a request from them, I don't know where they fit.

**Alex Cronquist, Legislative Council:** They're under the NDSU extension service so that will be #630.

**Senator Erbele:** If we want to talk about the capital improvement requests, include them under #630 as well?

**Alex Cronquist, Legislative Council:** Those should be included under #640 the main research center, for capital improvements.

**Senator Erbele:** And then if we wanted to talk about the extension operational support that would be under #630 as well? That was confirmed.

**Senator Erbele:** So then the next one we will take up is #628, which is the Branch Research Centers. As I'm recalling that, the request was to restore the operational funding of the \$1.2M and beyond that I don't recall any other requests coming out of the Branch Research Centers and the justification was that because of rather huge cuts after the last biennium and this again stymies their research opportunities. Mr. Lardy do you have anything to offer to that?

**(0.13.47) Greg Lardy, NDSU Ag. Affairs:** One comment, relevant to the other requests. In addition to the restoration the \$1.2M, the governor did include \$200,000 of special fund authorization for the Oaks irrigation site. That is actually contained in the SBARE request #3 programmatic initiative for #3 under the main station budget which would include a general fund request for those dollars.

**Senator Erbele:** That is in the budget from the governor and the House kept that.

**Greg Lardy:** For the Special funds. It didn't include it as general funds.

**Senator Erbele:** And you're asking for general funds for that?

**Greg Lardy:** It would be part of that SBARE programmatic request #3. And yes we're asking for general fund dollars for that.

**Larry Martin, OMB:** The request, they would like to see that \$200,000 switched over to general fund request.

**Senator Robinson:** The issue there, Oaks has really been managed through Carrington and if we don't do this, they have to go out and fundraise?

**Greg Lardy:** That's correct. I just had a conversation with Wayne Schatz, the director at Carrington this morning, in talking about the accumulative effects of these budget cuts and he indicated that the serious nature of these cuts and another six percent cut here would require him to eliminate one of his primary research programs at the Carrington station. And



then in addition with this \$200,000 fundraising requirement put additional stress on the Oaks site for being able to continue those operations.

**Senator Wanzek:** I will support moving that the \$200,000 to general fund, but I'm just curious, what exactly is it used for in the irrigation site.

**Greg Lardy:** The \$200,000 in funding there would be used to support the baseline research operations that go on there. So funding travel from Carrington to Oaks to get technicians and scientists down there to do the field planning, collect the data, do the normal field operations. We don't have staff that are located there, so there are some increased costs to manage that operation, so it would go to support the overall management and operation of that.

**Senator Wanzek:** So there is recent crop research?

**Greg Lardy:** Correct, its focused on irrigated crops in that area and more higher value irrigation crops and that sort of thing.

**Senator Wanzek:** Is there some going on at Carrington?

**Greg Lardy:** There is also some irrigation based research.

**Senator Wanzek:** One further question, the reduction in the capital bond payments, is that just to reflect what your bond payments are? Just smaller pivots or a smaller degree. They are getting paid off so there's really no need to address that at all.

**Greg Lardy:** That's correct.

**Senator Robinson:** If you are open to a motion, I would do that.

**Senator Erbele:** So we're clear on the motion, if we are going to restore any operations, the exact number is \$1,200,560. You want it to be that?

**Greg Lardy:** I would support both, the \$1.2 and then you need the \$200,000 switching to the general fund.

**Senator Erbele:** And I would entertain that as one motion.

**(0.17.33) Senator Robinson: Made the motion to restore operations to \$1,200,560 and move \$200,000 to the general fund. 2<sup>nd</sup> by Senator Wanzek.**

**A Roll Call vote was taken. Yea: 3; Nay: 0; Absent: 0. (For Budget # 628, Branch Research Centers, Roll Call Vote # 2)**

**Senator Erbele:** We're going to move on to Budget # 630, that is Extension Service, and within that we want to consider the extension operational support of \$870,000. And I as I understand that would be to make up for last biennium. That was only a one-time deal where we asked the counties to pick up a little bit larger share of the tab because of the cuts. So this would get us back to where we were and you would renegotiate that with the counties.

**Greg Lardy:** That is correct. This funding would allow us to, as was pointed out in previous testimony, this is a one-year agreement with NDSU extension and the Association of Counties so that that operational support initiative would allow us to go back and develop that more equitable funding arrangement with our county partners.

**Senator Erbele:** Are you able to speak to Mr. Schatz stood up at the end and asked for \$120,000 on soil conservation. Are you able to talk to that?

**Greg Lardy:** Sure. It's not part of our SBARE initiative process but as you look at the benefits for soil conservation across the state, restoration of that funding would allow soil conservation work to be furthered in many of these soil conservation talks.

**Senator Erbele:** Was that a cut, then, of the \$120,000 that we're restoring or are?

**Greg Lardy:** The cut was from the previous biennium.

**Alex Cronquist, Legislative Council:** During the 2015-17 biennium, where there were the allotments, then the further reductions, their appropriation for soil conservation, at the beginning of the '15-17 biennium was supposed to be \$1,212,800. As it stands in the current budget, its \$1,091,520. So a difference of \$121,280.

**Senator Wanzek:** Where is this cut?

**Alex Cronquist, Legislative Council:** There wasn't a cut in their current budget, it was back in 2015-17.

**Senator Wanzek:** Where would that go? Like when we are looking at this.

**Alex Cronquist, Legislative Council:** It would be a new line on the long sheet. On the bill, there's a soil conservation committee line item, under extension service.

**Senator Robinson:** Where is the figure on making the counties whole again? Where is that figure at on this budget sheet #630?

**Alex Cronquist, Legislative Council:** That was not included in the executive budget or the House recommendation so it's not on the long sheet.

**Senator Robinson:** What's the amount on that?

**Alex Cronquist, Legislative Council:** I believe it would be \$870,000.

**Senator Erbele:** The house put in the general fund \$100,000, was that ear marked for anything?

**Greg Lardy:** The legislation did not earmark that for any particular program, but it stemmed from a discussion around general support for 4H.

**Senator Erbele:** So it's safe to say it's for 4H?

**Greg Lardy:** That's correct.

**Senator Erbele:** Okay, we'll not touch that.

**Senator Wanzek:** I am wondering the reduction to the miscellaneous of \$1,063,332, that's the cuts from what? Operating?

**Greg Lardy:** That would be a cut that we would, per the executive budget recommendation, and so on, would be a cut we'd implement with both reductions in staffing and operating support.

**Senator Wanzek:** Oh and the House removed it right?

**Greg Lardy:** The House restored it.

**Senator Wanzek:** I didn't realize, I thought we would have to address that.

**Senator Erbele:** If we could briefly speak to, and I know it's here with the SBARE initiative for the \$345,000 for website and digital upgrade, that was in the executive budget that the House did not take. Could you speak to the priority of that and then if that's the other?

**Greg Lardy:** That recommendation stems from an SBARE initiative that actually came from the review of extension that was conducted during the previous biennium and one of the major recommendations coming out of that review is to make extension's information bulletins more accessible, via digital format so whether you're on an Ipad as you're driving your tractor across the field on your smart phone, some of our website is not all that accessible, it doesn't appear in a good format for that sort of application, so that recommendation came through the governor's executive budget as one of our SBARE priorities for one-time funding to upgrade our web presence and allow more of that information to be transferred appropriately in a digital fashion.

**(0.24.12) Senator Erbele:** So this is new and it would be one-time funding? that was confirmed. Discuss with the committee?

**Senator Robinson:** Well unless you want to do it all the time, we didn't have a motion on the county soil and conservation.

**Senator Erbele:** I would like to just do a blanket amendment thing for all of them, so just by consensus the \$870,000 back to the operational fund, in the soil conservation. We're in agreement with that. Then soil conservation for the \$120,000. We're in consensus about that too. So then the only thing that I see left to talk about is the website and digital upgrades, the \$345,000.

**Senator Wanzek:** I caught the part about how this would help you provide better service to say I'm sitting in my tractor and I just want to pull up some data information.

**Greg Lardy:** That's correct. the formats that we have, some of the web pages and information on the website now are not totally compatible with smart phones and that sort of thing, so it would allow us to upgrade our web presence so that when people wanted to access that information from wherever they're accessing it from, whether it's a desktop computer or an iPhone, it would come in in a format that is friendly to read, easy to read, more accessible across the board.

**Senator Wanzek:** I would support putting that back in, at least having the discussion in conference committee. When I think about it, I think about how much I depend on my phone. But then when I hang around with these millennial farmers like my son and nephew, that phone is more important than the combine.

**Senator Erbele:** In arriving at that number, is that a research number, is that a projected number?

**Greg Lardy:** It's a number that we projected based off of discussions internally within our ag communications group and with some vendors about what we think the cost would be to do the upgrade.

**Senator Erbele:** Is there an opportunity to find other sources of funding, like matching funds or anything like that? That seems to be a House position on a lot of items that they'd like to see matches.

**Greg Lardy:** Not out of the question but not that easy to do in terms of general grant dollars to do those sorts of things.

**Senator Erbele:** Senator Wanzek, you said you would be inclined to support?

**Senator Wanzek:** I guess I would be in support. I guess if it's something that we just feel that we can't do it this time, we could address it late.

**Senator Erbele:** We're willing to go to conference committee with it. That was confirmed by both Senators. then I would be looking for a motion to do the 3 items we discussed.

**Motion from Senator Robinson: so moved. \$870,000 for extension operational support, \$345,000 for the website and digital upgrades and \$121,280 for the soil conservation. 2<sup>nd</sup> by Senator Wanzek.**

**A Roll Call vote was taken. Yea: 3; Nay: 0; Absent: 0. (For Budget # 630 for NDSU Extension Service, Roll Call Vote # 3)**

**Senator Erbele:** We're into the Budget # 638, #4, the Northern Crops Institute. I don't see a lot in that budget other than what the House has an adjustment for the miscellaneous expenses. The executive budget reduced and put it to other funds. Alex do you want to talk to what we're seeing on these sheets, was there any better crops?

**Alex Cronquist, Legislative Council:** So the changes that were made were the compensation and then the executive budget had reduced the general fund by about 5% and

then increased other funds by that same amount. The House reduced it by 2%. And then they increased the other funds a little bit more just to get it to round number. Just need the authority to go and raise that money.

**Senator Erbele:** I don't recall any request to do anything further.

**Senator Wanzek:** I think this is one where we can save some ammo.

**Senator Erbele:** So we except the House version of Budget # 638, Northern Crops Institute and move on? that was agreed upon by the Senators. **(No Roll Vote was called for Budget # 638, Northern Crops Institute)**

**Senator Erbele:** Then we will move on to Budget # 640 the Main Research Center. So this is the one where if we want to discuss adding to any of the capital, things like in Williston with the seed plant. Or any of the other items on page 59 of our book, we can do that now within this as well as, I think we need to look at the adjusted funding for the misc. expenses of the \$2.9M which is operation to us, which again is the same situation that we talked about with the branch centers. This is probably taking it a step too far in asking them to reduce. I would be in favor of bringing some of those operational dollars back.

**Senator Wanzek:** Not being on the committee last time, I know we discussed it when we had the previous meeting but what were the cuts with the allotments and, I mean, didn't we significantly cut this in the biennium before last session with allotments? Well and cuts from last session. So even if we restored it the full \$2.9M, we're still not back to where we were 4 years ago.

**Senator Erbele:** I believe it came to about a 13% reduction.

**Greg Lardy:** The allotment process essentially reduced the budget by 6.55% and total cuts during that biennium were 13.7%. The total cut as a result of the allotment process and the reductions that occurred during the session totaled 13.7% reduction.

**Senator Erbele:** Which came to about \$8M? that was confirmed.

**Senator Wanzek:** This \$2.9M would be another?

**Senator Erbele:** It would be on top of the \$8M.

**Greg Lardy:** We'd be down nearly 19% over the course of two biennia, if this was adopted as is.

**Senator Wanzek:** I am trying to understand, like the House added another million in special funds and where do they expect you to get that money?

**Greg Lardy:** I don't know that I can answer that question. In my previous testimony, I indicated the difficulty of trying to raise funds through grants for general operating expenses. It is nearly impossible to find granting agencies that want to give dollars for that type of purpose. Our agencies that we work with, whether they're federal, state, or

commodity group industry, they are very interested in funding research, that has a very specific aim or objective. But they're not interested in funding what I would call baseline operations.

**Senator Wanzek:** Is that what most of your other funds are? A significant part of them are funds that are dedicated towards a certain study for a certain purpose?

**(0.33.49) Greg Lardy:** That's correct. So the potato growers would fund a research project that involves investigations of interventions for light blight. Or the wheat commission might fund a study that's interest or objectives is just to investigate milling qualities of certain varieties of wheat, but they're not going to invest dollars in the baseline operations of what we need to maintain, the critical research infrastructure across the system.

**Senator Erbele:** So the number we put in there, could essentially be anything because all we are doing is just giving authorization to spend it. That was confirmed.

**Senator Robinson:** I agree fully with you, I'm in development in Valley City and there is tremendous resistance, even asking for operational money. People with fund projects, and they're good at that. But the message is if you can't support the overhead operation than someone is suggesting your operation is not a priority. So I would support we need to make a significant restoration here. I think we've eroded the agency way too far.

**Senator Erbele:** Are you comfortable with not supporting the present proposed cuts to the budget then? And bringing \$2.9M back?

**Senator Wanzek:** That would be holding the budget to where we're at today right?

**Senator Erbele:** That's correct.

**Senator Wanzek:** I support that when you consider I think our argument is this budget has been cut 13.7% previously and there is no raise going into it. At least I would support that going into conference committee.

**Senator Erbele:** Ok we'll hold that thought.

**(0.35.54) Senator Erbele:** If we look to the one-time funding for the Williston Seed cleaning plan, the House did come along with \$250,000. If you remember the conversation it was probably \$1.5M project, but they're comfortable with \$750,000 and then seeking the rest

**Greg Lardy:** Yes, they have confidence that if the state were to provide the \$750,000 in general funds that they would be able to fundraise in the Williston area for the remainder of the cost of the project.

**Senator Robinson:** They also requested authorization for the green house?

**Senator Erbele:** Yes, that was an amount in \$500,000 but just authorization to raise the funds.

**Greg Lardy:** That's correct, there is no general fund request.

**Senator Erbele:** And they did indicate that there was the opportunity as far as some of the costs that it could be tied into some of the natural gas that is being lost up there right now and could be part of their heating source and so on.

**Greg Lardy:** That's correct. There is potential opportunity to tie into some of the gas that's being flared from wells within that vicinity of the research extension center and they believe they have the support from the oil industry in that region to potentially use that as a demonstration project for using that waste gas as an energy resource.

**Senator Erbele:** There are no funds being requested for it other than just the authorization to do it. But I guess I support it.

**Senator Wanzek:** I guess a question I want to ask before we even got that far is the House gave that extra million of authority. Why don't we remove that extra million and give the, I mean take that \$500,000 out of that million, and reduce that other \$500,000? I mean it really doesn't have much of an impact.

**Senator Erbele:** If we go back up to the top, the governor had \$2M, the house raised it to \$3M, bring that back down to \$2M, leave it at the governor's level. And then down below where the \$250,000 is on that line, we would add another \$500,000 onetime funding, for the Seed Plant to bring that up to \$750,000.

**Senator Wanzek:** We could have a line that says \$500,000 of special funds for Williston greenhouse. And we're cutting budget.

**Senator Erbele:** Have we covered everything on that?

**Larry Martin, OMB:** One other additional item with this budget the agency brought forward just before this meeting, they would like to have an exemption for carry over for the Carrington Seed Cleaning Plant and the Northcentral Seed Cleaning Plant projects as they are not going to be complete this biennium.

**Senator Erbele:** Exemption for carry over. Okay, and that isn't currently in any of our notes. That was a new request. Was that offered to the House at all, or just wasn't aware of it?

**Larry Martin, OMB:** We were not aware of it. We just found out just before this meeting.

**Senator Erbele:** So to recap on the Main, do you want to restore the \$2,955,742? Or do you want to talk in round numbers? Senator Wanzek do you want to walk through it as you see it.

**Senator Wanzek:** I would eliminate the cut the \$2.9M+ cut and take the \$3M other funds down to \$2M. And I guess the cap on all the rest of that would stay the same. We would leave the extraordinary repairs with the \$1.4M, that would stay the same. Then we would add the \$500,000 for other funds for the Williston greenhouse, and give them authority to

spend that, then put in another \$500,000 in the Williston seed plant. I guess the precedent has been set. The other Centers got \$750,000. That's kind of hard to tell another one we can't do the same for them.

**Greg Lardy:** That's correct. The other two seed cleaning facilities did receive \$750,000 in general funds. And the potential donors that they've been discussing this project with at Williston have indicated they want to see the state step up with a general fund commitment that's similar to what the other projects got.

**Senator Erbele:** Would you make that the motion in addition to the exception for the carry over fund?

**(0.41.14) Senator Wanzek: Made the motion to restore \$2.9M back for extra-ordinary repairs; \$500,000 for Williston Greenhouse; \$750,00 from general funds for the Williston Seed Cleaning Plant and exemption for carry-over for Carrington Seed Cleaning Plant and North Central Seed Cleaning Plant. 2<sup>nd</sup> by Senator Robinson.**

**A Roll Call vote was taken. Yea:3; Nay: 0. Absent: 0. (For Budget # 640, Main Research Center, Roll Call Vote # 4).**

**(0.41.16) Senator Erbele:** The next one is the Agronomy Seed Farm (Budget # 649) I didn't see anything there other than just making the salary adjustments as we're doing in all the other parts. Does the committee or anybody in the crowd have anything to say to us or are we right to assume it's self-funded? The salary adjustments, we don't need a motion for that because that is understood in all the budgets. **(No Roll Call Vote was called for in Budget # 649, Agronomy Seed Farm).**

**Senator Erbele:** I did goof up. I wanted to discuss further some other of the capital things which would really fall under Budget # 640. If we'd want to look at page 59 in your book, there's capital improvement requests for equipment storage sheds we wanted to maybe consider something there.

**Senator Robinson:** I would suggest that I'd like to see us make some progress here and we don't know what's going to happen in conference but we said if we would do some of them, they would put together some criteria and determine priorities. I would suggest that we fund in this package two of those shops and go into conference?

**Senator Erbele:** There are \$300,000 per shed is what they say, you want to put in an amount for \$600,000 or you want to do something less like \$400,000 with \$200,000 to be raised or do you want to talk about it later?

**Senator Robinson:** That might be a result of conference committees, but maybe it's because I'm paranoid. It's easy to pass the buck and say raise the money. Our staff is stressed to the max already and we're turning them into fundraisers and they've got jobs to do and I am just reluctant to go down that road. And if that's the only way that we could get them in there, that's another thing. But the economy is tight out there and the ag economy in particular is very tight. We're not all pro-seed dealers.



**(0.44.37) Greg Lardy:** I could follow up on that comment. This falls into the category of fundraising for general operating support. And I think generally as you look at the fundraising climate out there and the grant support climate, our scientists are very good at going out and finding dollars to support research and extension programs that have a very specific aim or objective. But when it comes to making a request for someone to support the construction of a machine shed, or equipment shop at any of our branch stations or main campus, you'll find very few donors that would be willing to donate to that sort of cause. It is just the reality at where we are at in the fundraising climate. And I don't see that changing anytime in the near future.

**Senator Wanzek:** What if we gave you the authority, to do more than two, but make it a \$600,000 general fund, I mean are there resources within your, I am assuming some of the crops you generate, the centers are generating some income. Is there any room in there to use some of that where we could actually maybe get more of them built but give you the authority in part of that general fund?

**Greg Lardy:** There is some capacity probably for each of the centers to contribute to a small degree to the construction of these sheds at each of the locations. I caution you that due to the magnitude of the previous budget cuts, there is not a lot of cushion in the overall system right now to absorb a lot of that additional special fund authorization to go above and beyond. One of the primary sources of income, that a number of our branch stations have is sale of foundation seed and as you might expect given the current farm economy climate, those seed sales and income have slowed up as a result of that. There is some capacity for it, but I would not expect to be able to do a significant share of the construction project like that with special fund dollars, even as the income sources it already sees.

**Senator Wanzek:** I am assuming the fact that there is a request for 8 a need for 8. And I was just thinking, you're saying fund two fully rather than say we'll fund four and provide half of it in general funds?

**Greg Lardy:** I think that would be a better option for us to fund two fully, than a lot of special fund authorization to do fund raising or other income sources.

**Senator Wanzek:** My next comment to Senator Robinson would be, if we want to really fund two, lets fund three.

**Senator Robinson:** If you want to go into conference committee with three, I'm ok.

**Greg Lardy:** Relative the machine sheds, when you think about the types of farm equipment that you use now on your own farms now, take that and look at the specialization that our plot harvesting equipment and so on. We have a mixture of equipment that's very sophisticated, expensive. And if we don't have an opportunity to store indoors, it increases overall operational costs in the long-term because of the increased depreciation and maintenance that occurs when its outside in the weather conditions.

**Senator Erbele:** So before we further amend onto # 640, is there anything else before we wrap this up that we had forgotten? I had a conversation with Keith or somebody out in the hallway about bio?

**Keith Peltier, SBARE Chair:** The Agribiome is an initiative for research and we feel that it's kind of on the cutting edge. It's where the trade stuff was 20 years ago. And we feel we need to be on the cutting edge of that research in order to keep pace with the other states and within the Ag organization. I know the results of that, I can speak quite highly of that, you know 40% ROI and 20B over 20 years and the wheat stuff. Dr. Lardy would be able to talk about how to get there with that. So, yes we think that that is very important. That would fall under the Main Station initiatives, which you'd have to re-amend again.

**Senator Erbele:** Is there a dollar amount? Was that brought forward in our full discussion to the committee when you were bringing your presentation?

**(0.50.22) Greg Lardy:** Yes, that was part of our discussion with your full Senate Appropriations Committee. It is the #1 programmatic initiative for SBARE. So the Agribiome if you think about it simplistically, it's really the community of microorganisms that are on plants, and within the soil, animals' digestive tracks, etc. We really think it's the next frontier of agricultural research. As you look at the pressure from all sorts of groups to reduce pesticide use, reduce antibiotic use, the Agribiome is this community of microorganisms that essentially lives on plants and animals, on roots and so on. We think ultimately it will lead to breakthroughs and reduce fertilizer applications, better soil health, reduce use of antibiotics, better animal health and a number of different ways that this could be beneficial over the long-term too, not only production efficiency but also how we utilize chemicals and antibiotics and so on in production systems. And as you might expect, our consumers are asking more and more for those types of production systems and we need to find a way to transition into less dependence on those chemicals and more about managing that system as a system. The price tag is \$1.16M. That would include funding for two scientists and two technicians.

**Senator Wanzek:** I hear you saying it's the #1 priority?

**Greg Lardy:** It is our number 1 programmatic priority.

**Senator Erbele:** I get a little confused with SBARE's priorities. This isn't necessarily one of theirs?

**Greg Lardy:** This is the #1 SBARE priority.

**Senator Wanzek:** So where do we find that in your book?

**Greg Lardy:** Page 19.

**Senator Erbele:** You're currently doing things in this area already?

**(0.52.32) Greg Lardy:** We are doing things on the periphery of this area. We have two areas, one is work we're currently conducting in soil health which has an Agribiome component, but we have no dedicated microbiologist working in that area, its soil scientists and others. The others area would be animal nutrition, which from the digestive tracts of

animals, we have a number of people working in that area, but again no dedicated microbiologists that are actively engaged in that research at the moment.

**Senator Erbele:** Any more discussion along those lines?

**Senator Wanzek:** Which priorities are we funding so far? None of the top three?

**Greg Lardy:** The only one you've touched would be the \$200,000 in general funds for the Oaks site which was part of SBARE initiative # 3.

**Senator Wanzek:** So the total looks like it adds \$690,000 with that includes the \$200,000. So we already put \$200,000 in there? He was told that on SBARE # 3, that's correct.

**Senator Wanzek:** So it will be another \$490,000 then?

**Greg Lardy:** To do the total package.

**Senator Wanzek:** How many priorities do we have?

**Greg Lardy:** There are 3 programmatic priorities that SBARE has for the experiment station.

**Senator Wanzek:** If I could ask a few questions about precision agriculture. What exactly would that program do? Or what are you looking to gain there? Someone asked me the other day about Lake Region; I understand they are involved in a lot of precision ag at their school?

**Greg Lardy:** There currently is a small grants program that we operate for precision agriculture, essentially an internal grants program that distributes approximately \$600,000 per biennium for work in precision agriculture and we encourage matching fund dollars to come to the table with those grants. This particular initiative request would allow us to expand that work but also focus on development of two what we call smart farms, one in Fargo and one in Casselton that would incorporate additional work with sensors and monitors that we could use to investigate how best to couple some of these precision agricultural systems with farm production methodologies or decision making and so helping with the management of the data and helping with decision making tools that would be beneficial for managing all the data that comes in from the smart farm concept.

**Senator Erbele:** Is there any cross over between the Agri biome and the precision ag? He was told not a great deal of cross over.

**Senator Wanzek:** If you were forced to pick two of them are we to assume that they are in the order you would want?

**Greg Lardy:** They are in ranked order based on the SBARE voting methodology that they've used to come up with their priorities.

**Senator Wanzek:** I am struggling, I like all three of them. I have to be a little responsible.

**Senator Erbele:** Currently you are asking for 2 scientists and two technicians for that 1.1M, is that correct? That was confirmed.

**Senator Erbele:** Does one scientist and a technician get you anything?

**(0.57.26) Greg Lardy:** It does. It would get us down the road with initiating the research program beginning to establish some of the work that needs to be done and allow us to focus on those critical needs.

**Senator Wanzek:** With the Agribiome, when I listen to what you're saying that's all about, it seems like that's not only for agriculture, that's for society in a sense because they're the ones requesting how do we produce food with less chemicals, less commercial inputs and things of that nature and we might lose, for instance I watch TV every night I hear about if you've been exposed to glycoside and I always yell back yeah maybe 50 gallons a day. If we lose that, people don't understand how significant that would be in impacting our farm. I don't know what we'd do if we lose that.

**Greg Lardy:** Part of the reason why it rose to the #1 ranking is exactly what you're describing, as you look at the political climate and regulatory climate, and litigation issues surrounding, whether we believe if their factual or not, surrounding some of the concerns that people have over chemical use and so on. We need to have investigations and research that allows our farmers to transition to other production methods if those chemicals are further regulated or actually removed from production systems. So this is going to allow us to be better equipped to address these concerns for North Dakota production systems.

**Senator Robinson:** What is the impact if we fund one, are we cutting it in half? He was told that was correct.

**Senator Robinson:** I'm in support of the program. The question I would have is do we approach this from a conservative perspective and fund one and go into conference or go into conference with the full thing and then reluctantly, on our knees, give up half?

**Senator Erbele:** My gut tells me we've been fairly generous going this way I think. I would be comfortable with the one and one, at \$580,000. But I'm just one vote.

**(1.00.21) Senator Wanzek:** I don't know. I sit and listen to what Dr. Lardy said. I am beginning to wonder if we don't fully fund the 1<sup>st</sup> initiative. I look at the third initiative, we've already funded a partial part of it and we restored the funding, it's looking for support for operations to offset inflationary causes. So I am thinking we'll be fortunate if we can get rid of those cuts. So in a sense I think we're addressing # 3 to some degree. And we did put the \$200,000 in. I would like to fully fund 1 and 2, but if we have to cut back, I don't know maybe that's a question to Greg again. If we had to cut back, I mean there are some things being done in precision farming and smart farming and I mean a lot of us on the farm are starting to utilize that and have some resources to go to. But when I think of the first initiative, I think that's the future. That's going to be a big, important thing going into the future.

**(1.01.38) Greg Lardy:** We do have a significant research program already established in precision ag. Our scientists were able to get nearly \$5M over 5 years and some additional USDA funding to support that program just this past fall after the SBARE initiative had been ranked. If you're looking to choose and focus, we believe we can make significant progress in the number 1 initiative with the micro Agri biome initiative and if you look at initiative #3 it provides operating support to not only the Oaks irrigation site but also all seven of our branch stations and main campus. So you look at that and it's an effort that would be significant benefits across the entire system. So if you are looking for our choices, given the large grant that our scientists recently gathered, we would say initiative 1 and initiative 3. And the precision ag is important but we've garnered some funds from other sources to really invest in that research.

**Senator Erbele:** You could also then, as I listening to all of this, the two scientists are the keys that brings in those foundation and grant dollars. We're not just talking \$1.16M, we're talking several million, because we have them in place.

**Greg Lardy:** That is correct, we have an expectation for all of our research scientists. They essentially fund their research programs through grant dollars so these two scientists over the course of their careers likely will bring in over the \$5-10M worth of grant funding or more to support their programs.

**Senator Erbele:** Through the years one of the frustrations that I've had is we've assembled the SBARE group, and they do their due diligence and prioritize everything, but if we never do anything that they bring forward, we're wasting their time.

**Senator Wanzek:** When I read in the SBARE book, it's for the two FTEs is \$355,000 salary and \$450,000 operating which is \$805,000 but the total is \$1,160,000 is that for, what are the additional dollars for?

**Greg Lardy:** The additional dollars would be the \$450,000 you mentioned, Senator Wanzek, would be dedicated to assisting them, getting their laboratory set up, purchasing the supplies they need for the first couple research projects and what we would kind of determine in the scientific community as a startup package. So we want them to be successful, they have to establish their careers so they need some general funding to start with to get those first couple research projects on the ground. When they are going after the federal grants whether its USDA or other agencies, typically those agencies are asking for what they call preliminary data so they need to show that there is some promise for the area that they're working in and so those dollars to support would initially help them generate interest.

**Senator Wanzek:** I guess what I'm saying is \$355,000 plus \$450,000, is \$805,000. Oh \$355,000 for each scientist and technician pair.

**Senator Erbele:** So we have the motion for funding two sheds at \$600,000 and taking on #1 initiative for the Agri biome to fully fund it. Do you move, Senator Robinson?

**Senator Robinson: Made the motion to fund two sheds at \$600,000 and taking on # 1 initiative for the Agri biome to fully fund it. 2<sup>nd</sup> by Senator Wanzek.**

**A Roll Call vote was taken. Yea: 3; Nay: 0; Absent: 0. (For Budget # 640, Main Research Station, Vote # 5).**

**Senator Erbele: We are adjourned.**

# 2019 SENATE STANDING COMMITTEE MINUTES

## Appropriations Committee Harvest Room, State Capitol

HB 1020  
4/5/2019  
Job # 34553

- Subcommittee  
 Conference Committee

Committee Clerk: Alice Delzer

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide for an appropriation to defray the expenses of NDUS- NDSU- Main Research Station and branch centers.

### Minutes:

Amendment 19.0208.02001

Legislative Council: Adam Mathiak  
OMB: Renae Bloms

**Chairman Holmberg** opened discussion on HB 1020.

**Senator Erbele** presented and explained amendment 19.0208.02001 – attached # 1.

**Senator Erbele** moved the amendment 19.0208.02001.

**V. Chairman Wanzek** seconded the motion.

**V. Chairman Krebsbach:** Was there any discussion on the salary inequity between the Minot and Dickinson stations?

**Senator Erbele:** that subject was not brought up to us at all. Did any committee members hear about that?

**Senator Robinson:** No, we had not heard about that. That might be something that could be a topic for conference. At a minimum, we should get some information on that. That did not come up in our discussions and we spent considerable time going through the various parts of this budget with folks at extension and research.

**V. Chairman Krebsbach:** When there was a change in the director in Minot a few years ago, part of the salary had been paid by research and part of it by extension. The extension portion of it was dropped. Now the same thing has happened in Dickinson so we've got a situation in two places where the directors are being underpaid.

**Chairman Holmberg:** The conference committee should certainly bring that up.

**V. Chairman Krebsbach:** I would hope that can happen. The same thing happened in Williston a few years ago, but somehow they made that whole and I'd like to see that happen for the other two as well.

**Senator Robinson:** That is something we should look at. The agency is struggling retaining and recruiting people and one of the reasons we elected to reinstate some of the reductions is try to make them whole, not nearly where we should but we can only go so far.

**Voice vote on amendment – carried.**

**Senator Erbele moved a Do Pass as Amended on HB 1020.  
Senator Robinson seconded the motion.**

**A Roll Call Vote Was Taken: 14 yeas, 0 nays, 0 absent.  
Motion carried.**

**Senator Erbele** will carry the bill.



1007  
4/5

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1020

Page 1, line 3, after "farm" insert "; and to provide an exemption"

Page 1, replace lines 19 through 24 with:

"Extension service	\$51,188,489	\$3,677,816	\$54,866,305
Soil conservation committee	<u>1,091,520</u>	<u>121,280</u>	<u>1,212,800</u>
Total all funds	\$52,280,009	\$3,799,096	\$56,079,105
Less estimated income	<u>26,646,689</u>	<u>1,131,470</u>	<u>27,778,159</u>
Total general fund	\$25,633,320	\$2,667,626	\$28,300,946
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 5 through 9 with:

"Northern crops institute	<u>\$3,642,721</u>	<u>\$197,306</u>	<u>\$3,840,027</u>
Total all funds	\$3,642,721	\$197,306	\$3,840,027
Less estimated income	<u>1,755,830</u>	<u>140,387</u>	<u>1,896,217</u>
Total general fund	\$1,886,891	\$56,919	\$1,943,810
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 14 through 19 with:

"Upper great plains transportation institute	<u>\$22,060,242</u>	<u>\$1,331,981</u>	<u>\$23,392,223</u>
Total all funds	\$22,060,242	\$1,331,981	\$23,392,223
Less estimated income	<u>18,617,068</u>	<u>278,826</u>	<u>18,895,894</u>
Total general fund	\$3,443,174	\$1,053,155	\$4,496,329
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 24 through 28 with:

"Main research center	<u>\$108,642,243</u>	<u>\$3,818,323</u>	<u>\$112,460,566</u>
Total all funds	\$108,642,243	\$3,818,323	\$112,460,566
Less estimated income	<u>59,084,828</u>	<u>(641,588)</u>	<u>58,443,240</u>
Total general fund	\$49,557,415	\$4,459,911	\$54,017,326
Full-time equivalent positions	336.12	7.93	344.05"

Page 3, replace lines 3 through 13 with:

"Dickinson research center	\$6,825,551	\$127,811	\$6,953,362
Central grasslands research center	3,423,624	87,201	3,510,825
Hettinger research center	4,975,133	137,270	5,112,403
Langdon research center	2,964,607	87,453	3,052,060
North central research center	4,953,652	121,418	5,075,070
Williston research center	5,118,890	167,943	5,286,833
Carrington research center	<u>9,175,491</u>	<u>510,370</u>	<u>9,685,861</u>
Total all funds	\$37,436,948	\$1,239,466	\$38,676,414
Less estimated income	<u>20,281,691</u>	<u>318,697</u>	<u>20,600,388</u>
Total general fund	\$17,155,257	\$920,769	\$18,076,026
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 18 through 20 with:

"Agronomy seed farm	<u>\$1,536,129</u>	<u>\$29,846</u>	<u>\$1,565,975</u>
Total special funds	\$1,536,129	\$29,846	\$1,565,975
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 25 through 27 with:

"Grand total general fund	\$97,676,057	\$9,158,380	\$106,834,437
Grand total other funds	<u>127,922,235</u>	<u>1,257,638</u>	<u>129,179,873</u>
Grand total all funds	\$225,598,292	\$10,416,018	\$236,014,310"

Page 4, replace lines 2 through 8 with:

"Seed cleaning plants	\$1,500,000	\$750,000
Extraordinary repairs	0	1,440,465
Junior master gardener program	15,000	0
Road and bridge asset management system	300,000	0
Two equipment storage sheds	0	600,000
Greenhouse	<u>0</u>	<u>500,000</u>
Total all funds	\$1,815,000	\$3,290,465
Total other funds	<u>1,700,000</u>	<u>1,940,465</u>
Total general fund	\$115,000	\$1,350,000"

Page 5, after line 24, insert:

**"SECTION 11. EXEMPTION - CARRINGTON RESEARCH CENTER AND NORTH CENTRAL RESEARCH CENTER.** Any amounts continued for seed cleaning plants at the Carrington research center and North Central research center pursuant to section 12 of chapter 45 of the 2017 Session Laws are not subject to the provisions of section 54-44.1-11 and any unexpended funds may be used to defray the expenses of seed cleaning plants at the Carrington research center and the North Central research center during the biennium beginning July 1, 2019, and ending June 30, 2021."

Renumber accordingly

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Transportation Institute				
Total all funds	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Less estimated income	<u>18,617,068</u>	<u>18,874,323</u>	21,571	<u>18,895,894</u>
General fund	\$3,443,174	\$3,963,406	\$532,923	\$4,496,329
FTE	43.88	43.88	0.00	43.88
Branch Research Centers				
Total all funds	\$37,436,948	\$37,336,491	\$1,339,923	\$38,676,414
Less estimated income	<u>20,281,691</u>	<u>20,741,029</u>	(140,641)	<u>20,600,388</u>
General fund	\$17,155,257	\$16,595,462	\$1,480,564	\$18,076,026
FTE	110.29	109.81	0.00	109.81
NDSU Extension Service				
Total all funds	\$52,280,009	\$54,447,194	\$1,631,911	\$56,079,105
Less estimated income	<u>26,646,689</u>	<u>27,628,956</u>	149,203	<u>27,778,159</u>
General fund	\$25,633,320	\$26,818,238	\$1,482,708	\$28,300,946
FTE	252.98	242.51	0.00	242.51

Northern Crops Institute				
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Less estimated income	1,755,830	1,892,840	3,377	1,896,217
General fund	<u>\$1,886,891</u>	<u>\$1,936,307</u>	<u>\$7,503</u>	<u>\$1,943,810</u>
FTE	11.80	12.80	0.00	12.80
Main Research Center				
Total all funds	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Less estimated income	59,084,828	59,242,367	(799,127)	58,443,240
General fund	<u>\$49,557,415</u>	<u>\$48,624,499</u>	<u>\$5,392,827</u>	<u>\$54,017,326</u>
FTE	336.12	340.05	4.00	344.05
Agronomy Seed Farm				
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Less estimated income	1,536,129	1,562,334	3,641	1,565,975
General fund	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
FTE	3.00	3.00	0.00	3.00
Bill total				
Total all funds	\$225,598,292	\$227,879,761	\$8,134,549	\$236,014,310
Less estimated income	127,922,235	129,941,849	(761,976)	129,179,873
General fund	<u>\$97,676,057</u>	<u>\$97,937,912</u>	<u>\$8,896,525</u>	<u>\$106,834,437</u>
FTE	758.07	752.05	4.00	756.05

**House Bill No. 1020 - Transportation Institute - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Upper Great Plains Trans. Institute	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Total all funds	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Less estimated income	18,617,068	18,874,323	21,571	18,895,894
General fund	<u>\$3,443,174</u>	<u>\$3,963,406</u>	<u>\$532,923</u>	<u>\$4,496,329</u>
FTE	43.88	43.88	0.00	43.88

**Department 627 - Transportation Institute - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for a Road and Bridge Study <sup>2</sup>	Total Senate Changes
Upper Great Plains Trans. Institute	\$29,494	\$525,000	\$554,494
Total all funds	\$29,494	\$525,000	\$554,494
Less estimated income	21,571	0	21,571
General fund	<u>\$7,923</u>	<u>\$525,000</u>	<u>\$532,923</u>
FTE	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Ongoing funding of \$525,000 from the general fund is added to continue the road and bridge study, for a total of \$975,000. The House added \$450,000 from the general fund.

**House Bill No. 1020 - Branch Research Centers - Senate Action**

	<b>Base Budget</b>	<b>House Version</b>	<b>Senate Changes</b>	<b>Senate Version</b>
Dickinson Research Center	\$6,825,551	\$6,673,082	\$280,280	\$6,953,362
Central Grasslands Research Center	3,423,624	3,366,743	144,082	3,510,825
Hettinger Research Center	4,975,133	4,952,233	160,170	5,112,403
Langdon Research Center	2,964,607	2,947,911	104,149	3,052,060
North Central Research Center	4,953,652	4,953,966	121,104	5,075,070
Williston Research Center	5,118,890	5,068,765	218,068	5,286,833
Carrington Research Center	9,175,491	9,373,791	312,070	9,685,861
Total all funds	\$37,436,948	\$37,336,491	\$1,339,923	\$38,676,414
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388
General fund	\$17,155,257	\$16,595,462	\$1,480,564	\$18,076,026
FTE	110.29	109.81	0.00	109.81

**Department 628 - Branch Research Centers - Detail of Senate Changes**

	<b>Adds Funding for Salary Increases<sup>1</sup></b>	<b>Adds Funding for Operating Expenses<sup>2</sup></b>	<b>Adds Funding for Oakes Irrigation Site<sup>3</sup></b>	<b>Total Senate Changes</b>
Dickinson Research Center	\$16,894	\$263,386		\$280,280
Central Grasslands Research Center	13,113	130,969		144,082
Hettinger Research Center	18,420	141,750		160,170
Langdon Research Center	10,698	93,451		104,149
North Central Research Center	17,788	103,316		121,104
Williston Research Center	19,337	198,731		218,068
Carrington Research Center	43,113	268,957		312,070
Total all funds	\$139,363	\$1,200,560	\$0	\$1,339,923
Less estimated income	59,359	0	(200,000)	(140,641)
General fund	\$80,004	\$1,200,560	\$200,000	\$1,480,564
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$1,200,560 from the general fund reduced by the House for operating expenses is restored.

<sup>3</sup> The funding source for \$200,000 added to the Carrington Research Center for the Oakes irrigation site is changed from other funds as added by the House to the general fund.

**House Bill No. 1020 - NDSU Extension Service - Senate Action**

	<b>Base Budget</b>	<b>House Version</b>	<b>Senate Changes</b>	<b>Senate Version</b>
Extension Service	\$51,188,489	\$53,355,674	\$1,510,631	\$54,866,305
Soil Conservation Committee	1,091,520	1,091,520	121,280	1,212,800
Total all funds	\$52,280,009	\$54,447,194	\$1,631,911	\$56,079,105
Less estimated income	26,646,689	27,628,956	149,203	27,778,159
General fund	\$25,633,320	\$26,818,238	\$1,482,708	\$28,300,946
FTE	252.98	242.51	0.00	242.51

**Department 630 - NDSU Extension Service - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Extension Agent Funding <sup>2</sup>	Adds Funding for Soil Conservation <sup>3</sup>	Adds One-Time Funding for Website and Digital Upgrades <sup>4</sup>	Total Senate Changes
Extension Service	\$295,631	\$870,000		\$345,000	\$1,510,631
Soil Conservation Committee			\$121,280		121,280
Total all funds	\$295,631	\$870,000	\$121,280	\$345,000	\$1,631,911
Less estimated income	149,203	0	0	0	149,203
General fund	\$146,428	\$870,000	\$121,280	\$345,000	\$1,482,708
FTE	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$870,000 from the general fund is added for providing additional state funding for the cost of county extension agents. The House did not add any funding for additional county extension agent funding.

<sup>3</sup> Funding of \$121,280 from the general fund is added for soil conservation. The House did not add funding for soil conservation.

<sup>4</sup> One-time funding of \$345,000 from the general fund is provided for website and digital upgrades. The House did not add funding for website and digital upgrades.

**House Bill No. 1020 - Northern Crops Institute - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Northern Crops Institute	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Less estimated income	1,755,830	1,892,840	3,377	1,896,217
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810
FTE	11.80	12.80	0.00	12.80

**Department 638 - Northern Crops Institute - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Senate Changes
Northern Crops Institute	\$10,880	\$10,880
Total all funds	\$10,880	\$10,880
Less estimated income	3,377	3,377
General fund	\$7,503	\$7,503
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

6-21

**House Bill No. 1020 - Main Research Center - Senate Action**

	<b>Base Budget</b>	<b>House Version</b>	<b>Senate Changes</b>	<b>Senate Version</b>
Main Research Center	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Total all funds	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Less estimated income	59,084,828	59,242,367	(799,127)	58,443,240
General fund	\$49,557,415	\$48,624,499	\$5,392,827	\$54,017,326
FTE	336.12	340.05	4.00	344.05

**Department 640 - Main Research Center - Detail of Senate Changes**

	<b>Adds Funding for Salary Increases<sup>1</sup></b>	<b>Adds FTE Positions for Agribiome Initiative<sup>2</sup></b>	<b>Adjusts Funding for Miscellaneous Expenses<sup>3</sup></b>	<b>Adjusts One-Time Funding for Williston Seed Cleaning Plant<sup>4</sup></b>	<b>Adds One-Time Funding for Two Equipment Storage Sheds<sup>5</sup></b>	<b>Adds One-Time Funding for a Williston Greenhouse<sup>6</sup></b>
Main Research Center	\$377,958	\$1,160,000	\$1,955,742		\$600,000	\$500,000
Total all funds	\$377,958	\$1,160,000	\$1,955,742	\$0	\$600,000	\$500,000
Less estimated income	200,873	0	(1,000,000)	(500,000)	0	500,000
General fund	\$177,085	\$1,160,000	\$2,955,742	\$500,000	\$600,000	\$0
FTE	0.00	4.00	0.00	0.00	0.00	0.00

	<b>Total Senate Changes</b>
Main Research Center	\$4,593,700
Total all funds	\$4,593,700
Less estimated income	(799,127)
General fund	\$5,392,827
FTE	4.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> The following FTE positions and related funding are added for the agribiome initiative:

	<b>FTE Positions</b>	<b>General Fund</b>
Scientist and technician	2.0	\$580,000
Scientist and technician	<u>2.0</u>	<u>580,000</u>
Total	4.0	\$1,160,000

<sup>3</sup> The Senate adjusted funding for miscellaneous expenses by adding \$2,955,742 from the general fund and reducing \$1,000,000 of other funds. The House reduced funding for miscellaneous expenses by \$2,955,742 from the general fund but increased funding by \$3,000,000 of other funds.

<sup>4</sup> One-time funding of \$500,000 from the general fund is added to the \$250,000 of one-time funding from the general fund added by the House for the Williston Research Center seed cleaning plant, for a total of \$750,000 from the general fund. The \$500,000 of other funds added by the House for the seed cleaning plant is removed.

<sup>5</sup> One-time funding of \$600,000 from the general fund is added for two equipment storage sheds. The House did not add funding for equipment storage sheds.

<sup>6</sup> One-time funding of \$500,000 of other funds is added for a Williston Research Center greenhouse. The House did not add funding for a Williston greenhouse.

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**House Bill No. 1020 - Agronomy Seed Farm - Senate Action**

	<b>Base Budget</b>	<b>House Version</b>	<b>Senate Changes</b>	<b>Senate Version</b>
Agronomy Seed Farm	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Less estimated income	1,536,129	1,562,334	3,641	1,565,975
General fund	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00

**Department 649 - Agronomy Seed Farm - Detail of Senate Changes**

	<b>Adds Funding for Salary Increases<sup>1</sup></b>	<b>Total Senate Changes</b>
Agronomy Seed Farm	\$3,641	\$3,641
Total all funds	\$3,641	\$3,641
Less estimated income	3,641	3,641
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

This amendment also adds a section to allow funds appropriated for the 2017-19 biennium for seed cleaning plants at the Carrington Research Center and the North Central Research Center to be continued and spent during the 2019-21 biennium.

Date: 4-4-19  
 Roll Call Vote #: 1

**2019 SENATE STANDING COMMITTEE  
 ROLL CALL VOTES  
 BILL/RESOLUTION NO. 1020**

Senate Appropriations Committee

Subcommittee

Amendment LC# or Descriptio Budget # 627 Upper Great Plains Transportation Institute (UGPTI)

- Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
 Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Wanzek Seconded By Robinson

Senators	Yes	No	Senators	Yes	No
Senator Holmberg			Senator Mathern		
Senator Krebsbach			Senator Grabinger		
Senator Wanzek	✓		Senator Robinson	✓	
Senator Erbele	✓				
Senator Poolman					
Senator Bekkedahl					
Senator G. Lee					
Senator Dever					
Senator Sorvaag					
Senator Oehlke					
Senator Hogue					

Total (Yes) 3 No 0

Absent 0

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:  
Fully fund the Road + Bridge Study for \$ 525,000



Date: 4-4-19  
 Roll Call Vote #: 2

**2019 SENATE STANDING COMMITTEE  
 ROLL CALL VOTES  
 BILL/RESOLUTION NO. 1020**

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: Budget 628 Branch Research Centers

Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar

Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Robinson Seconded By Wanzek

Senators	Yes	No	Senators	Yes	No
Senator Holmberg			Senator Mathern		
Senator Krebsbach			Senator Grabinger		
Senator Wanzek	✓		Senator Robinson	✓	
Senator Erbele	✓				
Senator Poolman					
Senator Bekkedahl					
Senator G. Lee					
Senator Dever					
Senator Sorvaag					
Senator Oehlke					
Senator Hogue					

Total (Yes) 3 No 0

Absent 0

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:

*Restore Operations to \$1,200,560 & move \$200,000 to the general fund*

Date: 4-4-19  
 Roll Call Vote #: 3

**2019 SENATE STANDING COMMITTEE  
 ROLL CALL VOTES  
 BILL/RESOLUTION NO. 1020**

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: Budget # 630 Extension Service

- Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
 Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Robinson Seconded By Wanzek

Senators	Yes	No	Senators	Yes	No
Senator Holmberg			Senator Mathern		
Senator Krebsbach			Senator Grabinger		
Senator Wanzek	✓		Senator Robinson	✓	
Senator Erbele	✓				
Senator Poolman					
Senator Bekkedahl					
Senator G. Lee					
Senator Dever					
Senator Sorvaag					
Senator Oehlke					
Senator Hogue					

Total (Yes) 3 No 0

Absent 0

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:

*\$ 870,000 for Extension operational support, \$345,000 for website & digital upgrades, and \$121,280 for Soil Conservation.*

Date: 4-4-19  
 Roll Call Vote #: 4

**2019 SENATE STANDING COMMITTEE  
 ROLL CALL VOTES  
 BILL/RESOLUTION NO. 1020**

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: Budget # 640 main research center

- Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
 Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Wanzek Seconded By Robinson

Senators	Yes	No	Senators	Yes	No
Senator Holmberg			Senator Mathern		
Senator Krebsbach			Senator Grabinger		
Senator Wanzek	✓		Senator Robinson	✓	
Senator Erbele					
Senator Poolman					
Senator Bekkedahl					
Senator G. Lee					
Senator Dever					
Senator Sorvaag					
Senator Oehlke					
Senator Hogue					

Total (Yes) 3 No 0

Absent 0

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:  
*Restore \$2.9M back for extra ordinary repairs \$500,000 Williston Greenhouse  
 \$150,000 from general funds for Williston Seed cleaning plant &  
 Exemption for carryover for Carrington Seed cleaning plant &  
 Northcentral Seed cleaning plant.*

Date: 4-4-19  
 Roll Call Vote #: 5

**2019 SENATE STANDING COMMITTEE  
 ROLL CALL VOTES  
 BILL/RESOLUTION NO. 1020**

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: Budget # 640 Main Research Center

- Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
 Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Robinson Seconded By Wanzek

Senators	Yes	No	Senators	Yes	No
Senator Holmberg			Senator Mathern		
Senator Krebsbach			Senator Grabinger		
Senator Wanzek	✓		Senator Robinson	✓	
Senator Erbele	✓				
Senator Poolman					
Senator Bekkedahl					
Senator G. Lee					
Senator Dever					
Senator Sorvaag					
Senator Oehlke					
Senator Hogue					

Total (Yes) 3 No 0

Absent 0

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:

*funding 2 storage sheds at 600,000 & taking on #1 initiative for the Agribiome to fully fund it*

Date: 4-5-19

Roll Call Vote #: 1

2019 SENATE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. 1020

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: 19.0208.02001

- Recommendation:  Adopt Amendment
- Do Pass     Do Not Pass     Without Committee Recommendation
- As Amended     Rerefer to Appropriations
- Place on Consent Calendar
- Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Erbele Seconded By Wanzek

Senators	Yes	No	Senators	Yes	No
Senator Holmberg			Senator Mathern		
Senator Krebsbach			Senator Grabinger		
Senator Wanzek			Senator Robinson		
Senator Erbele					
Senator Poolman					
Senator Bekkedahl					
Senator G. Lee					
Senator Dever					
Senator Sorvaag					
Senator Oehlke					
Senator Hogue					

Total (Yes) \_\_\_\_\_ No \_\_\_\_\_

Absent \_\_\_\_\_

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:

*Voice Vote  
Carried*

Date: 4-5-19

Roll Call Vote #: 2

2019 SENATE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. 1020

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: \_\_\_\_\_

Recommendation:  Adopt Amendment  
 Do Pass  Do Not Pass  Without Committee Recommendation  
 As Amended  Rerefer to Appropriations  
 Place on Consent Calendar  
Other Actions:  Reconsider  \_\_\_\_\_

Motion Made By Erbele Seconded By Robinson

Senators	Yes	No	Senators	Yes	No
Senator Holmberg	✓		Senator Mathern	✓	
Senator Krebsbach	✓		Senator Grabinger	✓	
Senator Wanzek	✓		Senator Robinson	✓	
Senator Erbele	✓				
Senator Poolman	✓				
Senator Bekkedahl	✓				
Senator G. Lee	✓				
Senator Dever	✓				
Senator Sorvaag	✓				
Senator Oehlke	✓				
Senator Hogue	✓				

Total (Yes) 14 No 0

Absent 0

Floor Assignment Erbele

If the vote is on an amendment, briefly indicate intent:

**REPORT OF STANDING COMMITTEE**

**HB 1020, as engrossed: Appropriations Committee (Sen. Holmberg, Chairman)** recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (14 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1020 was placed on the Sixth order on the calendar.

Page 1, line 3, after "farm" insert "; and to provide an exemption"

Page 1, replace lines 19 through 24 with:

"Extension service	\$51,188,489	\$3,677,816	\$54,866,305
Soil conservation committee	<u>1,091,520</u>	<u>121,280</u>	<u>1,212,800</u>
Total all funds	\$52,280,009	\$3,799,096	\$56,079,105
Less estimated income	<u>26,646,689</u>	<u>1,131,470</u>	<u>27,778,159</u>
Total general fund	\$25,633,320	\$2,667,626	\$28,300,946
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 5 through 9 with:

"Northern crops institute	\$3,642,721	\$197,306	\$3,840,027
Total all funds	\$3,642,721	\$197,306	\$3,840,027
Less estimated income	<u>1,755,830</u>	<u>140,387</u>	<u>1,896,217</u>
Total general fund	\$1,886,891	\$56,919	\$1,943,810
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 14 through 19 with:

"Upper great plains transportation institute	\$22,060,242	\$1,331,981	\$23,392,223
Total all funds	\$22,060,242	\$1,331,981	\$23,392,223
Less estimated income	<u>18,617,068</u>	<u>278,826</u>	<u>18,895,894</u>
Total general fund	\$3,443,174	\$1,053,155	\$4,496,329
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 24 through 28 with:

"Main research center	\$108,642,243	\$3,818,323	\$112,460,566
Total all funds	\$108,642,243	\$3,818,323	\$112,460,566
Less estimated income	<u>59,084,828</u>	<u>(641,588)</u>	<u>58,443,240</u>
Total general fund	\$49,557,415	\$4,459,911	\$54,017,326
Full-time equivalent positions	336.12	7.93	344.05"

Page 3, replace lines 3 through 13 with:

"Dickinson research center	\$6,825,551	\$127,811	\$6,953,362
Central grasslands research center	3,423,624	87,201	3,510,825
Hettinger research center	4,975,133	137,270	5,112,403
Langdon research center	2,964,607	87,453	3,052,060
North central research center	4,953,652	121,418	5,075,070
Williston research center	5,118,890	167,943	5,286,833
Carrington research center	<u>9,175,491</u>	<u>510,370</u>	<u>9,685,861</u>
Total all funds	\$37,436,948	\$1,239,466	\$38,676,414
Less estimated income	<u>20,281,691</u>	<u>318,697</u>	<u>20,600,388</u>
Total general fund	\$17,155,257	\$920,769	\$18,076,026
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 18 through 20 with:

"Agronomy seed farm	\$1,536,129	\$29,846	\$1,565,975
Total special funds	\$1,536,129	\$29,846	\$1,565,975
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 25 through 27 with:

"Grand total general fund	\$97,676,057	\$9,158,380	\$106,834,437
Grand total other funds	<u>127,922,235</u>	<u>1,257,638</u>	<u>129,179,873</u>
Grand total all funds	\$225,598,292	\$10,416,018	\$236,014,310"

Page 4, replace lines 2 through 8 with:

"Seed cleaning plants	\$1,500,000	\$750,000
Extraordinary repairs	0	1,440,465
Junior master gardener program	15,000	0
Road and bridge asset management system	300,000	0
Two equipment storage sheds	0	600,000
Greenhouse	0	<u>500,000</u>
Total all funds	\$1,815,000	\$3,290,465
Total other funds	<u>1,700,000</u>	<u>1,940,465</u>
Total general fund	\$115,000	\$1,350,000"

Page 5, after line 24, insert:

**"SECTION 11. EXEMPTION - CARRINGTON RESEARCH CENTER AND NORTH CENTRAL RESEARCH CENTER.** Any amounts continued for seed cleaning plants at the Carrington research center and North Central research center pursuant to section 12 of chapter 45 of the 2017 Session Laws are not subject to the provisions of section 54-44.1-11 and any unexpended funds may be used to defray the expenses of seed cleaning plants at the Carrington research center and the North Central research center during the biennium beginning July 1, 2019, and ending June 30, 2021."

Re-number accordingly

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Transportation Institute				
Total all funds	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Less estimated income	<u>18,617,068</u>	<u>18,874,323</u>	21,571	<u>18,895,894</u>
General fund	\$3,443,174	\$3,963,406	\$532,923	\$4,496,329
FTE	43.88	43.88	0.00	43.88
Branch Research Centers				
Total all funds	\$37,436,948	\$37,336,491	\$1,339,923	\$38,676,414
Less estimated income	<u>20,281,691</u>	<u>20,741,029</u>	(140,641)	<u>20,600,388</u>
General fund	\$17,155,257	\$16,595,462	\$1,480,564	\$18,076,026
FTE	110.29	109.81	0.00	109.81
NDSU Extension Service				
Total all funds	\$52,280,009	\$54,447,194	\$1,631,911	\$56,079,105
Less estimated income	<u>26,646,689</u>	<u>27,628,956</u>	149,203	<u>27,778,159</u>
General fund	\$25,633,320	\$26,818,238	\$1,482,708	\$28,300,946
FTE	252.98	242.51	0.00	242.51
Northern Crops Institute				
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Less estimated income	<u>1,755,830</u>	<u>1,892,840</u>	3,377	<u>1,896,217</u>
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810
FTE	11.80	12.80	0.00	12.80
Main Research Center				
Total all funds	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Less estimated income	<u>59,084,828</u>	<u>59,242,367</u>	(799,127)	<u>58,443,240</u>
General fund	\$49,557,415	\$48,624,499	\$5,392,827	\$54,017,326



FTE	336.12	340.05	4.00	344.05
Agronomy Seed Farm				
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Less estimated income	1,536,129	1,562,334	3,641	1,565,975
General fund	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00
Bill total				
Total all funds	\$225,598,292	\$227,879,761	\$8,134,549	\$236,014,310
Less estimated income	127,922,235	129,941,849	(761,976)	129,179,873
General fund	\$97,676,057	\$97,937,912	\$8,896,525	\$106,834,437
FTE	758.07	752.05	4.00	756.05

**House Bill No. 1020 - Transportation Institute - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Upper Great Plains Trans. Institute	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Total all funds	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Less estimated income	18,617,068	18,874,323	21,571	18,895,894
General fund	\$3,443,174	\$3,963,406	\$532,923	\$4,496,329
FTE	43.88	43.88	0.00	43.88

**Department 627 - Transportation Institute - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for a Road and Bridge Study <sup>2</sup>	Total Senate Changes
Upper Great Plains Trans. Institute	\$29,494	\$525,000	\$554,494
Total all funds	\$29,494	\$525,000	\$554,494
Less estimated income	21,571	0	21,571
General fund	\$7,923	\$525,000	\$532,923
FTE	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Ongoing funding of \$525,000 from the general fund is added to continue the road and bridge study, for a total of \$975,000. The House added \$450,000 from the general fund.

**House Bill No. 1020 - Branch Research Centers - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Dickinson Research Center	\$6,825,551	\$6,673,082	\$280,280	\$6,953,362
Central Grasslands Research Center	3,423,624	3,366,743	144,082	3,510,825
Hettinger Research Center	4,975,133	4,952,233	160,170	5,112,403
Langdon Research Center	2,964,607	2,947,911	104,149	3,052,060
North Central Research Center	4,953,652	4,953,966	121,104	5,075,070
Williston Research Center	5,118,890	5,068,765	5,286,833	5,286,833
Carrington Research Center	9,175,491	9,373,791	312,070	9,685,861
Total all funds	\$37,436,948	\$37,336,491	\$1,339,923	\$38,676,414
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388
General fund	\$17,155,257	\$16,595,462	\$1,480,564	\$18,076,026
FTE	110.29	109.81	0.00	109.81

**Department 628 - Branch Research Centers - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Operating Expenses <sup>2</sup>	Adds Funding for Oakes Irrigation Site <sup>3</sup>	Total Senate Changes
Dickinson Research Center	\$16,894	\$263,386		\$280,280
Central Grasslands Research Center	13,113	130,969		144,082
Hettinger Research Center	18,420	141,750		160,170
Langdon Research Center	10,698	93,451		104,149
North Central Research Center	17,788	103,316		121,104
Williston Research Center	19,337	198,731		218,068
Carrington Research Center	43,113	268,957		312,070
Total all funds	\$139,363	\$1,200,560	\$0	\$1,339,923
Less estimated income	59,359	0	(200,000)	(140,641)
General fund	\$80,004	\$1,200,560	\$200,000	\$1,480,564
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$1,200,560 from the general fund reduced by the House for operating expenses is restored.

<sup>3</sup> The funding source for \$200,000 added to the Carrington Research Center for the Oakes irrigation site is changed from other funds as added by the House to the general fund.

**House Bill No. 1020 - NDSU Extension Service - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Extension Service	\$51,188,489	\$53,355,674	\$1,510,631	\$54,866,305
Soil Conservation Committee	1,091,520	1,091,520	121,280	1,212,800
Total all funds	\$52,280,009	\$54,447,194	\$1,631,911	\$56,079,105
Less estimated income	26,646,689	27,628,956	149,203	27,778,159
General fund	\$25,633,320	\$26,818,238	\$1,482,708	\$28,300,946
FTE	252.98	242.51	0.00	242.51

**Department 630 - NDSU Extension Service - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Extension Agent Funding <sup>2</sup>	Adds Funding for Soil Conservation <sup>3</sup>	Adds One-Time Funding for Website and Digital Upgrades <sup>4</sup>	Total Senate Changes
Extension Service	\$295,631	\$870,000		\$345,000	\$1,510,631
Soil Conservation Committee			\$121,280		121,280
Total all funds	\$295,631	\$870,000	\$121,280	\$345,000	\$1,631,911
Less estimated income	149,203	0	0	0	149,203
General fund	\$146,428	\$870,000	\$121,280	\$345,000	\$1,482,708
FTE	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$870,000 from the general fund is added for providing additional state funding for the cost of county extension agents. The House did not add any funding for additional county extension agent funding.

<sup>3</sup> Funding of \$121,280 from the general fund is added for soil conservation. The House did

not add funding for soil conservation.

<sup>4</sup> One-time funding of \$345,000 from the general fund is provided for website and digital upgrades. The House did not add funding for website and digital upgrades.

**House Bill No. 1020 - Northern Crops Institute - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Northern Crops Institute	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Less estimated income	1,755,830	1,892,840	3,377	1,896,217
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810
FTE	11.80	12.80	0.00	12.80

**Department 638 - Northern Crops Institute - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Senate Changes
Northern Crops Institute	\$10,880	\$10,880
Total all funds	\$10,880	\$10,880
Less estimated income	3,377	3,377
General fund	\$7,503	\$7,503
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

**House Bill No. 1020 - Main Research Center - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Main Research Center	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Total all funds	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Less estimated income	59,084,828	59,242,367	(799,127)	58,443,240
General fund	\$49,557,415	\$48,624,499	\$5,392,827	\$54,017,326
FTE	336.12	340.05	4.00	344.05

**Department 640 - Main Research Center - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds FTE Positions for Agribiome Initiative <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Adjusts One-Time Funding for Williston Seed Cleaning Plant <sup>4</sup>	Adds One-Time Funding for Two Equipment Storage Sheds <sup>5</sup>	Adds One-Time Funding for a Williston Greenhouse <sup>6</sup>
Main Research Center	\$377,958	\$1,160,000	\$1,955,742		\$600,000	\$500,000
Total all funds	\$377,958	\$1,160,000	\$1,955,742	\$0	\$600,000	\$500,000
Less estimated income	200,873	0	(1,000,000)	(500,000)	0	500,000
General fund	\$177,085	\$1,160,000	\$2,955,742	\$500,000	\$600,000	\$0
FTE	0.00	4.00	0.00	0.00	0.00	0.00

	Total Senate Changes
Main Research Center	\$4,593,700
Total all funds	\$4,593,700
Less estimated income	(799,127)
General fund	\$5,392,827
FTE	4.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> The following FTE positions and related funding are added for the agribiome initiative:

	<u>FTE Positions</u>	<u>General Fund</u>
Scientist and technician	2.0	\$580,000
Scientist and technician	2.0	580,000
Total	4.0	\$1,160,000

<sup>3</sup> The Senate adjusted funding for miscellaneous expenses by adding \$2,955,742 from the general fund and reducing \$1,000,000 of other funds. The House reduced funding for miscellaneous expenses by \$2,955,742 from the general fund but increased funding by \$3,000,000 of other funds.

<sup>4</sup> One-time funding of \$500,000 from the general fund is added to the \$250,000 of one-time funding from the general fund added by the House for the Williston Research Center seed cleaning plant, for a total of \$750,000 from the general fund. The \$500,000 of other funds added by the House for the seed cleaning plant is removed.

<sup>5</sup> One-time funding of \$600,000 from the general fund is added for two equipment storage sheds. The House did not add funding for equipment storage sheds.

<sup>6</sup> One-time funding of \$500,000 of other funds is added for a Williston Research Center greenhouse. The House did not add funding for a Williston greenhouse.

**House Bill No. 1020 - Agronomy Seed Farm - Senate Action**

	<u>Base Budget</u>	<u>House Version</u>	<u>Senate Changes</u>	<u>Senate Version</u>
Agronomy Seed Farm	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Less estimated income	1,536,129	1,562,334	3,641	1,565,975
General fund	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00

**Department 649 - Agronomy Seed Farm - Detail of Senate Changes**

	<u>Adds Funding for Salary Increases<sup>1</sup></u>	<u>Total Senate Changes</u>
Agronomy Seed Farm	\$3,641	\$3,641
Total all funds	\$3,641	\$3,641
Less estimated income	3,641	3,641
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

This amendment also adds a section to allow funds appropriated for the 2017-19 biennium for seed cleaning plants at the Carrington Research Center and the North Central Research Center to be continued and spent during the 2019-21 biennium.

**2019 CONFERENCE COMMITTEE**

**HB 1020**

# 2019 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee – Education and Environment Division  
Roughrider Room, State Capitol

HB 1020  
4/15/2019  
34755

Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

## Minutes:

Attachments 1-6

**Chairman Representative David Monson:** Opens meeting on HB 1020 and attendance is taken. Senator Wanzek is absent due to being sick.

**Senator Robert Erbele:** I figured we would just walk through HB 1020 today and probably not make many decisions today. Begins on **page 1 of attachment 1**.

**Chairman Representative David Monson:** Why did you guys add that?

**Senator Robert Erbele:** It brings them whole.

**Representative Mike Nathe:** That is part of the Prairie Dog bill and needs to be there.

**Representative Tracy Boe:** I believe the original ask was \$975,000. We had looked at the price tags of the previous studies. To recreate the studies, the price should be decreasing.

**(3:20) Senator Larry Robinson:** The reason it was increased was because the previous studies were not 100% completed. That is why we increased that.

**Chairman Representative David Monson:** We will have to take a look at that.

**Senator Robert Erbele:** On **attachment 2**, we added \$1.2M for branch research centers to hold them even. These are research farms and our farming can take a hit on certain years, but you cannot sustain that. If we are losing key researchers with these cuts, we are losing the main idea and operation to these. This is not new money, it is just holding them even and not accepting the executive cut.

**(5:40) Chairman Representative David Monson:** We took the executive recommendation. When we get to extension, we will explain why we did not hit them hard.

**Senator Larry Robinson:** The \$1.2M is in operations.

**Senator Robert Erbele:** It is not an increase.

**Representative Tracy Boe:** The Oakes move from other funds to general funds.

**Senator Robert Erbele:** That will go to Carrington.

**Senator Larry Robinson:** Raising other funds is extremely difficult to do. If you have a project to raise for, that is one thing, but it is almost impossible to raise money for ongoing operations. There is an expectation that we should be funding those operating costs.

**(8:20) Chairman Representative David Monson:** Do we remember what the argument was for putting it in special funds?

**Representative Tracy Boe:** I do not recall the extra source. I just remember giving them the authority to spend money.

**Chairman Representative David Monson:** Were there any sections changed? You added section 11.

**Senator Robert Erbele:** That was to exempt the amount of carryover for the seed cleaning plants, so that they can carry that over in Carrington.

**Chairman Representative David Monson:** If they raise the \$1.5M for the seed cleaning and only use \$1.2M, they can roll over the \$300,000?

**Senator Robert Erbele:** No, this is for Carrington. **Page 2 of attachment 2** is section 10 for the Williston Seed Cleaning Plant. That shows up again when discussing the main one. Let's pick that one up.

**(11:45) Chairman Representative David Monson:** It looks like everything else is the same. They do not take the same amount of space.

**Alex Cronquist, LC:** That is just formatting differences. The only change made was for section 11.

**Senator Robert Erbele:** Begins on **page 1 of attachment 3**.

**(13:55) Chairman Representative David Monson:** I do not even remember talking about the website and digital upgrades.

**Mr. Cronquist:** That was in the Governor's recommendation.

**Chairman Representative David Monson:** I think we took his recommendation on a lot.

**Senator Robert Erbele:** The other sections line up.

**Chairman Representative David Monson:** Did you change anything around?

**Senator Robert Erbele:** No. **Attachment 4** is nothing different besides the salary and wage adjustments. Begins presenting **attachment 5**.

**(16:45) Representative Tracy Boe:** We had \$3M of other funds and you went to \$2M.

**Chairman Representative David Monson:** You added almost \$3M back in operations. You added 4 FTE (full time employee) too for the Agrobiome initiative.

**Senator Robert Erbele:** That was the number 1 initiative and it is for 2 scientists and 2 technicians that study the microbes and probiotics in livestock and crops. It is a micro-research that deals with the fine tuning of enhancing crop and livestock performance. It was SBARE's (State Board of Agricultural Research and Education) number 1 priority.

**Senator Larry Robinson:** The testimony received was just that. We ask the researchers to do the work and come back with recommendations and we ignore them. The agrobiome is the next level of where we need to be and that is the rationale.

**(19:30) Representative Mike Nathe:** The 4 FTE is just shy of \$300,000 for each positions, will these be long time or short time?

**Senator Robert Erbele:** We are hoping these would be long term. We need the good people there to generate grant money and fund this research. In the long run they should bring results and not cost us anything.

**Senator Larry Robinson:** Part of those dollars are setting up a new lab and getting the equipment. We had a very convincing presentation on how important this is.

**Chairman Representative David Monson:** Did they give you a breakdown on how much they need?

**Senator Robert Erbele:** They have \$355,000 for salary and fringe and \$455,000 for operating.

**Chairman Representative David Monson:** The line here only gives the addition of agrobiome. We could have them break it down or this would cause them to be very expensive scientists.

**(22:15) Senator Robert Erbele:** The Williston Seed Cleaning Plant, there was \$250,000 in general and \$500,000 in other funds. These are projects that fund raisers do not want to invest in. We made the \$500,000 general funds too. It is a number we have used before and \$750,000 in general funds and they still have to raise another \$750,000.



**Chairman Representative David Monson:** We are bit suspicious thinking they have the bulk of that raised. Not over and above, but we just think we could give them a little less.

**Senator Larry Robinson:** It is my understanding that they have been raising money, but it is in a holding pattern because they are waiting on the state's commitment on this. They can wrap this up and move it forward. It is a very heavily used plant.

**(25:15) Senator Robert Erbele:** The next item is \$600,000 for storage sheds. They wanted \$300,000 for the 8 sites that would be used to keep the equipment safe. We elected to just line 2 places for \$300,000 apiece and they would have to prioritize. The other \$500,000 in special funds are for the Williston Green House. They assured they can raise this and we addressed concerns of maintenance and operating costs and they said they are close to natural gas that can be used as a heat source, so there would be synergy there.

**Representative Tracy Boe:** That was the whole thing on the special funds for the green house. If we put \$750,000 and all of a sudden \$500,000 appears to do the green house, that is our suspicions.

**Senator Larry Robinson:** The issue you will find is that a project like the green house will be supported by people who do not support the seed cleaner. The donors are usually pretty specific and there are usually strings attached.

**Chairman Representative David Monson:** The green house is probably an optional thing. There can be a lot of value in green houses, but they cost a bundle to operate. We can discuss this more, but we were not very hot on the green house. I am in favor of the seed cleaner and we think they probably already have that full amount. As far as the green house, we may have a problem with that.

**(29:55) Senator Robert Erbele:** The only thing different with **attachment 6** is the salary and wages.

**Chairman Representative David Monson:** We had people in the full committee that could agree with extension taking a hit, but we could not live with cutting them much.

**Senator Robert Erbele:** I do not know how to address it because it came up to us after we had finished this, but there is a disparity of salaries between research and extension. It was raised to me afterwards, are you familiar with that?

**Chairman Representative David Monson:** We did not hear about it. Someone was caught behind the rail and told us there was a problem. I am not sure what that problem is exactly and it is not in front of us. I would like more information on that. We can discuss it.

**Senator Larry Robinson:** The director of Dickinson is taking care of another area. There was a change in funding source that created in-equities in Minot.

**(33:00) Chairman Representative David Monson:** So you would take it out of one and move it to another? We will discuss. Closes meeting on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee – Education and Environment Division  
Roughrider Room, State Capitol

HB 1020  
4/18/2019  
34833

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

## Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

## Minutes:

**Chairman Representative David Monson:** Opens meeting on HB 1020 and attendance is taken. We will kind of go over the Senate's changes today and discuss some of the differences. We are viewing a lot of this research and extension as very positive for the public and private agriculture sectors. Could we steal them from the Department of Transportation? We are trying to find ways to save general fund money.

**Senator Terry Wanzek:** I am going to start a list. Your question is where can we find funds other than all general funds?

**Chairman Representative David Monson:** Correct. We realize the study needs to be done. The fact that we funded a study 2 years ago and thought some could be duplicated.

**Representative Tracy Boe:** Our thought was that we spent \$719,000 in 2015-2017 to do this study and there were things we did not have to recreate a second time and that is how we came up with \$450,000.

**Chairman Representative David Monson:** That is all we have for Upper Great Plains.

**Representative Mike Nathe:** How much are we looking for?

**Chairman Representative David Monson:** Around \$525,000.

**(5:35) Senator Robert Erbele:** In regards to the \$525,000, would you be willing to do part general and part special funds?

**Chairman Representative David Monson:** Yes, we would look at any blend. We are not set on anything. We know the study has to be done, just want to find efficiencies. The Williston Seed Cleaning Plant needs to be addressed. Two years ago we let them go out and raise funds. As far as we can determine, they have probably done better than Minot and Carrington in a shorter time. The seed plant has pledges and cash for part of it. Some of it is contingent on us giving them \$750,000 and authority for \$1.5M. It will cost more if it drags on. We thought we had a great idea for a used color sorter that they want new, but they want something newer.

**Senator Robert Erbele:** The total would be \$2.2M and the \$1.5M is what they are hoping to raise?

**(9:00) Chairman Representative David Monson:** Their requirement is to get \$750,000 from the state.

**Senator Robert Erbele:** They would need to raise another \$750,000?

**Chairman Representative David Monson:** They have \$713,000 and if we give them the \$750,000, they will almost be there. We originally put \$250,000 and you put \$500,000.

**Senator Larry Robinson:** We discussed this on our side and that we should support Williston at the same level as Minot and Carrington and get it done to move on. The system they have now is very outdated and we want to get this plan together and move on. I would like the full \$750,000.

**Chairman Representative David Monson:** If we can find some money and add one-time for storage sheds at \$600,000. If we could take some out of that and put it into the seed cleaning plants. I know you want new machinery protected. We do not know the whole story on their equipment storage. A \$300,000 shed is pretty expensive and fancy. I spent way under \$100,000 for a very large shed.

**Senator Robert Erbele:** In the private sector we can do those things for a lot less and they have to factor in engineering fees and other commercial fees.

**Chairman Representative David Monson:** That was another annoying concern of ours.

**(13:00) Representative Mike Nathe:** You hit on the \$600,000 I was looking at. We could do some of that for the study and some for the seed cleaning plant. Could I get more background on the equipment sheds and their priority?

**Chairman Representative David Monson:** Is the seed cleaning plant a higher priority than the storage shed?

**Senator Robert Erbele:** The request was for 8 storage sheds and we gave less money and let them prioritize for 2 sheds.

**Chairman Representative David Monson:** The newer electronic stuff does not fare well in the weather.

**Senator Larry Robinson:** One thing we have not done a good job of is getting out to these research facilities. There has not been a legislative group tour Hettinger since 1995 and that is something we should talk about doing more during the interim. It would be nice to know what they have and see it for ourselves.

**Chairman Representative David Monson:** I have been to most of the campuses in the last 6 years. It is very important to get there.

**Representative Mike Nathe:** You are right, this is all good stuff and we need to prioritize things between the study, sheds and cleaning plant.

**(18:05) Chairman Representative David Monson:** They were below the seed cleaning plant.

**Senator Terry Wanzek:** I used to trust the other Senators on this go around. I am not quite confident yet to make concessions, but I am making a list. It would be nice to do some more research on the shed costs. I would agree because we built a fancy, heated shop that was very large around 5 years ago for around that \$300,000. We put up the storage hoop buildings and those are a lot less expensive and are fine for cold storage.

**Chairman Representative David Monson:** How do those hold up in the ND winters?

**Senator Terry Wanzek:** They hold up really well.

**Chairman Representative David Monson:** I think they should trim them down in size or quality.

**Senator Robert Erbele:** Another question that could be asked is if they are cold storage or a working shop as well.

**Chairman Representative David Monson:** That is something they need to find out.

**Representative Mike Nathe:** What are they doing for storage now?

**Chairman Representative David Monson:** There must be shops right now that they can use. Let's get a bit more information. I would like to see the seed cleaner get finished and the study too. We have spent half a billion dollars on the prairie dog bill.

**(22:10) Senator Larry Robinson:** Can we take the seed cleaning plant off the list?

**Chairman Representative David Monson:** I want to see it done.

**Senator Terry Wanzek:** I think I heard you say something about trading storage sheds for the seed cleaner?

**Chairman Representative David Monson:** Not quite just yet. Closes meeting on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
4/22/2019  
34881

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachment 1

**Chairman Representative David Monson:** Opens meeting on HB 1020 and attendance is taken. We created a list of things we can live with and a few things we could over. There was talk of getting Harris Hall into the funding. We need a lot of cash to make the cut for this and we may have gone over and found a few things we can do. **Attachment 1** is the list we talked about.

**Danielle Foster, LC:** Begins to outline **attachment 1** starting on item 1.

**Chairman Representative David Monson:** That would still provide \$875,000 for the road and bridge study. That would only be a \$100,000 cut and we figured that would be a good compromise because the study is still pretty recent.

**Ms. Foster:** Item 2 would reduce \$257,000 of general funds from travel budgets and miscellaneous costs.

**(4:00) Chairman Representative David Monson:** How much would be left in there?

**Alex Cronquist, LC:** The House reduced it \$1.2M and the Senate restored that for a net of about \$900,000 increase.

**Ms. Foster:** Item 3 adjusts funding for the Oakes Site and makes it \$200,000 in special funds.

**Chairman Representative David Monson:** We like the idea that they have Oakes there, but we wanted to give them authority to come up with the money to pay for these. We would like to return to the House version where they raise the money from commodity groups.

**(6:00) Ms. Foster:** Item 4 decreases \$870,000 for county extension agents.

**Chairman Representative David Monson:** We did not have any of that in here. The counties are funded at 60-40. We adjusted this last session and if we can live with it one more time, they will still be seeing money from the Prairie Dog bill. It would be supplemental money. If they can get by for another 2 years, we could address it then and it would free up about \$1M there.

**Ms. Foster:** Item 5 removes \$121,000 in general funds for the increase in soil conservation grants.

**Mr. Cronquist:** That would restore them to the base level.

**Chairman Representative David Monson:** That is what the Senate added and they can tighten their belt or charge more, they can balance that out. These grants go out to the counties for soil conservation. Item 6 removes \$345,000 for website and digital upgrades. We took this out and this would provide a 2017-2019 appropriation from the general fund. They do not have the worst websites, but maybe they can find something in the budget for that.

**Mr. Cronquist:** The funding is still provided for that, but it would be in this biennium.

**(10:35) Representative Mike Nathe:** The \$345,000 is to make it more mobile device friendly.

**Senator Terry Wanzek:** Is that a proposal being made or was it already ready? I am told the \$345,000 will be in this biennium?

**Chairman Representative David Monson:** We can take it out of this year's stabilization fund.

**Senator Terry Wanzek:** I run our farm with 2 millennials that are using their phone very often, so we are using the mobile devices way more.

**Representative Tracy Boe:** I agree with the Senator on that and I think the money is important. The way we have this structured is that we can use it a different way and help achieve our goal.

**(13:05) Chairman Representative David Monson:** Item 7 takes out about \$3M for the proposed base level cut that was originally proposed in the House version. We gave the authority to try and gather special funds, which may not even be likely. It frees up \$3M that could be used and restores their special fund abilities. That is the big pill to swallow. Item 8 removes funding for the equipment storage sheds. There is over \$8M sitting outside in the elements. I would hope they can put the most delicate inside where it is safe. I built a very large shed for less than \$50,000, but I know an engineered building will be different. Item 9 removes money for the greenhouse, but leaves the funding for the seed plant. The greenhouse is expensive and maintenance costs a lot of money. If they really need it, they can make their case the next time around. That is all of the proposal outlined on **attachment 1**.

**Senator Robert Erbele:** You did leave the money for the seed cleaning plant and the agri biome?

**Chairman Representative David Monson:** Correct.

**Senator Robert Erbele:** This is our first look at it and we would like a chance to discuss this. My first impressions are my own opinion. Item 1 is something I may not agree with, but we can look at them. Items 2 and 7 for the branch and main research; I feel very strong about keeping them where they were originally because we cut them severely last time. They would be about \$11M in decreases over the last few sessions. Item 2 is still a large cut that would cause serious consideration on what projects will have to be left on the table. The Oakes project is another one and special funds always sound nice, but it is hard to reach. It is a part of SBARE (State Board of Agricultural Research and Extension) number 3 initiative. I would be opposed to the county agent cut because it was very hard for them to gather the money for this last time around. You mentioned the Prairie Dog money, but those buckets are not filled yet anyways and there will not be anything until January of 2021. Once they start getting those dollars, they can shift it around, but they will not have it in this period. The Soil conservation grants are up for discussion. If \$345,000 can be used this biennium, it is not a big deal. The \$3M is basically just to hold even and it is another large cut added onto last time's. The \$600,000 for equipment sheds is a priority to maybe get something built, but we can discuss that. I do not know the hang-up on the greenhouse. The crops they encounter out west is not what happens in the rest of the state. The oil companies also have interest in those because they can do year round studies. They do not feel the maintenance is an issue because once it is up and running, the oil companies can help support the maintenance. I do not think there is a heroic budget saving method by allowing for special funds.

**(24:10) Chairman Representative David Monson:** What kind of experiments are they talking about?

**Senator Robert Erbele:** They were shared, but not in great detail. I would assume it would be environmental work and reclamation work.

**Chairman Representative David Monson:** We put a lot of time and work into the Fargo greenhouse, but I think they can do their research there even though it is distant. There is a lot of upkeep and cost that goes into this. I was hoping we could come to something close to this so we could report to the people who are working on Harris Hall to give money on that.

**Senator Terry Wanzek:** This is my first time on this budget, but we cut them very significantly last time around 15%. We are cutting them again and I have to get a grasp on that and make sure we are not cutting into research. I want to make sure we are not cutting so far into this that we are hitting bone.

**(27:20) Chairman Representative David Monson:** We did cut both research and extension, but we wanted to hold extension even this time because it took the larger of the cuts. We need to come up with some bucks if we want to get this project done. Extension does some experiments and I did not realize that. Closes meeting on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
4/23/2019  
34942

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

**Chairman Representative David Monson:** Opens meeting on HB 1020 and attendance is taken.

**Senator Robert Erbele:** Your proposed decrease to the study of \$100,000 will be accepted. We are not prepared to reduce the Research centers, Oakes or the counties. The soil conservation cut of \$121,000 is accepted. We need some elaboration on the \$345,000 cut that would come out of this biennium's money. Does that count towards the deductions today?

**Chairman Representative David Monson:** It would be out of the next biennium, so it would save the money. The answer is yes.

**Danielle Foster, LC:** It would come out of the stabilization fund.

**Senator Robert Erbele:** Then we get credit for the \$345,000 cut. We would accept the storage shed cuts of \$600,000 and I guess item 7 is laid out and flows through the entire budget and pays for scientists and work and salaries and not just gas. We feel it is a vitally important item and that removed would damage some vital projects. We do not arrive at the final product the first go around in research. That brings us to around \$1M in cuts. I did visit some with the people from NDSU and there is a line item within the SIIF (Strategic Investment and Improvement Fund) funds for deferred maintenance of \$1.4M. They expressed a willingness to cut \$500,000 and that would bring us to a \$1.66M reduction.

**(5:35) Chairman Representative David Monson:** We have overspent SIIF.



**Senator Robert Erbele:** That would restore \$500,000 to SIIF and that is from the deferred maintenance line. This would bring us to that \$1.66M reduction. If we want to bring up the greenhouse subject, we would entertain legislative intent that no state funds would be used for operations or maintenance.

**Chairman Representative David Monson:** What did you come up with?

**Senator Robert Erbele:** The \$345,000 cut would bring about that \$1.66M cut.

**Chairman Representative David Monson:** That is a start, but we have to keep moving a little. Could we do \$100,000 in special funds and \$100,000 in general for Oakes? Commodity groups that want to see experimenting done can pay some and it may not even cost \$200,000. I understand the water is coming from Garrison Diversion. They are building something, if I understand it correctly. That is not included in here, but they are doing the water, I understand. What if we did county extension agents at half; we go from 60-40 to 55-45 with the intent of moving to 50-50 again?

**(10:30) Senator Robert Erbele:** I think that would be breaking our promise from last session.

**Chairman Representative David Monson:** Is that in writing?

**Senator Robert Erbele:** I will have to check the writing on that.

**Chairman Representative David Monson:** I would like to see that. Item 2 reduces funding for branch research centers. Minot and Dickinson had half of the director's salary each and those two people retired a couple of years ago. They have since rehired new people at quite a bit lower salaries. They are paying more than they did before technically. What if we took money from extension and gave it to those two to make up the difference for those two. I calculated it for about \$50,000 to Dickinson and Minot for a total of \$100,000. That is just a round number.

**Senator Robert Erbele:** Which line would that be?

**Chairman Representative David Monson:** That would be salaries.

**Senator Robert Erbele:** You are aware of the circumstances of why it was that with extension tied to federal retirement.

**Chairman Representative David Monson:** This would be a permanent move, but I do not know if it is fair. We kept extension whole even though we whacked them pretty good last time. I did not want to touch extension, but if we can tap them to the tune of \$100,000, I do not think it will break them. Where should we take this from?

**(14:40) Representative Mike Nathe:** What about miscellaneous expense?

**Chairman Representative David Monson:** We gave them \$100,000 in the House version. We could take that and give \$50,000 to each Dickinson and Minot.

**Representative Mike Nathe:** We had given extension \$100,000 total.

**Senator Robert Erbele:** Do you remember the discussions on why that was brought in?

**Chairman Representative David Monson:** That was \$100,000 for 4-H. I can give up some of my pets too.

**(17:00) Senator Robert Erbele:** I would need to do some visiting about Oakes and I am not sure about extension cuts.

**Senator Terry Wanzek:** The Garrison Diversion has provided some for this, but with the economic downturn, they have presented that it is more of a state project and they should not be counted on at all times to fund that.

**Chairman Representative David Monson:** Some of the SBARE (State Board of Agricultural Research and Education) priorities show that a commodity group will rise to the surface and take over responsibility for their favorites. I am looking to get Harris Hall money on the list.

**Senator Robert Erbele:** Harris Hall is not tied to this.

**Chairman Representative David Monson:** It is not, but I am told that we have to come up with dollars.

**Senator Larry Robinson:** I support what the Senate has proposed for reductions. Are we scheduled to meet again today?

**Chairman Representative David Monson:** No, but we maybe could.

**Senator Larry Robinson:** We may be called into floor session at 4:30. We could do 5:00 or 5:30.

**Chairman Representative David Monson:** We have to start something here.

**(21:20) Senator Terry Wanzek:** I look at what we have done during the last sessions and I see us cutting on top of those cuts. This is agriculture research that returns money to the state and not an expense, so I do not know why we would want to cut this.

**Chairman Representative David Monson:** Higher education took even bigger cuts, but in the name of efficiency. When you do not have money, you make things work. They have good administrators that figure things out. We have to come up with more than \$1.66M and some of that is nothing more than shuffling it around.

**(22:55) Chairman Representative David Monson:** Closes meeting on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
4/24/2019  
34980

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachment 1

**Chairman Representative David Monson:** Opens meeting on HB 1020 and attendance is taken.

**Senator Robert Erbele:** I think I have done what I am going to do. I know we talked a bit about a few things and we should get some in for the Williston Greenhouse that they would pay for maintenance and operations with their grant money. I would like to move forward with that.

**Chairman Representative David Monson:** I think we have the language needed for that. Authorization was given, but no state funds and nothing into the base.

**Alex Cronquist, LC:** There would be one-time special funds of \$500,000 and legislative intent for the future.

**(2:25) Chairman Representative David Monson:** I looked through the green sheets to find some historical information and even by restoring them, they are still being cut from 2013. We are coming out of the slump. I have to thank Senator Terry Wanzek because he found big money in another budget that helps us out in here. We still have a couple little issues, but you identified a cut of \$1.66M. Will you breeze through that?

**Senator Robert Erbele:** There was one item on **attachment 1** involving Oakes as \$100,000 of general and \$100,000 in special.

**Chairman Representative David Monson:** We have never funded that before.

**Senator Robert Erbele:** I was just saying that it was not specifically agreed upon and it made **attachment 1**. The other items are \$100,000 for Upper Great Plains Transportation. We talked about pulling \$500,000 out of deferred maintenance.

**Chairman Representative David Monson:** That is how you arrived at the \$1.66M. That line was \$1.4M and change and we are taking that down to \$944,000 and that would be SIIF (Strategic Investment and Improvement Fund) money. The \$500,000 would go back into SIIF. Then I had \$200,000 on my notes here and I was not sure, but it is salary increases.

**Senator Robert Erbele:** That must have been the Minot and Dickinson salary increases for the directors.

**Senator Larry Robinson:** I think we suggested yesterday that it be given as \$50,000 each.

**(8:10) Chairman Representative David Monson:** We had \$473,000 and you had higher for extension. You put in \$250,000 more than we had for extension. Will you split the difference at \$125,000 for the salary increase of NDSU extension service all the way up to \$598,000 with the intention of that \$125,000 going between Minot and Dickinson and moved from extension to branch research.

**Senator Larry Robinson:** Let's do that.

**Mr. Cronquist:** Reduce funding for extension by \$125,000 and increase it for Minot and Dickinson by \$62,500 each?

**Chairman Representative David Monson:** Correct. Remove the increase for county extension agents at \$870,000 for property tax relief. This was not a promise made by the legislature, it was made by a guy who is no longer here to do that and we are bailing them out. It is not the county's fault or anyone's here.

**Senator Robert Erbele:** SBARE (State Board of Agricultural Research and Education) was a part of the deal.

**Chairman Representative David Monson:** We are willing to give them that and keep them whole. You can thank Senator Terry Wanzek for that one. Northern Crops Institute is done too. Anything else?

**(12:50) Senator Robert Erbele:** Item 2 of **attachment 1** is still a proposed cut for branch research of \$257,000.

**Chairman Representative David Monson:** We will let you have this. We are caving on these here.

**Senator Terry Wanzek:** If we are ready to close a deal, I do not want to prolong it. We are talking about these and I will keep my comments to myself then. Are we leaving Oakes as \$200,000 in general funds?

**Chairman Representative David Monson:** You have to give me \$100,000 on the next one then.

**(15:25) Senator Terry Wanzek:** We have to be a little careful with the dough and we are pretty much holding even on these budgets and giving salary increases, so we are not really giving up the farm here on this.

**Chairman Representative David Monson:** We will leave it in here. The green print items on **attachment 1** and what we have agreed on are okay. We are putting a line through items 2 and 7 and adding \$125,000 with some language tweaks on the green house.

**Senator Robert Erbele:** The only cuts are the green house from SIIF proposal.

**Chairman Representative David Monson:** I do not even know what this comes to.

**Mr. Cronquist:** It is about \$1.16M. If you include the \$500,000 from SIIF, then it is \$1.66M.

**Chairman Representative David Monson:** I have notes of \$500,000 from section 4. That is the SIIF money, so that is covered. The other sections look pretty good.

**(19:55) Chairman Representative David Monson:** Closes meeting on HB 1020.

# 2019 HOUSE STANDING COMMITTEE MINUTES

## Appropriations Committee – Education and Environment Division Roughrider Room, State Capitol

HB 1020  
4/25/2019  
34997

- Subcommittee  
 Conference Committee

Committee Clerk: Parker Oswald

### Explanation or reason for introduction of bill/resolution:

A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.

### Minutes:

Attachment 1

**Chairman Representative David Monson:** Opens meeting on HB 1020 and attendance is taken. All we are meeting for is to double check that everything is exactly how we want it. Did you guys all get **attachment 1**? We are working on the sheet that the Senate recedes and amends. We gave you \$7.7M in this budget and you gave up \$1.66M in total, so do not complain here. I will have a hard time explaining this on the floor. We have looked this over and okayed them. Do we need to go over the amendment?

**Alex Cronquist, LC:** I will go through it quick. We will talk about the other sections. The first is the seed cleaning plant carryover to finish those projects. The next is legislative intent for the green house. Section 13 is the 2017-2019 appropriation for the upgrade of software.

**(3:35) Senator Robert Erbele:** Is the intent for them to raise the funds somewhere else or do we need that language?

**Chairman Representative David Monson:** That is authorization to build it and raise funds.

**Mr. Cronquist:** Section 14 is the emergency clause. The Upper Great Plains Transportation Institute includes the salary increase and the \$875,000 for the study. The first change was the compensation changes for branch research. The next was for \$125,000 in adjusted director salaries. The next is \$1.2M in operating that was restored by the Senate. The last for that was the adjusted funding for Oakes of \$200,000. The extension service has the salary and wage increase. The last extension change is the \$870,000 for the county agent agreement. One change that was not included was the \$121,000 for soil conservation.

**(7:00) Chairman Representative David Monson:** They receded on that.

**Mr. Cronquist:** The main research center adjustments include the salary increase, agrobiome initiative, adjusting miscellaneous funding and the Senate restored the decrease of \$2.95M. The next is the one-time funding for Williston seed cleaning. The conference committee took \$750,000 from general fund on that one. There is \$500,000 of other funds for the green house and legislative intent for maintenance. There was \$1.44M from SIIF (Strategic Investment and Improvement Fund) for extraordinary repairs and that was reduced by \$500,000 from SIIF. Another change was \$600,000 for storage sheds and that was removed. The last one is the seed farm and the only change was the salary increase.

**Motion to recede Senate amendments and further amend made by Senator Larry Robinson seconded by Representative Mike Nathe.**

**Roll call vote is taken, motion carries with 6 yeas, 0 nays and 0 absent.**

**Chairman Representative David Monson:** Closes meeting on HB 1020.

*ONE*  
*4/25/19*  
*1218*

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1020

That the Senate recede from its amendments as printed on pages 1558-1563 of the House Journal and pages 1325-1331 of the Senate Journal and that Engrossed House Bill No. 1020 be amended as follows:

Page 1, line 3, after "farm" insert "; to provide for a report; to provide a statement of legislative intent; to provide an exemption; and to declare an emergency"

Page 1, replace lines 19 through 24 with:

"Extension service	\$51,188,489	\$3,207,816	\$54,396,305
Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
Total all funds	\$52,280,009	\$3,207,816	\$55,487,825
Less estimated income	<u>26,646,689</u>	<u>1,131,470</u>	<u>27,778,159</u>
Total general fund	\$25,633,320	\$2,076,346	\$27,709,666
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 5 through 9 with:

"Northern crops institute	<u>\$3,642,721</u>	<u>\$197,306</u>	<u>\$3,840,027</u>
Total all funds	\$3,642,721	\$197,306	\$3,840,027
Less estimated income	<u>1,755,830</u>	<u>140,387</u>	<u>1,896,217</u>
Total general fund	\$1,886,891	\$56,919	\$1,943,810
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 14 through 19 with:

"Upper great plains transportation institute	<u>\$22,060,242</u>	<u>\$1,231,981</u>	<u>\$23,292,223</u>
Total all funds	\$22,060,242	\$1,231,981	\$23,292,223
Less estimated income	<u>18,617,068</u>	<u>278,826</u>	<u>18,895,894</u>
Total general fund	\$3,443,174	\$953,155	\$4,396,329
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 24 through 28 with:

"Main research center	<u>\$108,642,243</u>	<u>\$2,718,323</u>	<u>\$111,360,566</u>
Total all funds	\$108,642,243	\$2,718,323	\$111,360,566
Less estimated income	<u>59,084,828</u>	<u>(1,141,588)</u>	<u>57,943,240</u>
Total general fund	\$49,557,415	\$3,859,911	\$53,417,326
Full-time equivalent positions	336.12	7.93	344.05"

Page 3, replace lines 3 through 13 with:

"Dickinson research center	\$6,825,551	\$190,311	\$7,015,862
Central grasslands research center	3,423,624	87,201	3,510,825
Hettinger research center	4,975,133	137,270	5,112,403
Langdon research center	2,964,607	87,453	3,052,060
North central research center	4,953,652	183,918	5,137,570
Williston research center	5,118,890	167,943	5,286,833
Carrington research center	<u>9,175,491</u>	<u>510,370</u>	<u>9,685,861</u>





Total all funds	\$37,436,948	\$1,364,466	\$38,801,414
Less estimated income	<u>20,281,691</u>	<u>318,697</u>	<u>20,600,388</u>
Total general fund	\$17,155,257	\$1,045,769	\$18,201,026
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 18 through 20 with:

"Agronomy seed farm	<u>\$1,536,129</u>	<u>\$29,846</u>	<u>\$1,565,975</u>
Total special funds	\$1,536,129	\$29,846	\$1,565,975
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 25 through 27 with:

"Grand total general fund	\$97,676,057	\$7,992,100	\$105,668,157
Grand total other funds	<u>127,922,235</u>	<u>757,638</u>	<u>128,679,873</u>
Grand total all funds	\$225,598,292	\$8,749,738	\$234,348,030"

Page 3, line 28, after "**FUNDING**" insert "**- EFFECT ON BASE BUDGET - REPORT TO SIXTY-SEVENTH LEGISLATIVE ASSEMBLY**"

Page 4, replace lines 2 through 8 with:

"Seed cleaning plants	\$1,500,000	\$750,000
Extraordinary repairs	0	940,465
Junior master gardener program	15,000	0
Road and bridge asset management system	300,000	0
Greenhouse	0	500,000
Total all funds	\$1,815,000	\$2,190,465
Total other funds	<u>1,700,000</u>	<u>1,440,465</u>
Total general fund	\$115,000	\$750,000"

Page 4, line 23, replace "\$1,440,465" with "\$940,465"

Page 5, after line 24, insert:

**"SECTION 11. EXEMPTION - CARRINGTON RESEARCH CENTER AND NORTH CENTRAL RESEARCH CENTER.** Any amounts continued for seed cleaning plants at the Carrington research center and North Central research center pursuant to section 12 of chapter 45 of the 2017 Session Laws are not subject to the provisions of section 54-44.1-11 and any unexpended funds may be used to defray the expenses of seed cleaning plants at the Carrington research center and the North Central research center during the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 12. LEGISLATIVE INTENT - WILLISTON RESEARCH CENTER GREENHOUSE.** It is the intent of the sixty-sixth legislative assembly that any future operations and maintenance expenses relating to the Williston research center greenhouse be paid from other funds.

**SECTION 13. APPROPRIATION - 2017-19 BIENNIUM - WEBSITE AND DIGITAL UPGRADES.** There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$345,000, or so much of the sum as may be necessary, to the North Dakota state university extension service for website and digital upgrades, for the period beginning with the effective date of this Act, and ending June 30, 2019. In accordance with section 11 of chapter 45 of the 2017 Session Laws any unexpended funds from this appropriation may be continued into the biennium beginning July 1, 2019, and ending June 30, 2021.

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**SECTION 14. EMERGENCY.** Section 13 of this Act is declared to be an emergency measure."

Renumber accordingly

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
<b>Transportation Institute</b>						
Total all funds	\$22,060,242	\$22,837,729	\$454,494	\$23,292,223	\$23,392,223	(\$100,000)
Less estimated income	18,617,068	18,874,323	21,571	18,895,894	18,895,894	0
General fund	\$3,443,174	\$3,963,406	\$432,923	\$4,396,329	\$4,496,329	(\$100,000)
FTE	43.88	43.88	0.00	43.88	43.88	0.00
<b>Branch Research Centers</b>						
Total all funds	\$37,436,948	\$37,336,491	\$1,464,923	\$38,801,414	\$38,676,414	\$125,000
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388	20,600,388	0
General fund	\$17,155,257	\$16,595,462	\$1,605,564	\$18,201,026	\$18,076,026	\$125,000
FTE	110.29	109.81	0.00	109.81	109.81	0.00
<b>NDSU Extension Service</b>						
Total all funds	\$52,280,009	\$54,447,194	\$1,040,631	\$55,487,825	\$56,079,105	(\$591,280)
Less estimated income	26,646,689	27,628,956	149,203	27,778,159	27,778,159	0
General fund	\$25,633,320	\$26,818,238	\$891,428	\$27,709,666	\$28,300,946	(\$591,280)
FTE	252.98	242.51	0.00	242.51	242.51	0.00
<b>Northern Crops Institute</b>						
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027	\$3,840,027	\$0
Less estimated income	1,755,830	1,892,840	3,377	1,896,217	1,896,217	0
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810	\$1,943,810	\$0
FTE	11.80	12.80	0.00	12.80	12.80	0.00
<b>Main Research Center</b>						
Total all funds	\$108,642,243	\$107,866,866	\$3,493,700	\$111,360,566	\$112,460,566	(\$1,100,000)
Less estimated income	59,084,828	59,242,367	(1,299,127)	57,943,240	58,443,240	(500,000)
General fund	\$49,557,415	\$48,624,499	\$4,792,827	\$53,417,326	\$54,017,326	(\$600,000)
FTE	336.12	340.05	4.00	344.05	344.05	0.00
<b>Agronomy Seed Farm</b>						
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975	\$1,565,975	\$0
Less estimated income	1,536,129	1,562,334	3,641	1,565,975	1,565,975	0
General fund	\$0	\$0	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00	3.00	0.00
<b>Bill total</b>						
Total all funds	\$225,598,292	\$227,879,761	\$6,468,269	\$234,348,030	\$236,014,310	(\$1,666,280)
Less estimated income	127,922,235	129,941,849	(1,261,976)	128,679,873	129,179,873	(500,000)
General fund	\$97,676,057	\$97,937,912	\$7,730,245	\$105,668,157	\$106,834,437	(\$1,166,280)
FTE	758.07	752.05	4.00	756.05	756.05	0.00

10/20

**House Bill No. 1020 - Transportation Institute - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Upper Great Plains Trans. Institute	\$22,060,242	\$22,837,729	\$454,494	\$23,292,223	\$23,392,223	(\$100,000)
Total all funds	\$22,060,242	\$22,837,729	\$454,494	\$23,292,223	\$23,392,223	(\$100,000)
Less estimated income	18,617,068	18,874,323	21,571	18,895,894	18,895,894	0
General fund	\$3,443,174	\$3,963,406	\$432,923	\$4,396,329	\$4,496,329	(\$100,000)
FTE	43.88	43.88	0.00	43.88	43.88	0.00

**Department 627 - Transportation Institute - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for a Road and Bridge Study <sup>2</sup>	Total Conference Committee Changes
Upper Great Plains Trans. Institute	\$29,494	\$425,000	\$454,494
Total all funds	\$29,494	\$425,000	\$454,494
Less estimated income	21,571	0	21,571
General fund	\$7,923	\$425,000	\$432,923
FTE	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Ongoing funding of \$425,000 from the general fund is added to continue the road and bridge study, for a total of \$875,000. The Senate provided \$975,000 and the House provided \$450,000 from the general fund for the study.

**House Bill No. 1020 - Branch Research Centers - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Dickinson Research Center	\$6,825,551	\$6,673,082	\$342,780	\$7,015,862	\$6,953,362	\$62,500
Central Grasslands Research Center	3,423,624	3,366,743	144,082	3,510,825	3,510,825	
Hettinger Research Center	4,975,133	4,952,233	160,170	5,112,403	5,112,403	
Langdon Research Center	2,964,607	2,947,911	104,149	3,052,060	3,052,060	
North Central Research Center	4,953,652	4,953,966	183,604	5,137,570	5,075,070	62,500
Williston Research Center	5,118,890	5,068,765	218,068	5,286,833	5,286,833	
Carrington Research Center	9,175,491	9,373,791	312,070	9,685,861	9,685,861	
Total all funds	\$37,436,948	\$37,336,491	\$1,464,923	\$38,801,414	\$38,676,414	\$125,000
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388	20,600,388	0
General fund	\$17,155,257	\$16,595,462	\$1,605,564	\$18,201,026	\$18,076,026	\$125,000
FTE	110.29	109.81	0.00	109.81	109.81	0.00

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**Department 628 - Branch Research Centers - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Salaries <sup>2</sup>	Adds Funding for Operating Expenses <sup>3</sup>	Adds Funding for Oakes Irrigation Site <sup>4</sup>	Total Conference Committee Changes
Dickinson Research Center	\$16,894	\$62,500	\$263,386		\$342,780
Central Grasslands Research Center	13,113		130,969		144,082
Hettinger Research Center	18,420		141,750		160,170
Langdon Research Center	10,698		93,451		104,149
North Central Research Center	17,788	62,500	103,316		183,604
Williston Research Center	19,337		198,731		218,068
Carrington Research Center	43,113		268,957		312,070
Total all funds	\$139,363	\$125,000	\$1,200,560	\$0	\$1,464,923
Less estimated income	59,359	0	0	(200,000)	(140,641)
General fund	\$80,004	\$125,000	\$1,200,560	\$200,000	\$1,605,564
FTE	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$125,000 from the general fund is added for salaries, including \$62,500 each for the Dickinson Research Center and the North Central Research Center. Neither the Senate nor the House provided this funding.

<sup>3</sup> Funding of \$1,200,560 from the general fund reduced by the House for operating expenses is restored, the same as the Senate version.

<sup>4</sup> The funding source for \$200,000 added to the Carrington Research Center for the Oakes irrigation site is changed from other funds as added by the House to the general fund, the same as the Senate version.

**House Bill No. 1020 - NDSU Extension Service - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Extension Service	\$51,188,489	\$53,355,674	\$1,040,631	\$54,396,305	\$54,866,305	(\$470,000)
Soil Conservation Committee	1,091,520	1,091,520		1,091,520	1,212,800	(121,280)
Total all funds	\$52,280,009	\$54,447,194	\$1,040,631	\$55,487,825	\$56,079,105	(\$591,280)
Less estimated income	26,646,689	27,628,956	149,203	27,778,159	27,778,159	0
General fund	\$25,633,320	\$26,818,238	\$891,428	\$27,709,666	\$28,300,946	(\$591,280)
FTE	252.98	242.51	0.00	242.51	242.51	0.00

**Department 630 - NDSU Extension Service - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Reduces Funding for Salaries <sup>2</sup>	Adds Funding for Extension Agent Funding <sup>3</sup>	Total Conference Committee Changes
Extension Service	\$295,631	(\$125,000)	\$870,000	\$1,040,631
Soil Conservation Committee				
Total all funds	\$295,631	(\$125,000)	\$870,000	\$1,040,631
Less estimated income	149,203	0	0	149,203
General fund	\$146,428	(\$125,000)	\$870,000	\$891,428
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

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<sup>2</sup> Funding for salaries and wages is reduced by \$125,000 from the general fund. Neither the House nor the Senate made this reduction.

<sup>3</sup> Funding of \$870,000 from the general fund is added for providing additional state funding for the cost of county extension agents, the same as the Senate version. The House did not add funding for county extension agent funding.

This amendment:

- Does not include \$121,280 from the general fund added by the Senate for soil conservation grants.
- Provides a 2017-19 biennium appropriation of \$345,000 from the general fund for NDSU Extension Service website and digital upgrades. The Senate provided the funding from the 2019-21 biennium and the House did not provide funding for website and digital upgrades.

**House Bill No. 1020 - Northern Crops Institute - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Northern Crops Institute	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027	\$3,840,027	
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027	\$3,840,027	\$0
Less estimated income	1,755,830	1,892,840	3,377	1,896,217	1,896,217	0
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810	\$1,943,810	\$0
FTE	11.80	12.80	0.00	12.80	12.80	0.00

**Department 638 - Northern Crops Institute - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Conference Committee Changes
Northern Crops Institute	\$10,880	\$10,880
Total all funds	\$10,880	\$10,880
Less estimated income	3,377	3,377
General fund	\$7,503	\$7,503
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

**House Bill No. 1020 - Main Research Center - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Main Research Center	\$108,642,243	\$107,866,866	\$3,493,700	\$111,360,566	\$112,460,566	(\$1,100,000)
Total all funds	\$108,642,243	\$107,866,866	\$3,493,700	\$111,360,566	\$112,460,566	(\$1,100,000)
Less estimated income	59,084,828	59,242,367	(1,299,127)	57,943,240	58,443,240	(500,000)
General fund	\$49,557,415	\$48,624,499	\$4,792,827	\$53,417,326	\$54,017,326	(\$600,000)
FTE	336.12	340.05	4.00	344.05	344.05	0.00

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**Department 640 - Main Research Center - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds FTE Positions for Agribiome Initiative <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Adjusts One-Time Funding for Williston Seed Cleaning Plant <sup>4</sup>	Adds One-Time Funding for a Williston Greenhouse <sup>5</sup>	Reduces Funding for Extraordinary Repairs <sup>6</sup>
Main Research Center	\$377,958	\$1,160,000	\$1,955,742		\$500,000	(\$500,000)
Total all funds	\$377,958	\$1,160,000	\$1,955,742	\$0	\$500,000	(\$500,000)
Less estimated income	200,873	0	(1,000,000)	(500,000)	500,000	(500,000)
General fund	\$177,085	\$1,160,000	\$2,955,742	\$500,000	\$0	\$0
FTE	0.00	4.00	0.00	0.00	0.00	0.00

	Total Conference Committee Changes
Main Research Center	\$3,493,700
Total all funds	\$3,493,700
Less estimated income	(1,299,127)
General fund	\$4,792,827
FTE	4.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> The following FTE positions and related funding are added for the agribiome initiative, the same as the Senate version:

	FTE Positions	General Fund
Scientist and technician	2.0	\$580,000
Scientist and technician	<u>2.0</u>	<u>580,000</u>
Total	4.0	\$1,160,000

<sup>3</sup> Funding is adjusted for miscellaneous expenses by adding \$2,955,742 from the general fund and reducing \$1,000,000 of other funds, the same as the Senate version. The House reduced funding for miscellaneous expenses by \$2,955,742 from the general fund but increased funding by \$3,000,000 of other funds.

<sup>4</sup> One-time funding of \$500,000 from the general fund is added to the \$250,000 of one-time funding from the general fund added by the House for the Williston Research Center seed cleaning plant, for a total of \$750,000 from the general fund, the same as the Senate version. The \$500,000 of other funds added by the House for the seed cleaning plant is not included.

<sup>5</sup> One-time funding of \$500,000 of other funds is added for a Williston Research Center greenhouse, the same as the Senate version. The House did not add funding for a Williston greenhouse.

<sup>6</sup> Funding for extraordinary repairs is reduced by \$500,000, to provide a total of \$940,465 from the strategic investment and improvements fund for extraordinary repairs. The House and Senate both provided \$1,440,465 from the strategic investment and improvements fund for extraordinary repairs.

This amendment:

- Does not include \$600,000 of one-time funding from the general fund added by the Senate for equipment storage sheds.
- Includes a section added by the Senate to allow funds appropriated for the 2015-17 biennium for seed cleaning plants at the Carrington Research Center and the North Central Research Center to be continued and spent during the 2019-21 biennium.
- Adds a new section to provide legislative intent that maintenance and operating costs relating to the Williston Research Center greenhouse be paid from other funds.

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**House Bill No. 1020 - Agronomy Seed Farm - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Agronomy Seed Farm	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975	\$1,565,975	
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975	\$1,565,975	\$0
Less estimated income	1,536,129	1,562,334	3,641	1,565,975	1,565,975	0
General fund	\$0	\$0	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00	3.00	0.00

**Department 649 - Agronomy Seed Farm - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Conference Committee Changes
Agronomy Seed Farm	\$3,641	\$3,641
Total all funds	\$3,641	\$3,641
Less estimated income	3,641	3,641
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

**2019 HOUSE CONFERENCE COMMITTEE  
 ROLL CALL VOTES**

BILL/RESOLUTION NO. HB 1020 as (re) engrossed

**House Appropriations Education and Environment Division Committee**

- Action Taken**
- HOUSE accede to Senate Amendments
  - HOUSE accede to Senate Amendments and further amend
  - SENATE recede from Senate amendments
  - SENATE recede from Senate amendments and amend as follows
  - Unable to agree, recommends that the committee be discharged and a new committee be appointed

Motion Made by: Senator Larry Robinson      Seconded by: Representative Mike Nathe

Representatives	4/23	4/24	4/25	Yes	No	Senators	4/23	4/24	4/25	Yes	No
(C) Rep. Monson	X	X	X	X		Sen. Erbele	X	X	X	X	
Rep. Nathe	X	X	X	X		Sen. Wanzek	X	X	X	X	
Rep. Boe	X	X	X	X		Sen. Robinson	X	X	X	X	
Total Rep. Vote						Total Senate Vote					

Vote Count      Yes: 6      No: 0      Absent: 0

House Carrier Representative David Monson      Senate Carrier Senator Robert Erbele

LC Number 19.0208 . 02002 of amendment

LC Number \_\_\_\_\_ . \_\_\_\_\_ of engrossment

Emergency clause added or deleted

Statement of purpose of amendment



Insert LC: 19.0208.02002  
 House Carrier: Monson  
 Senate Carrier: Erbele

**REPORT OF CONFERENCE COMMITTEE**

**HB 1020, as engrossed:** Your conference committee (Sens. Erbele, Wanzek, Robinson and Reps. Monson, Nathe, Boe) recommends that the **SENATE RECEDE** from the Senate amendments as printed on HJ pages 1558-1563, adopt amendments as follows, and place HB 1020 on the Seventh order:

That the Senate recede from its amendments as printed on pages 1558-1563 of the House Journal and pages 1325-1331 of the Senate Journal and that Engrossed House Bill No. 1020 be amended as follows:

Page 1, line 3, after "farm" insert "; to provide for a report; to provide a statement of legislative intent; to provide an exemption; and to declare an emergency"

Page 1, replace lines 19 through 24 with:

"Extension service	\$51,188,489	\$3,207,816	\$54,396,305
Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
Total all funds	\$52,280,009	\$3,207,816	\$55,487,825
Less estimated income	<u>26,646,689</u>	<u>1,131,470</u>	<u>27,778,159</u>
Total general fund	\$25,633,320	\$2,076,346	\$27,709,666
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 5 through 9 with:

"Northern crops institute	<u>\$3,642,721</u>	<u>\$197,306</u>	<u>\$3,840,027</u>
Total all funds	\$3,642,721	\$197,306	\$3,840,027
Less estimated income	<u>1,755,830</u>	<u>140,387</u>	<u>1,896,217</u>
Total general fund	\$1,886,891	\$56,919	\$1,943,810
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 14 through 19 with:

"Upper great plains transportation institute	<u>\$22,060,242</u>	<u>\$1,231,981</u>	<u>\$23,292,223</u>
Total all funds	\$22,060,242	\$1,231,981	\$23,292,223
Less estimated income	<u>18,617,068</u>	<u>278,826</u>	<u>18,895,894</u>
Total general fund	\$3,443,174	\$953,155	\$4,396,329
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 24 through 28 with:

"Main research center	<u>\$108,642,243</u>	<u>\$2,718,323</u>	<u>\$111,360,566</u>
Total all funds	\$108,642,243	\$2,718,323	\$111,360,566
Less estimated income	<u>59,084,828</u>	<u>(1,141,588)</u>	<u>57,943,240</u>
Total general fund	\$49,557,415	\$3,859,911	\$53,417,326
Full-time equivalent positions	336.12	7.93	344.05"

Page 3, replace lines 3 through 13 with:

"Dickinson research center	\$6,825,551	\$190,311	\$7,015,862
Central grasslands research center	3,423,624	87,201	3,510,825
Hettinger research center	4,975,133	137,270	5,112,403
Langdon research center	2,964,607	87,453	3,052,060
North central research center	4,953,652	183,918	5,137,570
Williston research center	5,118,890	167,943	5,286,833
Carrington research center	<u>9,175,491</u>	<u>510,370</u>	<u>9,685,861</u>
Total all funds	\$37,436,948	\$1,364,466	\$38,801,414
Less estimated income	<u>20,281,691</u>	<u>318,697</u>	<u>20,600,388</u>

Insert LC: 19.0208.02002  
 House Carrier: Monson  
 Senate Carrier: Erbele

Total general fund	\$17,155,257	\$1,045,769	\$18,201,026
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 18 through 20 with:

"Agronomy seed farm	<u>\$1,536,129</u>	<u>\$29,846</u>	<u>\$1,565,975</u>
Total special funds	\$1,536,129	\$29,846	\$1,565,975
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 25 through 27 with:

"Grand total general fund	\$97,676,057	\$7,992,100	\$105,668,157
Grand total other funds	<u>127,922,235</u>	<u>757,638</u>	<u>128,679,873</u>
Grand total all funds	\$225,598,292	\$8,749,738	\$234,348,030"

Page 3, line 28, after "FUNDING" insert "**- EFFECT ON BASE BUDGET - REPORT TO SIXTY-SEVENTH LEGISLATIVE ASSEMBLY"**

Page 4, replace lines 2 through 8 with:

"Seed cleaning plants	\$1,500,000	\$750,000
Extraordinary repairs	0	940,465
Junior master gardener program	15,000	0
Road and bridge asset management system	300,000	0
Greenhouse	0	500,000
Total all funds	\$1,815,000	\$2,190,465
Total other funds	<u>1,700,000</u>	<u>1,440,465</u>
Total general fund	\$115,000	\$750,000"

Page 4, line 23, replace "\$1,440,465" with "\$940,465"

Page 5, after line 24, insert:

**SECTION 11. EXEMPTION - CARRINGTON RESEARCH CENTER AND NORTH CENTRAL RESEARCH CENTER.** Any amounts continued for seed cleaning plants at the Carrington research center and North Central research center pursuant to section 12 of chapter 45 of the 2017 Session Laws are not subject to the provisions of section 54-44.1-11 and any unexpended funds may be used to defray the expenses of seed cleaning plants at the Carrington research center and the North Central research center during the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 12. LEGISLATIVE INTENT - WILLISTON RESEARCH CENTER GREENHOUSE.** It is the intent of the sixty-sixth legislative assembly that any future operations and maintenance expenses relating to the Williston research center greenhouse be paid from other funds.

**SECTION 13. APPROPRIATION - 2017-19 BIENNIUM - WEBSITE AND DIGITAL UPGRADES.** There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$345,000, or so much of the sum as may be necessary, to the North Dakota state university extension service for website and digital upgrades, for the period beginning with the effective date of this Act, and ending June 30, 2019. In accordance with section 11 of chapter 45 of the 2017 Session Laws any unexpended funds from this appropriation may be continued into the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 14. EMERGENCY.** Section 13 of this Act is declared to be an emergency measure."

Insert LC: 19.0208.02002  
 House Carrier: Monson  
 Senate Carrier: Erbele

Renumber accordingly

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Transportation Institute						
Total all funds	\$22,060,242	\$22,837,729	\$454,494	\$23,292,223	\$23,392,223	(\$100,000)
Less estimated income	18,617,068	18,874,323	21,571	18,895,894	18,895,894	0
General fund	\$3,443,174	\$3,963,406	\$432,923	\$4,396,329	\$4,496,329	(\$100,000)
FTE	43.88	43.88	0.00	43.88	43.88	0.00
Branch Research Centers						
Total all funds	\$37,436,948	\$37,336,491	\$1,464,923	\$38,801,414	\$38,676,414	\$125,000
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388	20,600,388	0
General fund	\$17,155,257	\$16,595,462	\$1,605,564	\$18,201,026	\$18,076,026	\$125,000
FTE	110.29	109.81	0.00	109.81	109.81	0.00
NDSU Extension Service						
Total all funds	\$52,280,009	\$54,447,194	\$1,040,631	\$55,487,825	\$56,079,105	(\$591,280)
Less estimated income	26,646,689	27,628,956	149,203	27,778,159	27,778,159	0
General fund	\$25,633,320	\$26,818,238	\$891,428	\$27,709,666	\$28,300,946	(\$591,280)
FTE	252.98	242.51	0.00	242.51	242.51	0.00
Northern Crops Institute						
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027	\$3,840,027	\$0
Less estimated income	1,755,830	1,892,840	3,377	1,896,217	1,896,217	0
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810	\$1,943,810	\$0
FTE	11.80	12.80	0.00	12.80	12.80	0.00
Main Research Center						
Total all funds	\$108,642,243	\$107,866,866	\$3,493,700	\$111,360,566	\$112,460,566	(\$1,100,000)
Less estimated income	59,084,828	59,242,367	(1,299,127)	57,943,240	58,443,240	(500,000)
General fund	\$49,557,415	\$48,624,499	\$4,792,827	\$53,417,326	\$54,017,326	(\$600,000)
FTE	336.12	340.05	4.00	344.05	344.05	0.00
Agronomy Seed Farm						
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975	\$1,565,975	\$0
Less estimated income	1,536,129	1,562,334	3,641	1,565,975	1,565,975	0
General fund	\$0	\$0	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00	3.00	0.00
Bill total						
Total all funds	\$225,598,292	\$227,879,761	\$6,468,269	\$234,348,030	\$236,014,310	(\$1,666,280)
Less estimated income	127,922,235	129,941,849	(1,261,976)	128,679,873	129,179,873	(500,000)
General fund	\$97,676,057	\$97,937,912	\$7,730,245	\$105,668,157	\$106,834,437	(\$1,166,280)
FTE	758.07	752.05	4.00	756.05	756.05	0.00

**House Bill No. 1020 - Transportation Institute - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Upper Great Plains Trans. Institute	\$22,060,242	\$22,837,729	\$454,494	\$23,292,223	\$23,392,223	(\$100,000)
Total all funds	\$22,060,242	\$22,837,729	\$454,494	\$23,292,223	\$23,392,223	(\$100,000)
Less estimated income	18,617,068	18,874,323	21,571	18,895,894	18,895,894	0
General fund	\$3,443,174	\$3,963,406	\$432,923	\$4,396,329	\$4,496,329	(\$100,000)
FTE	43.88	43.88	0.00	43.88	43.88	0.00

**Department 627 - Transportation Institute - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for a Road and Bridge Study <sup>2</sup>	Total Conference Committee Changes
Upper Great Plains Trans. Institute	\$29,494	\$425,000	\$454,494
Total all funds	\$29,494	\$425,000	\$454,494
Less estimated income	21,571	0	21,571
General fund	\$7,923	\$425,000	\$432,923
FTE	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Ongoing funding of \$425,000 from the general fund is added to continue the road and bridge study, for a total of \$875,000. The Senate provided \$975,000 and the House provided \$450,000 from the general fund for the study.

**House Bill No. 1020 - Branch Research Centers - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Dickinson Research Center	\$6,825,551	\$6,673,082	\$342,780	\$7,015,862	\$6,953,362	\$62,500
Central Grasslands Research Center	3,423,624	3,366,743	144,082	3,510,825	3,510,825	
Heltinger Research Center	4,975,133	4,952,233	160,170	5,112,403	5,112,403	
Langdon Research Center	2,964,607	2,947,911	104,149	3,052,060	3,052,060	
North Central Research Center	4,953,652	4,953,966	183,604	5,137,570	5,075,070	62,500
Williston Research Center	5,118,890	5,068,765	218,068	5,286,833	5,286,833	
Carrington Research Center	9,175,491	9,373,791	312,070	9,685,861	9,685,861	
Total all funds	\$37,436,948	\$37,336,491	\$1,464,923	\$38,801,414	\$38,676,414	\$125,000
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388	20,600,388	0
General fund	\$17,155,257	\$16,595,462	\$1,605,564	\$18,201,026	\$18,076,026	\$125,000
FTE	110.29	109.81	0.00	109.81	109.81	0.00

**Department 628 - Branch Research Centers - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Salaries <sup>2</sup>	Adds Funding for Operating Expenses <sup>3</sup>	Adds Funding for Oakes Irrigation Site <sup>4</sup>	Total Conference Committee Changes
Dickinson Research Center	\$16,894	\$62,500	\$263,386		\$342,780
Central Grasslands Research Center	13,113		130,969		144,082
Heltinger Research Center	18,420		141,750		160,170
Langdon Research Center	10,698		93,451		104,149
North Central Research Center	17,788	62,500	103,316		183,604
Williston Research Center	19,337		198,731		218,068
Carrington Research Center	43,113		268,957		312,070
Total all funds	\$139,363	\$125,000	\$1,200,560	\$0	\$1,464,923
Less estimated income	59,359	0	0	(200,000)	(140,641)
General fund	\$80,004	\$125,000	\$1,200,560	\$200,000	\$1,605,564
FTE	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1,

2020.

<sup>2</sup> Funding of \$125,000 from the general fund is added for salaries, including \$62,500 each for the Dickinson Research Center and the North Central Research Center. Neither the Senate nor the House provided this funding.

<sup>3</sup> Funding of \$1,200,560 from the general fund reduced by the House for operating expenses is restored, the same as the Senate version.

<sup>4</sup> The funding source for \$200,000 added to the Carrington Research Center for the Oakes irrigation site is changed from other funds as added by the House to the general fund, the same as the Senate version.

**House Bill No. 1020 - NDSU Extension Service - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Extension Service	\$51,188,489	\$53,355,674	\$1,040,631	\$54,396,305	\$54,866,305	(\$470,000)
Soil Conservation Committee	1,091,520	1,091,520		1,091,520	1,212,800	(121,280)
<b>Total all funds</b>	<b>\$52,280,009</b>	<b>\$54,447,194</b>	<b>\$1,040,631</b>	<b>\$55,487,825</b>	<b>\$56,079,105</b>	<b>(\$591,280)</b>
Less estimated income	26,646,689	27,628,956	149,203	27,778,159	27,778,159	0
General fund	\$25,633,320	\$26,818,238	\$891,428	\$27,709,666	\$28,300,946	(\$591,280)
FTE	252.98	242.51	0.00	242.51	242.51	0.00

**Department 630 - NDSU Extension Service - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Reduces Funding for Salaries <sup>2</sup>	Adds Funding for Extension Agent Funding <sup>3</sup>	Total Conference Committee Changes
Extension Service	\$295,631	(\$125,000)	\$870,000	\$1,040,631
Soil Conservation Committee				
<b>Total all funds</b>	<b>\$295,631</b>	<b>(\$125,000)</b>	<b>\$870,000</b>	<b>\$1,040,631</b>
Less estimated income	149,203	0	0	149,203
General fund	\$146,428	(\$125,000)	\$870,000	\$891,428
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding for salaries and wages is reduced by \$125,000 from the general fund. Neither the House nor the Senate made this reduction.

<sup>3</sup> Funding of \$870,000 from the general fund is added for providing additional state funding for the cost of county extension agents, the same as the Senate version. The House did not add funding for county extension agent funding.

This amendment:

- Does not include \$121,280 from the general fund added by the Senate for soil conservation grants.
- Provides a 2017-19 biennium appropriation of \$345,000 from the general fund for NDSU Extension Service website and digital upgrades. The Senate provided the funding from the 2019-21 biennium and the House did not provide funding for website and digital upgrades.

Insert LC: 19.0208.02002  
House Carrier: Monson  
Senate Carrier: Erbele

**House Bill No. 1020 - Northern Crops Institute - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Northern Crops Institute	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027	\$3,840,027	
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027	\$3,840,027	\$0
Less estimated income	1,755,830	1,892,840	3,377	1,896,217	1,896,217	0
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810	\$1,943,810	\$0
FTE	11.80	12.80	0.00	12.80	12.80	0.00

**Department 638 - Northern Crops Institute - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Conference Committee Changes
Northern Crops Institute	\$10,880	\$10,880
Total all funds	\$10,880	\$10,880
Less estimated income	3,377	3,377
General fund	\$7,503	\$7,503
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

**House Bill No. 1020 - Main Research Center - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Main Research Center	\$108,642,243	\$107,866,866	\$3,493,700	\$111,360,566	\$112,460,566	(\$1,100,000)
Total all funds	\$108,642,243	\$107,866,866	\$3,493,700	\$111,360,566	\$112,460,566	(\$1,100,000)
Less estimated income	59,084,828	59,242,367	(1,299,127)	57,943,240	58,443,240	(500,000)
General fund	\$49,557,415	\$48,624,499	\$4,792,827	\$53,417,326	\$54,017,326	(\$600,000)
FTE	336.12	340.05	4.00	344.05	344.05	0.00

**Department 640 - Main Research Center - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds FTE Positions for Agribiome Initiative <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Adjusts One-Time Funding for Williston Seed Cleaning Plant <sup>4</sup>	Adds One-Time Funding for a Williston Greenhouse <sup>5</sup>	Reduces Funding for Extraordinary Repairs <sup>6</sup>
Main Research Center	\$377,958	\$1,160,000	\$1,955,742		\$500,000	(\$500,000)
Total all funds	\$377,958	\$1,160,000	\$1,955,742	\$0	\$500,000	(\$500,000)
Less estimated income	200,873	0	(1,000,000)	(500,000)	500,000	(500,000)
General fund	\$177,085	\$1,160,000	\$2,955,742	\$500,000	\$0	\$0
FTE	0.00	4.00	0.00	0.00	0.00	0.00

	Total Conference Committee Changes
Main Research Center	\$3,493,700
Total all funds	\$3,493,700
Less estimated income	(1,299,127)
General fund	\$4,792,827
FTE	4.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> The following FTE positions and related funding are added for the agribiome initiative, the same as the Senate version:

	<u>FTE Positions</u>	<u>General Fund</u>
Scientist and technician	2.0	\$580,000
Scientist and technician	2.0	580,000
Total	4.0	\$1,160,000

<sup>3</sup> Funding is adjusted for miscellaneous expenses by adding \$2,955,742 from the general fund and reducing \$1,000,000 of other funds, the same as the Senate version. The House reduced funding for miscellaneous expenses by \$2,955,742 from the general fund but increased funding by \$3,000,000 of other funds.

<sup>4</sup> One-time funding of \$500,000 from the general fund is added to the \$250,000 of one-time funding from the general fund added by the House for the Williston Research Center seed cleaning plant, for a total of \$750,000 from the general fund, the same as the Senate version. The \$500,000 of other funds added by the House for the seed cleaning plant is not included.

<sup>5</sup> One-time funding of \$500,000 of other funds is added for a Williston Research Center greenhouse, the same as the Senate version. The House did not add funding for a Williston greenhouse.

<sup>6</sup> Funding for extraordinary repairs is reduced by \$500,000, to provide a total of \$940,465 from the strategic investment and improvements fund for extraordinary repairs. The House and Senate both provided \$1,440,465 from the strategic investment and improvements fund for extraordinary repairs.

This amendment:

- Does not include \$600,000 of one-time funding from the general fund added by the Senate for equipment storage sheds.
- Includes a section added by the Senate to allow funds appropriated for the 2015-17 biennium for seed cleaning plants at the Carrington Research Center and the North Central Research Center to be continued and spent during the 2019-21 biennium.
- Adds a new section to provide legislative intent that maintenance and operating costs relating to the Williston Research Center greenhouse be paid from other funds.

**House Bill No. 1020 - Agronomy Seed Farm - Conference Committee Action**

	Base Budget	House Version	Conference Committee Changes	Conference Committee Version	Senate Version	Comparison to Senate
Agronomy Seed Farm	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975	\$1,565,975	
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975	\$1,565,975	\$0
Less estimated income	1,536,129	1,562,334	3,641	1,565,975	1,565,975	0
General fund	\$0	\$0	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00	3.00	0.00

Insert LC: 19.0208.02002  
 House Carrier: Monson  
 Senate Carrier: Erbele

**Department 649 - Agronomy Seed Farm - Detail of Conference Committee Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Conference Committee Changes
Agronomy Seed Farm	\$3,641	\$3,641
Total all funds	\$3,641	\$3,641
Less estimated income	3,641	3,641
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020, the same as the Senate version. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

Engrossed HB 1020 was placed on the Seventh order of business on the calendar.



**2019 TESTIMONY**

**HB 1020**

**Department 627 - Upper Great Plains Transportation Institute  
House Bill No. 1020**

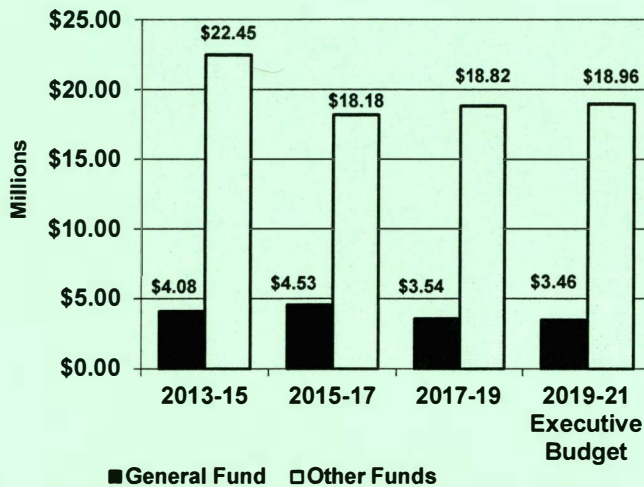
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	43.88	\$3,464,200	\$18,957,222	\$22,421,422
2017-19 Legislative Appropriations	43.88	3,543,174	18,817,068	22,360,242
Increase (Decrease)	0.00	(\$78,974)	\$140,154	\$61,180

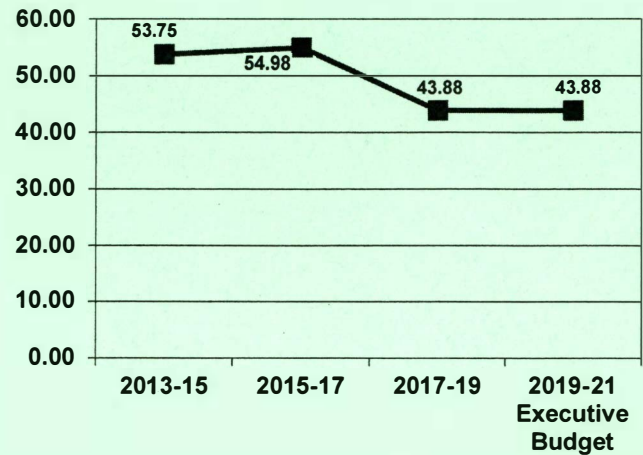
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$3,464,200	\$0	\$3,464,200
2017-19 Legislative Appropriations	3,443,174	100,000	3,543,174
Increase (Decrease)	\$21,026	(\$100,000)	(\$78,974)

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$3,464,200	\$18,957,222	\$22,421,422
2019-21 Base Level	3,443,174	18,617,068	22,060,242
Increase (Decrease)	\$21,026	\$340,154	\$361,180

Attached as an appendix is a detailed comparison of the executive budget to the agency's base level appropriations.

**Executive Budget Highlights**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$366,916 is for salary increases, \$151,153 is for health insurance increases, and \$15,270 is for retirement contribution increases	\$193,185	\$340,154	\$533,339
2. Reduces funding for miscellaneous expenses	(\$172,159)	\$0	(\$172,159)

**Other Sections Recommended to be Added in the Executive Budget  
(As Detailed in the Attached Appendix)**

**Additional income appropriation** - Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**FTE position adjustments** - Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provide that any adjustments be reported to the Office of Management and Budget.

**Unexpended general fund - Excess income** - Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

**Major Related Legislation**

At this time, no major legislation has been introduced affecting this agency.

**Upper Great Plains Transportation Institute - Budget No. 627**

**House Bill No. 1020**

**Base Level Funding Changes**

	<b>Executive Budget Recommendation</b>			
	<b>FTE Positions</b>	<b>General Fund</b>	<b>Other Funds</b>	<b>Total</b>
<b>2019-21 Biennium Base Level</b>	43.88	\$3,443,174	\$18,617,068	\$22,060,242
<b>2019-21 Ongoing Funding Changes</b>				
Salary increase		\$132,904	\$234,012	\$366,916
Health insurance increase		54,750	96,403	151,153
Retirement contribution increase		5,531	9,739	15,270
Reduce funding for miscellaneous expenses		(172,159)		(172,159)
Total ongoing funding changes	0.00	\$21,026	\$340,154	\$361,180
<b>One-time funding items</b>				
No one-time funding items				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$21,026	\$340,154	\$361,180
<b>2019-21 Total Funding</b>	43.88	\$3,464,200	\$18,957,222	\$22,421,422

**Other Sections for Upper Great Plains Transportation Institute - Budget No. 627**

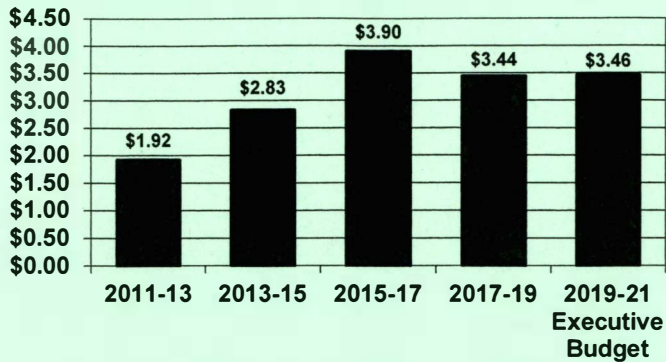
	<b>Executive Budget Recommendation</b>
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provide that any adjustments be reported to the Office of Management and Budget.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.

## Department 627 - Upper Great Plains Transportation Institute

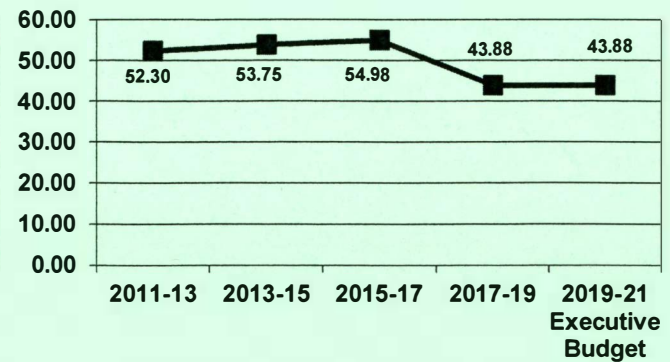
## Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$1,919,628	\$2,826,824	\$3,900,791	\$3,443,174	\$3,464,200
Increase (decrease) from previous biennium	N/A	\$907,196	\$1,073,967	(\$457,617)	\$21,026
Percentage increase (decrease) from previous biennium	N/A	47.3%	38.0%	(11.7%)	0.6%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	47.3%	103.2%	79.4%	80.5%

## Major Increases (Decreases) in Ongoing General Fund Appropriations

## 2013-15 Biennium

- Added funding to match new federal grants \$750,000
- Added 2 FTE positions \$349,908

## 2015-17 Biennium

- Increased funding for rentals, leases, and professional services \$300,548
- Increased funding to reflect anticipated decreases in federal grants and to aid in obtaining federal grants \$300,548
- Added funding for a road and bridge asset management system \$793,000

## 2017-19 Biennium

- Removed 1.3 FTE positions and reduced funding for salaries and operating expenses (\$213,402)
- Reduced general fund appropriations by 3 percent (\$106,917)
- Adjusted funding sources (\$200,000)

## 2019-21 Biennium (Executive Budget Recommendation)

- Reduces funding for miscellaneous expenses (\$172,159)

**Department 628 - Branch Research Centers  
House Bill No. 1020**

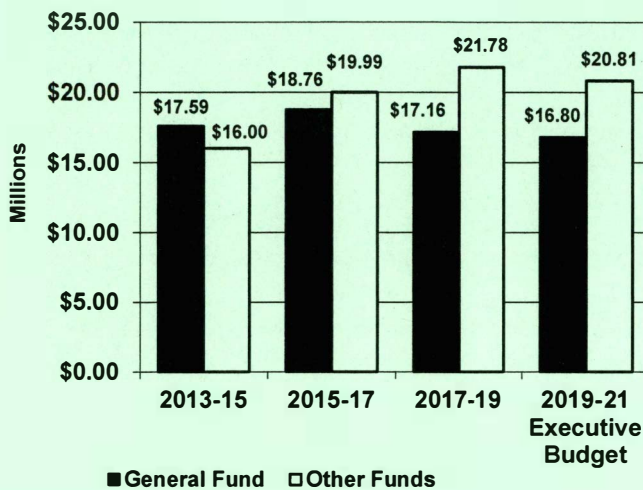
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	109.81	\$16,795,558	\$20,807,242	\$37,602,800
2017-19 Legislative Appropriations	110.29	17,155,257	21,781,691	38,936,948
Increase (Decrease)	(0.48)	(\$359,699)	(\$974,449)	(\$1,334,148)

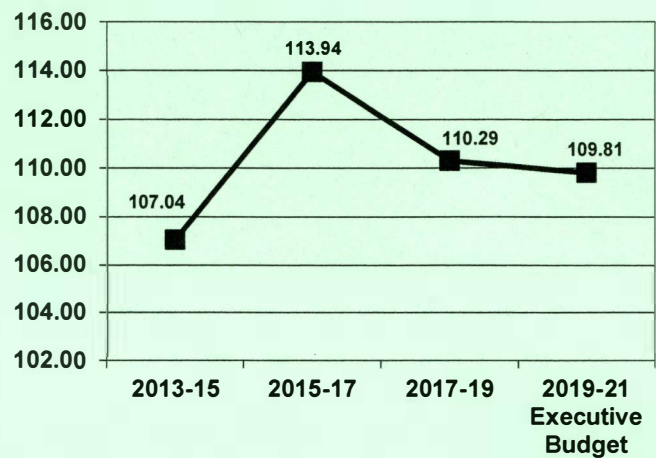
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$16,795,558	\$0	\$16,795,558
2017-19 Legislative Appropriations	17,155,257	0	17,155,257
Increase (Decrease)	(\$359,699)	\$0	(\$359,699)

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$16,795,558	\$20,807,242	\$37,602,800
2019-21 Base Level	17,155,257	20,281,691	37,436,948
Increase (Decrease)	(\$359,699)	\$525,551	\$165,852

Attached as an appendix is a detailed comparison of the executive budget to the agency's base level appropriations.

**Executive Budget Highlights**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$756,222 is for salary increases, \$398,092 is for health insurance increases, and \$35,189 is for retirement contribution increases	\$863,952	\$325,551	\$1,189,503
<b>Dickinson Research Center</b>			
2. Reduces funding for operating expenses	(\$263,386)	\$0	(\$263,386)
<b>Central Grasslands Research Center</b>			
3. Reduces funding for operating expenses	(\$130,969)	\$0	(\$130,969)
4. Adjusts funding for capital bond payments	(\$8,782)	\$0	(\$8,782)
<b>Hettinger Research Center</b>			
5. Reduces funding for operating expenses	(\$141,750)	\$0	(\$141,750)

**Langdon Research Center**

6. Reduces funding for operating expenses (\$93,451) \$0 (\$93,451)

**North Central Research Center**

7. Reduces funding for operating expenses (\$103,316) \$0 (\$103,316)

8. Adjusts funding for capital bond payments (\$14,309) \$0 (\$14,309)

**Williston Research Center**

9. Reduces funding for operating expenses (\$198,731) \$0 (\$198,731)

**Carrington Research Center**

10. Reduces funding for operating expenses (\$268,957) \$0 (\$268,957)

11. Adds funding for the Oakes irrigation site \$0 \$200,000 \$200,000

**Other Sections Recommended to be Added in the Executive Budget  
(As Detailed in the Attached Appendix)**

**Additional income appropriation** - Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Dickinson Research Extension Center mineral rights income** - Section 4 would authorize the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.

**Williston Research Extension Center mineral rights income** - Section 5 would direct the Williston Research Extension Center to report to the 67<sup>th</sup> Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.

**Transfer authority** - Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, North Dakota State University Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provide that any adjustments be reported to the Office of Management and Budget.

**Unexpended general fund - Excess income** - Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the branch research centers into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

**Major Related Legislation**

**Senate Bill No. 2055** - Repeals authority approved by the 2013 Legislative Assembly to convey research center land in Ward County and Williams County.

## Branch Research Centers - Budget No. 628

### House Bill No. 1020

### Base Level Funding Changes

#### Executive Budget Recommendation

	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	110.29	\$17,155,257	\$20,281,691	\$37,436,948
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes	(0.48)			\$0
Salary increase		\$550,257	\$205,965	756,222
Health insurance increase		288,089	110,003	398,092
Retirement contribution increase		25,606	9,583	35,189
Reduce funding for travel, miscellaneous supplies, repairs, and operating fees and services		(1,200,560)		(1,200,560)
Add funding for Oakes irrigation site			200,000	200,000
Reduce funding for capital bond payments		(23,091)		(23,091)
Total ongoing funding changes	(0.48)	(\$359,699)	\$525,551	\$165,852
<b>One-time funding items</b>				
No one-time funding items				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	(0.48)	(\$359,699)	\$525,551	\$165,852
<b>2019-21 Total Funding</b>	109.81	\$16,795,558	\$20,807,242	\$37,602,800

### Other Sections for Branch Research Centers - Budget No. 628

#### Executive Budget Recommendation

Additional income appropriation

Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

Dickinson Research Extension Center mineral rights income

Section 4 would authorize the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.

Williston Research Extension Center mineral rights income

Section 5 would direct the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.



**Other Sections for Branch Research Centers - Budget No. 628**

**Executive Budget Recommendation**

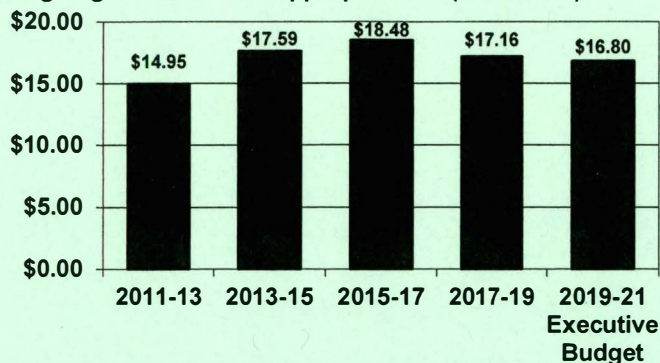
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provide that any adjustments be reported to the Office of Management and Budget.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the branch research centers into the 2021-23 biennium.

Department 628 - Branch Research Centers

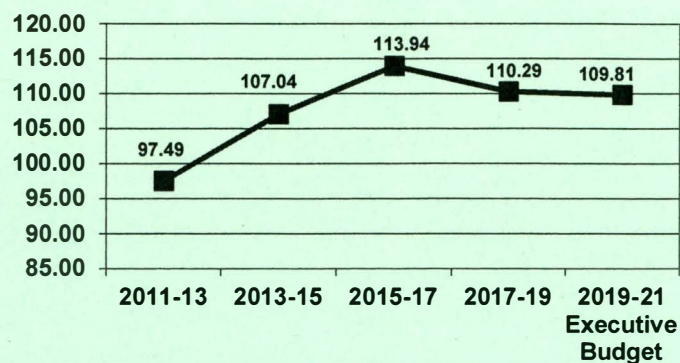
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$14,945,208	\$17,585,702	\$18,483,636	\$17,155,257	\$16,795,558
Increase (decrease) from previous biennium	N/A	\$2,640,494	\$897,934	(\$1,328,379)	(\$359,699)
Percentage increase (decrease) from previous biennium	N/A	17.7%	5.1%	(7.2%)	(2.1%)
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	17.7%	23.7%	14.8%	12.4%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

#### 2013-15 Biennium

- Added funding for 4 new FTE positions, one each at the Central Grasslands Research Center, Hettinger Research Center, North Central Research Center, and Carrington Research Center \$650,000
- Increased funding for operating expenses (Enhancing Research Capacity Initiative) \$560,000
- Added funding for variety testing, crop pathology, and dryland crop improvement (Crop Initiative) \$360,000

#### 2015-17 Biennium

- Added funding for 1 FTE animal science technical support position for the Hettinger Research Center \$130,000
- Added funding for 2 FTE crop disease research positions at the Williston Research Center \$330,000
- Increased funding for operating expenses \$210,000
- Increased funding for equipment over \$5,000 \$550,000

#### 2017-19 Biennium

- Removed 3.65 FTE positions (\$642,408)
- Adjusted funding sources and made additional unspecified general fund reductions (\$1,086,573)

#### 2019-21 Biennium (Executive Budget Recommendation)

- Reduces funding for travel, miscellaneous supplies, repairs, and operating fees and services (\$1,200,560)

Department 630 - NDSU Extension Service  
House Bill No. 1020

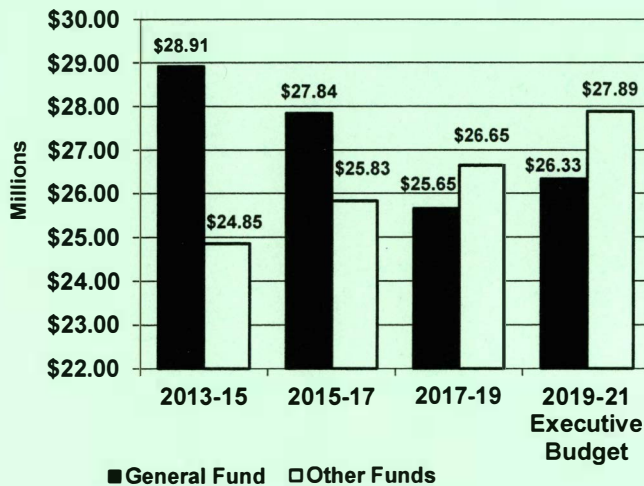
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	242.51	\$26,328,788	\$27,886,984	\$54,215,772
2017-19 Legislative Appropriations	252.98	25,648,320	26,646,689	52,295,009
Increase (Decrease)	(10.47)	\$680,468	\$1,240,295	\$1,920,763

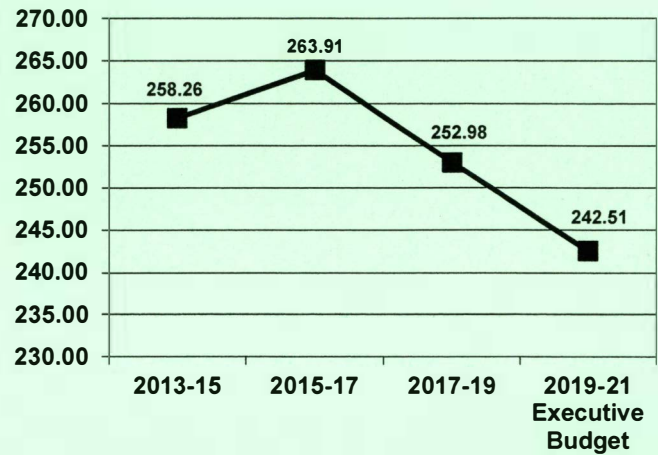
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$25,983,788	\$345,000	\$26,328,788
2017-19 Legislative Appropriations	25,633,320	15,000	25,648,320
Increase (Decrease)	\$350,468	\$330,000	\$680,468

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$26,328,788	\$27,886,984	\$54,215,772
2019-21 Base Level	25,633,320	26,646,689	52,280,009
Increase (Decrease)	\$695,468	\$1,240,295	\$1,935,763

Attached as an appendix is a detailed comparison of the executive budget to the agency's base level appropriations.

**Executive Budget Highlights**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$1,752,793 is for salary increases, \$860,997 is for health insurance increases, and \$40,305 is for retirement contribution increases	\$1,413,800	\$1,240,295	\$2,654,095
2. Reduces funding for miscellaneous expenses	(\$1,063,332)	\$0	(\$1,063,332)
3. Adds one-time funding for website and digital upgrades	\$345,000	\$0	\$345,000

**Other Sections Recommended to be Added in the Executive Budget  
(As Detailed in the Attached Appendix)**

**Additional income appropriation** - Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the North Dakota State University (NDSU) Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Transfer authority** - Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provide that any adjustments be reported to the Office of Management and Budget.

**Unexpended general fund - Excess income** - Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the NDSU Extension Service into the 2021-23 biennium.

### **Continuing Appropriations**

There are no continuing appropriations for this agency.

### **Significant Audit Findings**

The State Auditor's office reported NDSU did not have adequate journal entry approval for the Agricultural Experiment Station and Extension Service.

### **Major Related Legislation**

At this time, no major related legislation has been introduced affecting this agency.

# NDSU Extension Service - Budget No. 630

## House Bill No. 1020

### Base Level Funding Changes

	<u>Executive Budget Recommendation</u>			
	<u>FTE Positions</u>	<u>General Fund</u>	<u>Other Funds</u>	<u>Total</u>
<b>2019-21 Biennium Base Level</b>	252.98	\$25,633,320	\$26,646,689	\$52,280,009
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes	(10.47)			\$0
Salary increase		\$933,689	\$819,104	1,752,793
Health insurance increase		458,641	402,356	860,997
Retirement contribution increase		21,470	18,835	40,305
Reduce funding for miscellaneous expenses		(1,063,332)		(1,063,332)
Total ongoing funding changes	(10.47)	\$350,468	\$1,240,295	\$1,590,763
<b>One-time funding items</b>				
Add one-time funding for website and digital upgrades		\$345,000		\$345,000
Total one-time funding changes	0.00	\$345,000	\$0	\$345,000
<b>Total Changes to Base Level Funding</b>	(10.47)	\$695,468	\$1,240,295	\$1,935,763
<b>2019-21 Total Funding</b>	242.51	\$26,328,788	\$27,886,984	\$54,215,772

### Other Sections for NDSU Extension Service - Budget No. 630

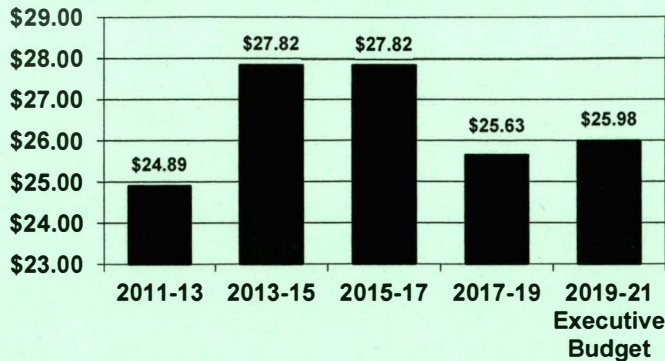
	<u>Executive Budget Recommendation</u>
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provide that any adjustments be reported to the Office of Management and Budget.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the NDSU Extension Service into the 2021-23 biennium.

## Department 630 - NDSU Extension Service

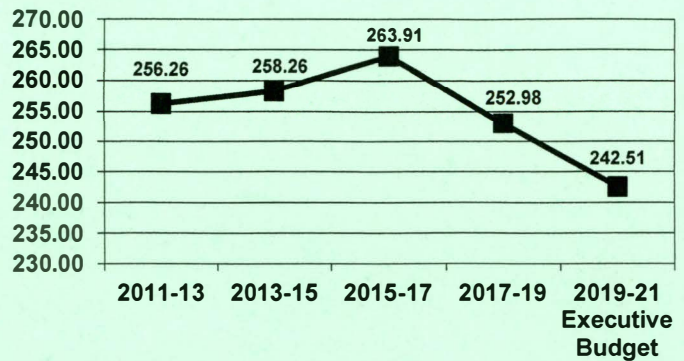
## Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$24,885,644	\$27,824,265	\$27,824,562	\$25,633,320	\$25,983,788
Increase (decrease) from previous biennium	N/A	\$2,938,621	\$297	(\$2,191,242)	\$350,468
Percentage increase (decrease) from previous biennium	N/A	11.8%	0.0%	(7.9%)	1.4%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	11.8%	11.8%	3.0%	4.4%

## Major Increases (Decreases) in Ongoing General Fund Appropriations

## 2013-15 Biennium

- Added funding for 1 FTE area livestock specialist position and 1 FTE crop protection technician position \$370,000
- Added funding for the Rural Leadership North Dakota program \$125,000
- Added funding for summer internships \$250,000
- Increased funding for soil conservation district grants to provide a total of \$1,137,800 \$150,000
- Added funding for operating support for livestock production economics \$150,000

## 2015-17 Biennium

- Added funding for 1 FTE livestock specialist position at the Hettinger Research Extension Center \$240,000
- Increased funding for soil conservation district grants to provide a total of \$1,212,800 (this item was affected by August 2016 budget reductions) \$75,000

## 2017-19 Biennium

- Reduced funding for salaries, including removal of 10.93 FTE positions (\$1,619,206)
- Adjusted funding for operating expenses \$175,557
- Reduced funding for equipment (\$300,000)
- Additional unspecified general fund reduction (\$1,096,343)

## 2019-21 Biennium (Executive Budget Recommendation)

- Reduces funding for miscellaneous expenses (\$1,063,332)

**Department 638 - Northern Crops Institute  
House Bill No. 1020**

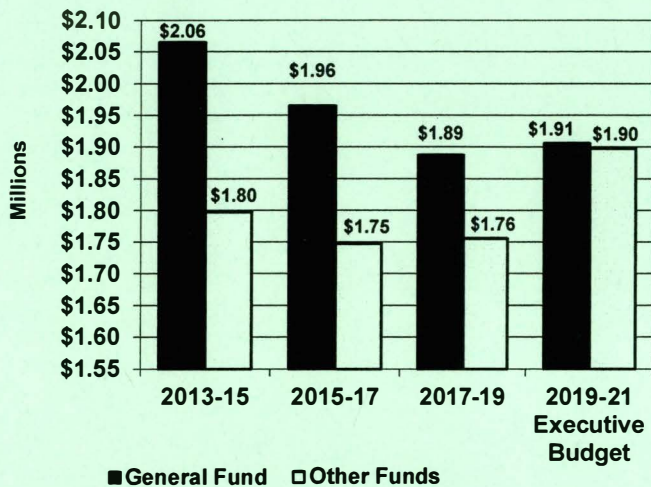
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	12.80	\$1,905,767	\$1,897,853	\$3,803,620
2017-19 Legislative Appropriations	11.80	1,886,891	1,755,830	3,642,721
Increase (Decrease)	1.00	\$18,876	\$142,023	\$160,899

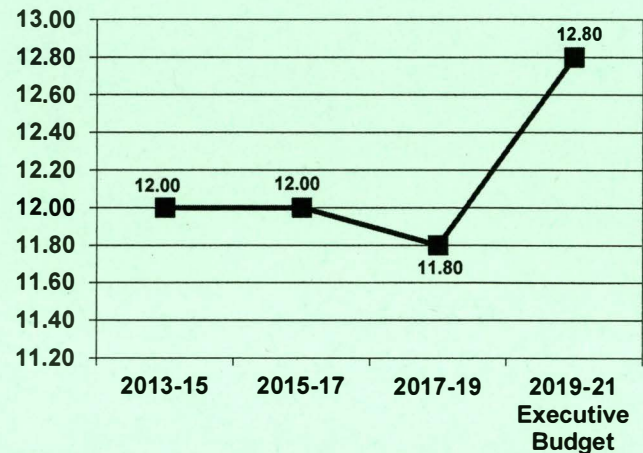
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$1,905,767	\$0	\$1,905,767
2017-19 Legislative Appropriations	1,886,891	0	1,886,891
Increase (Decrease)	\$18,876	\$0	\$18,876

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$1,905,767	\$1,897,853	\$3,803,620
2019-21 Base Level	1,886,891	1,755,830	3,642,721
Increase (Decrease)	\$18,876	\$142,023	\$160,899

Attached as an appendix is a detailed comparison of the executive budget to the agency's base level appropriations.

**Executive Budget Highlights**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$110,410 is for salary increases, \$49,127 is for health insurance increases, and \$1,362 is for retirement contribution increases	\$113,221	\$47,678	\$160,899
2. Adjusts funding for miscellaneous expenses	(\$94,345)	\$94,345	\$0

**Other Sections Recommended to be Added in the Executive Budget  
(As Detailed in the Attached Appendix)**

**Additional income appropriation** - Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Transfer authority** - Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, North Dakota State University Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provide that any adjustments be reported to the Office of Management and Budget.

**Unexpended general fund - Excess income** - Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Northern Crops Institute into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

**Major Related Legislation**

At this time, no major legislation has been introduced affecting this agency.



**Northern Crops Institute - Budget No. 638**

**House Bill No. 1020**

**Base Level Funding Changes**

	<b>Executive Budget Recommendation</b>			<b>Total</b>
	<b>FTE Positions</b>	<b>General Fund</b>	<b>Other Funds</b>	
<b>2019-21 Biennium Base Level</b>	11.80	\$1,886,891	\$1,755,830	\$3,642,721
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes	1.00			\$0
Salary increase		\$77,693	\$32,717	110,410
Health insurance increase		34,570	14,557	49,127
Retirement contribution increase		958	404	1,362
Adjust funding for miscellaneous expenses		(94,345)	94,345	0
<b>Total ongoing funding changes</b>	1.00	\$18,876	\$142,023	\$160,899
<b>One-time funding items</b>				
No one-time funding items				\$0
<b>Total one-time funding changes</b>	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	1.00	\$18,876	\$142,023	\$160,899
<b>2019-21 Total Funding</b>	12.80	\$1,905,767	\$1,897,853	\$3,803,620

**Other Sections for Northern Crops Institute - Budget No. 638**

	<b>Executive Budget Recommendation</b>
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, North Dakota State University Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provide that any adjustments be reported to the Office of Management and Budget.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Northern Crops Institute into the 2021-23 biennium.

Department 638 - Northern Crops Institute

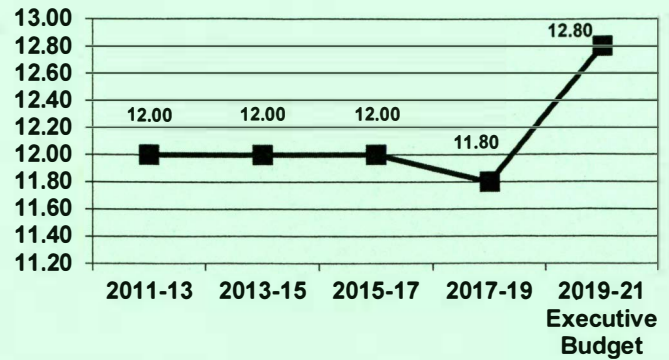
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$1,692,582	\$1,964,861	\$1,964,467	\$1,886,891	\$1,905,767
Increase (decrease) from previous biennium	N/A	\$272,279	(\$394)	(\$77,576)	\$18,876
Percentage increase (decrease) from previous biennium	N/A	16.1%	0.0%	(3.9%)	1.0%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	16.1%	16.1%	11.5%	12.6%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

**2013-15 Biennium**

- 1. Increased funding for equipment \$30,780

**2015-17 Biennium**

- 1. No major changes \$0

**2017-19 Biennium**

- 1. Reduced funding for equipment (\$200,000)
- 2. Restored funding for operating expenses \$137,691

**2019-21 Biennium (Executive Budget Recommendation)**

- 1. Adjusts funding source for miscellaneous expenses (\$94,345)

Department 640 - NDSU Main Research Center  
House Bill No. 1020

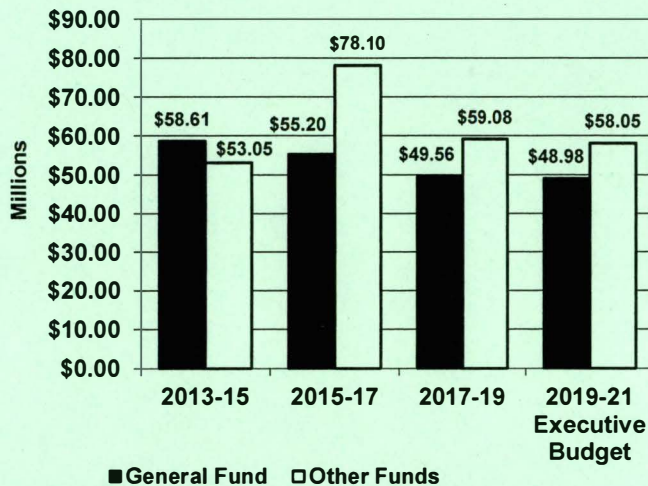
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	340.05	\$48,978,409	\$58,053,640	\$107,032,049
2017-19 Legislative Appropriations	336.12	49,557,415	59,084,828	108,642,243
Increase (Decrease)	3.93	(\$579,006)	(\$1,031,188)	(\$1,610,194)

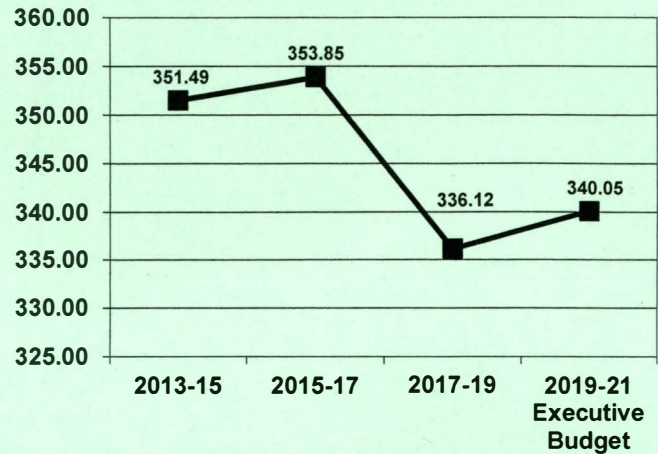
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$48,978,409	\$0	\$48,978,409
2017-19 Legislative Appropriations	49,557,415	0	49,557,415
Increase (Decrease)	(\$579,006)	\$0	(\$579,006)

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$48,978,409	\$58,053,640	\$107,032,049
2019-21 Base Level	49,557,415	59,084,828	108,642,243
Increase (Decrease)	(\$579,006)	(\$1,031,188)	(\$1,610,194)

Attached as an appendix is a detailed comparison of the executive budget to the agency's base level appropriations.

**Executive Budget Highlights**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$2,724,596 is for salary increases, \$1,202,117 is for health insurance increases, and \$40,859 is for retirement contribution increases	\$2,441,827	\$1,525,745	\$3,967,572
2. Adjusts funding for miscellaneous expenses	(\$2,955,742)	\$2,000,000	(\$955,742)
3. Reduces funding for capital bond payments	(\$65,091)	\$0	(\$65,091)
4. Reduces capital funding from special funds	\$0	(\$5,997,398)	(\$5,997,398)
5. Adds one-time funding from the strategic investment and improvements fund for extraordinary repairs	\$0	\$1,440,465	\$1,440,465

**Other Sections Recommended to be Added in the Executive Budget  
(As Detailed in the Attached Appendix)**

**Additional income appropriation** - Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Transfer authority** - Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, North Dakota State University Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provide that any adjustments be reported to the Office of Management and Budget.

**Unexpended general fund - Excess income** - Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Main Research Center into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

The State Auditor's office reported North Dakota State University did not have adequate journal entry approval for the Agricultural Experiment Station and Extension Service.

**Major Related Legislation**

**Senate Bill No. 2055** - Repeals authority approved by the 2013 Legislative Assembly to research center land in Ward County and Williams County.

**NDSU Main Research Center - Budget No. 640**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	<u>Executive Budget Recommendation</u>			
	<u>FTE</u>	<u>General</u>	<u>Other</u>	<u>Total</u>
	<u>Positions</u>	<u>Fund</u>	<u>Funds</u>	
<b>2019-21 Biennium Base Level</b>	336.12	\$49,557,415	\$59,084,828	\$108,642,243
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes	3.93			\$0
Salary increase		\$1,676,842	\$1,047,754	2,724,596
Health insurance increase		739,838	462,279	1,202,117
Retirement contribution increase		25,147	15,712	40,859
Adjust funding for miscellaneous expenses		(2,955,742)	2,000,000	(955,742)
Reduce funding for capital bond payments		(65,091)		(65,091)
Reduce capital funding from special funds			(5,997,398)	(5,997,398)
Total ongoing funding changes	3.93	(\$579,006)	(\$2,471,653)	(\$3,050,659)
<b>One-time funding items</b>				
Add one-time funding from the strategic investment and improvements fund for extraordinary repairs			\$1,440,465	\$1,440,465
Total one-time funding changes	0.00	\$0	\$1,440,465	\$1,440,465
<b>Total Changes to Base Level Funding</b>	3.93	(\$579,006)	(\$1,031,188)	(\$1,610,194)
<b>2019-21 Total Funding</b>	340.05	\$48,978,409	\$58,053,640	\$107,032,049

**Other Sections for NDSU Main Research Center - Budget No. 640**

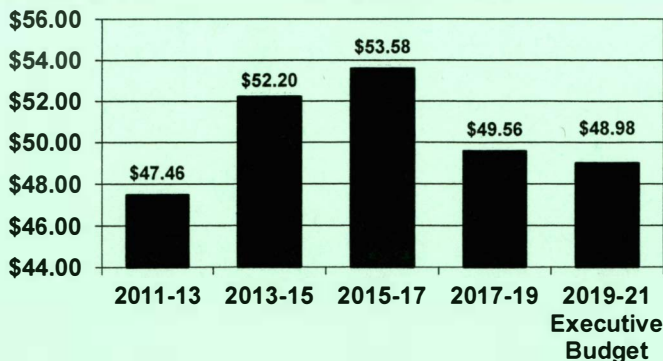
	<u>Executive Budget Recommendation</u>
Additional income appropriation	Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provide that any adjustments be reported to the Office of Management and Budget.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Main Research Center into the 2021-23 biennium.

Department 640 - NDSU Main Research Center

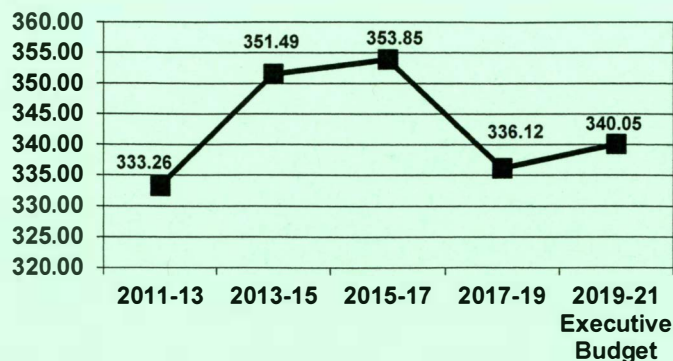
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$47,464,748	\$52,199,521	\$53,581,255	\$49,557,415	\$48,978,409
Increase (decrease) from previous biennium	N/A	\$4,734,773	\$1,381,734	(\$4,023,840)	(\$579,006)
Percentage increase (decrease) from previous biennium	N/A	10.0%	2.6%	(7.5%)	(1.2%)
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	10.0%	12.9%	4.4%	3.2%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

**2013-15 Biennium**

- 1. Added funding for 3 FTE positions, including 1 nematologist, 1 nematology technician, and 1 crop development technician \$655,000

**2015-17 Biennium**

- 1. Added funding for 2 FTE bioinformatics positions \$800,000
- 2. Added funding for precision agriculture operating expenses and grants \$600,000
- 3. Increased funding for equipment (this item was affected by August 2016 budget reductions) \$550,000

**2017-19 Biennium**

- 1. Reduced funding for salaries and wages, including removal of 17.73 FTE positions (\$1,946,615)
- 2. Reduced funding for operating expenses (\$355,589)
- 3. Restored funding for equipment \$260,000
- 4. Additional budget reductions and funding adjustments (\$3,239,879)

**2019-21 Biennium (Executive Budget Recommendation)**

- 1. Reduces general fund support for miscellaneous expenses (\$2,955,742)

**Department 649 - Agronomy Seed Farm  
House Bill No. 1020**

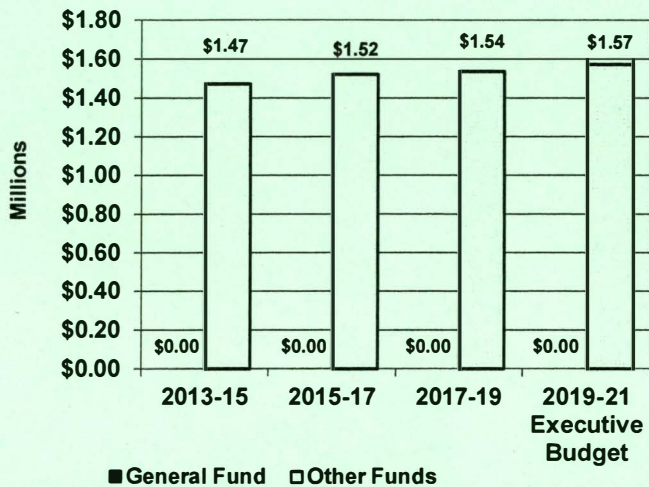
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	3.00	\$0	\$1,571,648	\$1,571,648
2017-19 Legislative Appropriations	3.00	0	1,536,129	1,536,129
Increase (Decrease)	0.00	\$0	\$35,519	\$35,519

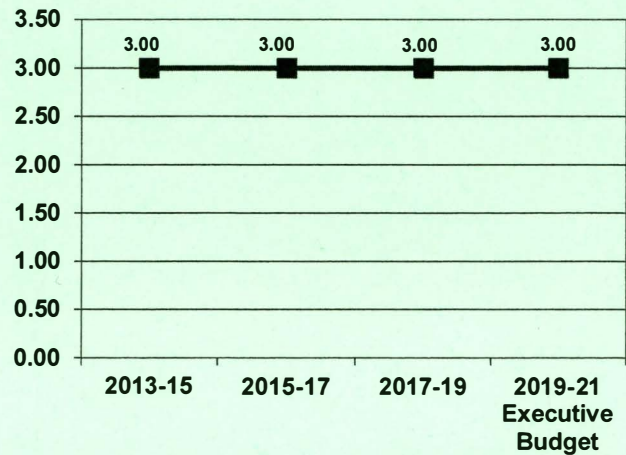
**Ongoing and One-Time Other Funds Appropriations**

	Ongoing Other Funds Appropriation	One-Time Other Funds Appropriation	Total Other Funds Appropriation
2019-21 Executive Budget	\$1,571,648	\$0	\$1,571,648
2017-19 Legislative Appropriations	1,536,129	0	1,536,129
Increase (Decrease)	\$35,519	\$0	\$35,519

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$0	\$1,571,648	\$1,571,648
2019-21 Base Level	0	1,536,129	1,536,129
Increase (Decrease)	\$0	\$35,519	\$35,519

Attached as an appendix is a detailed comparison of the executive budget to the agency's base level appropriations.

**Executive Budget Highlights**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$21,393 relates to salary increases, \$11,337 is for health insurance increases, and \$2,789 is for retirement contribution increases	\$0	\$35,519	\$35,519

**Other Sections Recommended to be Added in the Executive Budget  
(As Detailed in the Attached Appendix)**

**Additional income appropriation** - Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**FTE position adjustments** - Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget.

**Unexpended general fund - Excess income** - Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

**Major Related Legislation**

At this time, no major legislation has been introduced affecting this agency.



**Agronomy Seed Farm - Budget No. 649**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	<b>Executive Budget Recommendation</b>			
	<b>FTE Positions</b>	<b>General Fund</b>	<b>Other Funds</b>	<b>Total</b>
<b>2019-21 Biennium Base Level</b>	3.00	\$0	\$1,536,129	\$1,536,129
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes				\$0
Salary increase			\$21,393	21,393
Health insurance increase			11,337	11,337
Retirement contribution increase			2,789	2,789
<b>Total ongoing funding changes</b>	0.00	\$0	\$35,519	\$35,519
<b>One-time funding items</b>				
No one-time funding items				\$0
<b>Total one-time funding changes</b>	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$0	\$35,519	\$35,519
<b>2019-21 Total Funding</b>	3.00	\$0	\$1,571,648	\$1,571,648

**Other Sections for Agronomy Seed Farm - Budget No. 649**

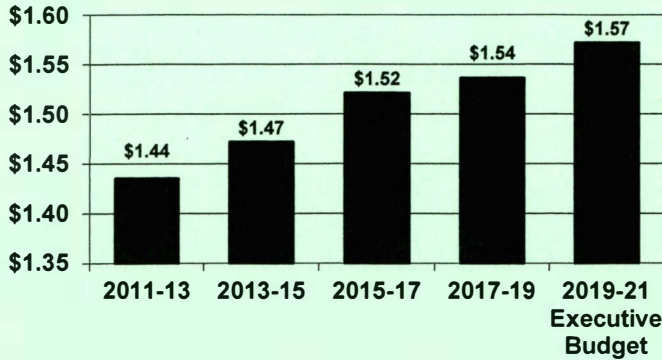
	<b>Executive Budget Recommendation</b>
Additional income appropriation	Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.

Department 649 - Agronomy Seed Farm

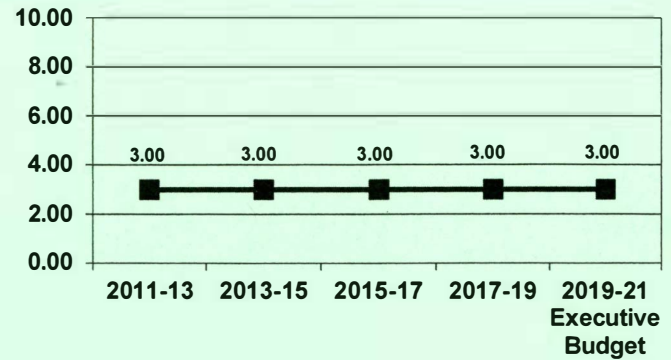
## Historical Appropriations Information

### Ongoing Other Funds Appropriations Since 2011-13

Ongoing Other Funds Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$1,435,168	\$1,471,759	\$1,521,007	\$1,536,129	\$1,571,648
Increase (decrease) from previous biennium	N/A	\$36,591	\$49,248	\$15,122	\$35,519
Percentage increase (decrease) from previous biennium	N/A	2.5%	3.3%	1.0%	2.3%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	2.5%	6.0%	7.0%	9.5%

### Major Increases (Decreases) in Ongoing Other Funds Appropriations

**2013-15 Biennium**

1. No major changes \$0

**2015-17 Biennium**

1. No major changes \$0

**2017-19 Biennium**

1. No major changes \$0

**2019-21 Biennium (Executive Budget Recommendation)**

1. No major changes \$0

**GOVERNOR'S RECOMMENDATION FOR THE  
NORTH DAKOTA STATE UNIVERSITY EXTENSION  
SERVICE AS SUBMITTED BY THE  
OFFICE OF MANAGEMENT AND BUDGET**

**SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds as may be necessary, are appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, and from special funds derived from federal funds and other income, to the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm for the purpose of defraying the expenses of the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as follows:

Subdivision 1.

NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE

	Base Level	Adjustments or Enhancements	Appropriation
Extension Service	\$51,188,489	\$1,935,763	\$53,124,252
Soil conservation committee	1,091,520	0	1,091,520
Total all funds	\$52,280,009	\$1,935,763	\$54,215,772
Less estimated income	26,646,689	1,240,295	27,886,984
Total general fund	\$25,633,320	\$695,468	\$26,328,788
Full-time equivalent positions	242.51	0.00	242.51

Subdivision 2.

NORTHERN CROPS INSTITUTE

	Base Level	Adjustments or Enhancements	Appropriation
Northern Crops Institute	\$3,642,721	\$160,899	\$3,803,620
Total all funds	\$3,642,721	\$160,899	\$3,803,620
Less estimated income	1,755,830	142,023	1,897,853
Total general fund	\$1,886,891	\$18,876	\$1,905,767
Full-time equivalent positions	12.80	0.00	12.80

Subdivision 3.

UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

	Base Level	Adjustments or Enhancements	Appropriation
Upper great plains transportation institute	\$22,618,201	(\$196,779)	\$22,421,422
Total all funds	\$22,618,201	(\$196,779)	\$22,421,422
Less estimated income	18,717,068	240,154	18,957,222
Total general fund	\$3,901,133	(\$436,933)	\$3,464,200
Full-time equivalent positions	43.88	0.00	43.88

Subdivision 4.

MAIN RESEARCH CENTER

	Base Level	Adjustments or Enhancements	Appropriation
Main Research Center	\$109,217,936	(\$2,185,887)	\$107,032,049
Total all funds	\$109,217,936	(\$2,185,887)	\$107,032,049
Less estimated income	59,084,828	(1,031,188)	58,053,640
Total general fund	\$50,133,108	(\$1,154,699)	\$48,978,409
Full-time equivalent positions	340.05	0.00	340.05

Subdivision 5.

RESEARCH CENTERS

	Base Level	Adjustments or Enhancements	Appropriation
Dickinson Research Center	\$6,825,551	(\$118,534)	\$6,707,017
Central grasslands research center	3,423,624	(33,939)	3,389,685
Hettinger research center	4,975,133	9,565	4,984,698
Langdon research center	2,964,607	3,810	2,968,417
North central research center	4,953,652	35,851	4,989,503
Williston research center	5,118,890	(1,271)	5,117,619
Carrington research center	9,175,491	270,370	9,445,861
Total all funds	\$37,436,948	\$165,852	\$37,602,800
Less estimated income	20,281,691	525,551	20,807,242
Total general fund	\$17,155,257	(\$359,699)	\$16,795,558
Full-time equivalent positions	109.81	0.00	109.81

Subdivision 6.

AGRONOMY SEED FARM

	Base Level	Adjustments or Enhancements	Appropriation
Agronomy Seed Farm	\$1,536,129	\$35,519	\$1,571,648
Total Special funds	\$1,536,129	\$35,519	\$1,571,648

Full-time equivalent positions	3.00	0.00	3.00
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Subdivision 7.

BILL TOTAL

	Base Level	Adjustments or Enhancements	Appropriation
Grant total general fund	\$98,709,709	(\$1,236,987)	\$97,472,722
Grant total other funds	128,022,235	1,152,354	129,174,589
Grand total all funds	\$226,731,944	(\$84,633)	\$226,647,311

**SECTION 2. ONE-TIME FUNDING - EFFECT ON BASE BUDGET - REPORT TO SIXTY-SEVENTH LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fifth legislative assembly for the 2017-19 biennium and the 2019-21 one-time funding items included in the appropriation in section 1 of this Act:

One-Time Funding Description	2017-19	2019-21
Seed Cleaning Plants	\$1,500,000	\$0
Road and bridge asset management system	300,000	0
Junior master gardener program	15,000	0
Extension service web strategy & content re-imaging	0	345,000
Extraordinary repairs	0	1,440,465
<b>Total all funds</b>	<b>\$1,815,000</b>	<b>\$1,785,465</b>
<b>Total other funds</b>	<b>1,700,000</b>	<b>1,440,465</b>
<b>Total general fund</b>	<b>\$115,000</b>	<b>\$345,000</b>

The 2019-21 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The extension service and main research center shall report to the appropriations committees of the sixty-seventh legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2019 and ending June 30, 2021.

**SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount included in the grand total special funds appropriation line item in section 1 of this Act, any other income, including funds from federal acts, private grants, gifts, and donations, or from other sources received by the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, except as otherwise provided by law, is appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Williston research extension center shall report to the sixty-seventh legislative assembly on amounts received and spent from mineral royalties, leases, or easements in the biennium beginning July 1, 2017, and ending June 30, 2019 and the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural research and education and appropriate branch research center directors, the director of the main research center may transfer appropriation authority within subdivisions 1, 2, 4, and 5 of section 1 of this Act. Any amounts transferred must be reported to the director of the office of management and budget.

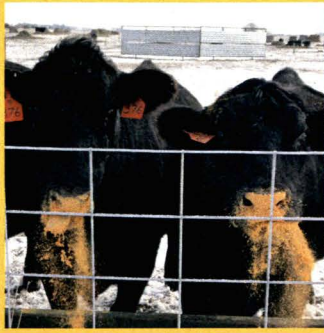
**SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The board of higher education may adjust or increase full-time equivalent positions as needed for the entities in section 1 of this Act, subject to availability of funds. The board shall report any adjustments to the office of management and budget pursuant to this section.

**SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended general fund appropriation authority to and any excess income received by entities listed in section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or revenues are available and may be expended by those entities, during the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 9. EXEMPTION.** The amounts appropriated for the veterinary diagnostic laboratory and the seed cleaning plants contained in subdivision 4 of section 1 of chapter 20 of the 2017 Sessions Laws, are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or related revenues are available and may be expended during the biennium beginning July 1, 2019, and ending June 30, 2021.

1/10/19

NORTH DAKOTA STATE UNIVERSITY



NDSU Extension - Budget No. 630  
 North Dakota Agricultural Experiment Station  
 - Main Station - Budget No. 640  
 - Branch Research Extension Centers - Budget No. 628  
 - Agronomy Seed Farm - Budget No. 649

Dean L. Bresciani - President, North Dakota State University  
 Keith Peltier - Chair, State Board of Agricultural Research and Education  
 Greg Lardy - Associate Vice President, Agricultural Affairs  
 Acting Director, ND Agricultural Experiment Station  
 Interim Director, NDSU Extension

Tim Faller - Acting Director, Dickinson Research Extension Center  
 Kevin Sedivec - Interim Director, Central Grasslands Research Extension Center  
 Chris Schauer - Director, Hettinger Research Extension Center  
 Randy Mehlhoff - Director, Langdon Research Extension Center  
 Shana Forster - Director, North Central Research Extension Center  
 Jerry Bergman - Director, Williston Research Extension Center  
 Blaine Schatz - Director, Carrington Research Extension Center  
 Brian Otteson - Director, Agronomy Seed Farm

# North Dakota Agricultural Experiment Station

## NDSU Extension

**2019-2021  
 Biennial Budget Request**

**House Bill 1020**  
 House Education & Environment Division  
 Representative David Monson, Chair  
 Jan. 10, 2019

[www.ndsu.edu/agforlegislators](http://www.ndsu.edu/agforlegislators)

## Agency Overview

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# NDSU Extension

### Agency Statutory Authority

North Dakota Century Code 15-12.1-17

### Agency Description

North Dakota State University (NDSU) Extension is part of a nationwide, university-based educational system that provides research-based educational programs to citizens in all 53 counties and four American Indian reservations in North Dakota. Programs focus on selected needs and issues affecting the state's agriculture, youth, families, communities and natural resources. The staff is located at state, area and local/county offices. NDSU Extension combines funding from federal, state, county and grant sources to specifically address local concerns.

### Agency Mission Statement

Empower North Dakotans to improve their lives and communities through science-based education. NDSU Extension believes:

- In lifelong learning through transformational education
- That all people belong and deserve respect
- In stakeholder input to guide program development
- In science-based, locally relevant information
- In the value of partners and collaboration

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Education (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

### Agency Future Critical Issues

The mission of NDSU Extension is to empower North Dakotans to improve their lives and communities through science-based education. In response to current and emerging citizen needs, Extension specialists use their expertise in a particular field to develop recommendations, programs, and find solutions to producer and community problems. Extension agents extend these recommendations and programs to all 53 counties and the four American Indian reservations.

Extension's mission, programs, effectiveness and efficiency were comprehensively reviewed by the State Board of Agricultural Research and Education (SBARE) in 2017. The recommendations from the review and the substantial public input to SBARE during their hearings to set agency priorities have established the basis for numerous changes in Extension's organization and programs. The two priority items that were identified were 1) Extension web and digital delivery and 2) Extension operational support. Solidifying these two areas will maintain and enhance Extension's ability to provide transformational education to North Dakotans. (Transformational education is an educational model that combines high quality educational content with trusted, facilitated processes that results in improved economic or environmental conditions or behaviors.)



AH:1  
HB 1020

1/10/19

## **Extension web and digital delivery**

SBARE's review of Extension recommended that Extension optimize the use of technology and target younger age demographics to enhance the effectiveness and efficiency of delivery methods. To accomplish this goal, Extension needs to transition its web strategy to meet future opportunities and ever-changing user needs.

Transitioning Extension's web presence is a significant undertaking because of the complexities of the diversity of materials, the diversity of who generates and manages content, how Extension users access the content (for example, computer, smartphone), and how users interact with the apps and information.

A new strategy will allow Extension to:

- Optimize content for smartphones and tablets, and emerging technologies such as voice-assisted search and augmented reality, especially to reach younger audiences
- Feature more interactive educational modules
- Optimize navigation and search features
- Add more social media use
- Incorporate more apps

Redeveloping Extension's web presence will also be aligned with transformational education, which is the foundation of Extension's mission.

## **Extension operational support**

NDSU Extension is structured to engage with local citizens through the network of county Extension agents and offices. It develops programs that respond to local issues. Extension agents are supported by specialists on campus and at Research Extension Centers. Using their specialized expertise they develop science-based program delivery approaches for agriculture, natural resources, youth, families and communities.

North Dakota receives incredible public value from Extension agents in their local counties as shown by support from several hundred state residents at community hearings and the nearly 150 letters and oral testimony received by SBARE during their hearings. Local educational programs include 4-H, crop and livestock management, health and community leadership, disaster response to droughts or floods, farm business and family finance areas. Complex issues such as soil health, nutrient management, cropping systems, herbicide and insect resistance, drought response and livestock management, and leadership programs were identified as priorities by North Dakota stakeholders for enhanced support.

To sustain local delivery of Extension programs and services, additional funding is needed to support Extension's partnership with counties. To maintain the effectiveness and efficiency of Extension specialists, increased operating support is needed to continue their development and delivery of high-impact programs for North Dakota.

## NDSU Extension

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# 2017-19 Legislation that Included Reporting Requirements to 2019 Appropriation Committees

### SB2020 (NDSU Research & Extension, & Agronomy Seed Farm)

#### SECTION 3. ONE-TIME FUNDING — EFFECT ON BASE BUDGET — REPORT TO SIXTY-SIXTH

**LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fourth legislative assembly for ... the 2017-19 biennium one-time funding items included in the appropriation in section 1 of this Act:

<u>One-Time Funding Description</u>
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Junior master gardener program — \$15,000
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The 2017-19 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The extension service shall report to the appropriations committees of the sixty-sixth legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2017, and ending June 30, 2019.

**Status:** received; funds allocated



ATT 1 HB1020  
1/10/19

# NDSU Extension Program Initiatives

Final Ranking by SBARE - May 3, 2018

NDSU

EXTENSION

PROGRAM INITIATIVE

## Extension Operational Support

**JUSTIFICATION:** NDSU Extension is structured to respond to locally identified needs with science-based education through Extension agents who have strong relationships in their communities. Extension agents are supported by specialists on campus and at Research Extension Centers. These specialists have specialized expertise to develop science-based recommendations and training programs for agriculture, natural resources, families and communities. The Center for 4-H Youth Development supports youth programs across the state.

### COUNTY DELIVERY/EXTENSION AGENTS VALUED

In late 2017 and early 2018, the State Board of Agricultural Research and Education solicited citizen input on priorities for the upcoming legislative session. The board received nearly 150 pieces of written or oral testimony, which emphasized the importance of Extension to the citizens of North Dakota and highlighted the value of the local presence of Extension in communities across the state.

Because NDSU Extension funding was reduced by 13.9 percent for the 2017-2019 biennium, Extension and the North Dakota County Commissioners Association collaborated on a new cost-share agreement to fund Extension agents. Under that agreement, the counties would fund 40 percent of the agent's salary and benefits, and Extension would fund the remaining 60 percent.

This agreement increases the support that counties provide by approximately \$820,000 on a statewide basis for the biennium. While the counties are very supportive of the services of their local Extension agent, they are on record in seeking *"to restore state funding so that a longer-term funding model that reduces the property tax burden can be achieved."*

### STATE PROGRAM SUPPORT VITAL

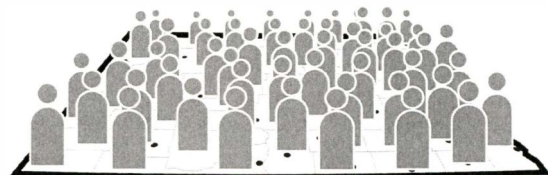
NDSU Extension specialists provide valuable leadership for complex issues such as soil health, nutrient management, cropping systems, herbicide and insect resistance, drought response and livestock management, and leadership programs such as Rural Leadership North Dakota. Specialists rely on operating funds to develop and travel to training workshops and field events, soil health café talks and training events on nitrate testing for drought damaged forages, etc. They train Extension agents, ag professionals and consultants, and agency partners, which is multiplied to help support the \$9 billion agricultural industry in North Dakota.

**NEED:** North Dakota receives incredible public value from Extension agents in their local counties. To sustain local delivery of Extension programs and services, additional funding is needed so Extension can continue to partner with counties to fund Extension agents. To maintain the effectiveness and efficiency of Extension specialists, they need increased operating support to continue their development and delivery of high-impact programs for North Dakota.

**Operating support - \$870,000  
(\$670,000 for county programming and  
\$200,000 for state programming)**

## Extension Team Serves North Dakota

- 4-H Youth Development | Crop Management
- Family Economics | Farm Business Management
- Horticulture and Forestry | Human Development and Family Science
- Leadership and Civic Engagement | Livestock Management
- Natural Resource Management | Nutrition, Food Safety and Health



Agents serve local needs



Supported by specialists with  
in-depth expertise

NDSU EXTENSION

EXTENDING KNOWLEDGE >> CHANGING LIVES

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708. ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.



# Agriculture and Natural Resources

Providing the educational programs to help people transform air, water and soil into food, fuel, fiber and a sustainable environment

Agriculture is critical to the economy of North Dakota and routinely accounts for approximately 30 percent (\$9.1B in 2015) of all business activity in the state. Extension Agriculture and Natural Resources (ANR) specialists and county-based agents work to ensure that the latest research-based information is available to all who seek it. These same specialists and agents continually probe and listen for agriculture's next "need," and develop innovative educational programs and field studies to meet those needs as fast as possible.



**6,932** downloads of the Extension **Pest Management App** since 2014, combining the Extension Plant Disease Management, Insect Control and Weed Control guides into a digital form

The app has the potential to save future printing costs of \$3 per copy

Approximately **15,000** producers attended county Extension **farm bill education meetings** in 2014



**90%** of respondents used the **Extension-developed farm bill decision aid tool** when making their final decision with FSA; of these respondents, **83%** used the **decision tool for ALL** of their acres

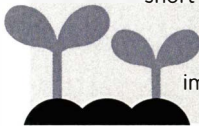
As of Dec. 2018, an estimated **\$1.3 billion** in farm bill payments were made to North Dakota producers since that training

Soil health networking used

**high tech** (twitter and video) and **low tech** (café talks)

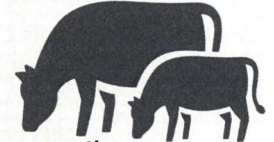
ways to share science-based and applied information to individuals with a common interest in soil health

This allowed everyday observations and short bursts of information as well as follow ups with personalized information implemented by producers



Forage testing, along with follow-up consultations and recommendations by Extension agents and specialists, prevented over

**16,000** cattle from being exposed to toxic forages during the 2017 drought



Other Extension drought responses:

- developed a platform to streamline **weekly drought condition reporting**
- played a key role in **testing forage and water** for producers
- **answered questions** through one-on-one conversations, articles and videos, and hosting meetings
- **provided information to producers** through meetings, presentations, media interviews, news releases and columns, publications and web-based materials

N.D. producers using precision ag technologies of all kinds realized an **\$88 per acre benefit** compared to producers not using them



Extension has been providing educational programs on precision ag for more than **23 years**

More than **3,800** samples processed and **26,400 tests** performed at the self-funded **NDSU Plant Diagnostic Laboratory** in 2017 resulted in **informed pesticide use decisions and economic savings** for North Dakotans



In 2017, **292** North Dakota gardeners **evaluated 106 promising home vegetable and herb varieties**

**99%** of responding households were **introduced to new varieties**

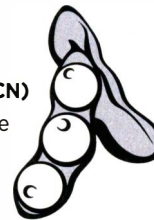
**87%** of responding households reported **more productive gardens**

**89%** of children in responding households who grew vegetables **improved their diets**

**89%** of children in responding households **improved their level of physical activity**



About **3,000** soybean cyst nematode (SCN) samples have been processed since 2013 because of county Extension office test kit distribution, helping growers identify and manage SCN



The value of planting resistant varieties when SCN is present is approximately a **40% yield increase**

For more information on these and other impacts of NDSU Extension, go to [www.ag.ndsu.edu/extension](http://www.ag.ndsu.edu/extension) or contact Charlie Stoltenow at 701.231.7171 or [charles.stoltenow@ndsu.edu](mailto:charles.stoltenow@ndsu.edu).

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## ■ Cropping Systems

- Soybean cyst nematode
- Increasing salinity and sodicity awareness
- Managing weeds under different production systems
- Managing herbicide-resistant weeds
- Prevention of Palmer amaranth incursion into North Dakota
- Managing Cercospora in sugar beets
- Managing root maggot in sugar beets
- Shop Talks: Sugar beet production
- Managing soil water through drainage and irrigation
- Using farm chemicals safely
- Pesticide application certification program
- Managing soil fertility
- Enhancing soybean yield and profitability
- Management of cereal crop diseases
- Wheat midge soil survey
- Management of stored grains
- Integrated pest management
- Introduction to organic agriculture
- Precision agriculture technology and data management

## ■ Farm Business Management

- Managing farm margins and financial decisions
- Ag lenders outlook and professional development
- Determining land values, cash rent and net return on land
- Understanding and coping with farmer/rancher stress issues
- Understanding the farm bill: ARC vs. PLC
- Understanding hedging and other risk management tools
- Price risk management for livestock producers
- Design Your Succession Plan
- Annie's Project - increasing knowledge and involvement of farm women
- Bioenergy and bio-byproduct economics

## ■ Horticulture and Forestry

- Master Gardener program
- Jr. Master Gardener program
- Promoting pollinator conservation
- Trees of Our Town—selecting the right tree species for your community
- Saline soils and shrubs
- Spring Fever Garden Forum
- Garden, horticulture or tree workshops

## ■ Livestock Management

- Stop the Truck—reviewing livestock health records before shipping
- Livestock mortality composting
- Antimicrobial stewardship
- Improving lamb quality and value
- Sheep education for new flocks
- Corn silage quality program
- Manure management
- Managing livestock during a drought
- Nitrate management in feeds and forage
- Feeding cattle for profit
- Livestock quality assurance
- Bovine emergency response program

## ■ Natural Resources Management

- Setting stocking rates
- Range and pasture management—grazing readiness
- Cover crops for healthy soil
- Reclamation and remediation of soil impacted by oil extraction
- Healthy soil schools
- Sodic soils: Should I tile the field or add an amendment?
- Café Talks: Soil Health—guiding farmer learning through networks
- Preparing for floods

## ■ Services Offered

- Crop and Pest Report—weekly
- Market Adviser column—monthly
- Plant Diagnostic Laboratory
- Certified Crop Adviser School
- Scout School
- Nitrate testing
- Feed testing
- Livestock water testing
- Variety trials and demonstrations

## ■ Youth Programs

- Livestock Camp
- Judging teams
- Kids, Compost, Crops and Consumption

This is a partial listing only. Please check with your local Extension office for more programs.

# Extension Family and Community Wellness

Developing healthy people living in healthy, vibrant communities

North Dakota State University Extension family and community wellness agents and specialists enhance the lives of individuals, families and producers through educational experiences, and encourage leadership and service to the community. You will find them at work in your county, at regional Parent and Family Resource Centers and on NDSU's main campus.



**2,447**

views of Field to Fork webinars, designed to improve knowledge of growing, transporting, processing and preserving produce

**55%** of participants surveyed will change practices

Knowledge of subjects presented increased from **52% to 82%**



More than **300** people from **737** North Dakota organizations

have attended Lead Local since 2016, helping participants **feel more confident to run for and serve on boards, councils and committees**

*"I had been thinking of running for City Council for some time, and after taking the Lead Local program, it really gave me that extra confidence to move forward with that decision. The process of running for and winning the City Council seat was a great experience, and I'm using the tools from Lead Local to help me be the best representative I can be."*

- Lacey Hinkle, Cavalier, N.D.

Participants in the Diabetes Prevention Program reported an average **5.7% loss of their initial body weight**, along with improved levels of blood glucose, cholesterol and blood pressure



A body weight reduction of just 5 percent decreases an individual's risk of developing type II diabetes by 58 percent

Diabetes costs \$700 million in North Dakota each year



**98%** of farmers/ranchers in the Design Your Succession Plan program indicated they were likely to work on their transition plan in the next six months

*"So many farm families start with great intentions and expectations but fail to follow through because the succession planning process seems so daunting. A facilitator can help identify the client's needs and break the process down into steps for them."*

- Pam Geiger, lead tax specialist and farm succession planner for Farm Credit Services of Mandan, on the Design Your Succession Plan program

NDSU Extension food and nutrition education programs reached more than

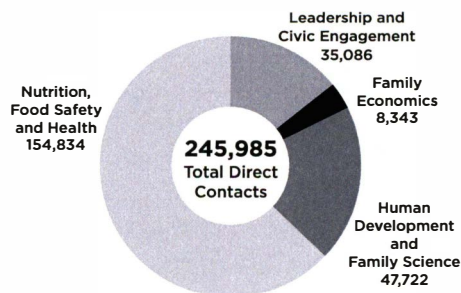
**154,000** people in 2017, helping participants learn to eat healthfully,

which benefits them as well as all of North Dakota by decreasing the collective health-care costs of poor nutrition and obesity

Obesity results in an estimated \$147 billion in direct medical costs in the U.S.



Over **1,700 hours** of parent education classes are provided to **7,500** North Dakota parents and other adults each year, strengthening families and improving the well-being of children which reduces costs spent on child welfare and lowers crime by adults



For more information on these and other impacts of NDSU Extension, go to [www.ag.ndsu.edu/extension](http://www.ag.ndsu.edu/extension) or contact Lynette Flage at 701.231.7782 or [lynette.flage@ndsu.edu](mailto:lynette.flage@ndsu.edu).

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## Family and Community Wellness Educational Programs

### ■ Personal and Family Finance

[www.ag.ndsu.edu/money](http://www.ag.ndsu.edu/money)

**Design Your Succession Plan** — This multisession program assists farm and ranch families in getting started on their succession plan and shaping the future ownership of their business.

**Annie's Project** — This workshop empowers farm women to be better business partners through a series of educational sessions covering the business of farming and ranching.

### ■ Food and Nutrition

[www.ag.ndsu.edu/food](http://www.ag.ndsu.edu/food)

**Health and Nutrition** — Multiple health and nutrition programs have been developed for various audiences and include On the Move to Better Health, MyPlate resources, Faith Communities Alive!, Nourishing Boomers and Beyond, and Eat Smart. Play Hard. Together.

**Diabetes Prevention Program** — This community-based, lifestyle-change program offers diabetes prevention education and support for people with prediabetes and those at high risk for prediabetes.

**The Family Table** — This is an online resource with activities, handouts, newsletters and more to encourage family meals, which provide numerous benefits to children and parents.

**Food Preparation and Preservation** — Online materials assist in preparing and preserving healthful and safe food. Food preservation publications include information on canning, drying, freezing, pickling, fermenting, working with wild game, meat and fish, equipment needed and how to store foods properly.

**Smarter Lunchrooms** — This program nudges kids to eat more healthfully at school. Our Smarter Lunchrooms technical assistance providers work to improve the environment and practices in schools to positively influence healthful eating.

### ■ Children, Parents and Families

[www.ag.ndsu.edu/cff](http://www.ag.ndsu.edu/cff)

**Nurturing Parenting Program** — It offers family-based parent education programs that help families establish a nurturing way of life and develop healthier, stronger relationships.

**Parents Forever** — This provides education to aid families in transition (divorce education). It explores the effects of divorce on children, managing stress in family transitions and maintaining respectful, healthy relationships.

**Mental and Behavioral Health** — Online information on selected resources and programs to increase awareness and assist individuals in seeking out support for needs related to mental, emotional, and behavioral health. Website includes resources for farmers and ranchers in times of stress.

### ■ Aging and Wellness

[www.ag.ndsu.edu/aging](http://www.ag.ndsu.edu/aging)

**Powerful Tools for Caregivers** — This program supports caregivers of spouses, partners, adult children, children with special needs, other family members, neighbors and friends.

**Stepping On** — The program assists older adults in reducing falls and learning safety strategies in everyday life.

### ■ Leadership Development and Civic Engagement

[www.ag.ndsu.edu/ccv](http://www.ag.ndsu.edu/ccv)

**Rural Leadership North Dakota (RLND)** — This 18-month statewide leadership development program includes personal skill development and seminars with experts.

**Lead Local** — This one-day training helps aspiring, elected and appointed leaders be better prepared to serve on boards, councils and committees.

**Building Tomorrow's Leaders and Youth Lead Local** — Comprehensive youth leadership programs empower high school youth to build their confidence and skills to lead and get involved civically.

**Marketing Hometown America** — A community study circle process helps residents better understand community assets and what people are looking for as they relocate to a rural community.



# North Dakota 4-H

Inspiring North Dakota youth to reach their full potential

4-H prepares youth for success and the challenges facing North Dakota. It contributes to the development of new leaders, encourages innovation and entrepreneurship, teaches good stewardship, and helps youth acquire important life skills preparing them to be career- and work-ready.

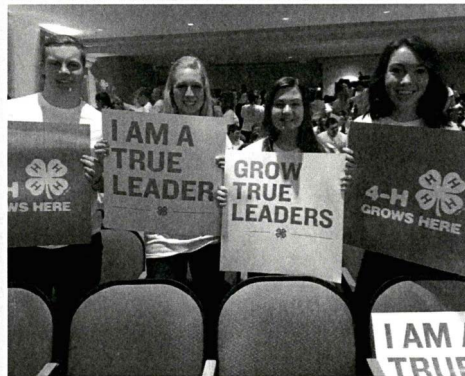
As a non-formal education program, 4-H youth LEARN by choosing an area of interest, get good at something, develop a positive outlook about their learning, direct their own learning and demonstrate it in a number of ways.

4-H youth also LEAD by assuming greater responsibility and accountability, developing good people skills, serving in leadership roles and leading in giving back to their communities.



## LEARNING

North Dakota 4-H youth develop life skills of teamwork, decision making, critical thinking and public speaking by engaging in a variety of learning experiences. These skills, coupled with mastering content and integrating knowledge, develop exceptional workforce competencies, making youth ready for post-secondary education, work and life.



## LEADING

North Dakota 4-H prepares youth as future leaders through intentional experiences in leading. Beginning at the elementary school age, youth in 4-H become involved as active, engaged citizens and leaders in their local clubs and communities. Youth grow as citizen leaders by finding and using their voice to address local issues and needs, and participate actively in discussions and programs that benefit others.

Youth throughout the U.S., including North Dakota, participated in research to define and measure positive youth development (Source: Lerner and Lerner 2011). **Compared with their peers, youth involved in 4-H programs are:**

**2X** more likely to participate in STEM activities

**75%** of youth participants in the Incredible Wearables/ National Youth Science Day Experiment reported it helped them learn how to use science to solve problems

**2X** more likely to be civically active

**1,000+** youth demonstrate leadership skills through 4-H club offices, 4-H Ambassadors, or special projects

**2X** more likely to make healthier choices

Youth participating in the Impact Teen Driver program reported a **60%** increase in their ability to make good decisions as a driver and a passenger

**4X** more likely to give back to their communities

**777** volunteer service hours contributed to the state by North Dakota 4-H Ambassadors in 2016-17

## North Dakota 4-H in 2017-18

**6,347** enrolled 4-H members

**2,373** volunteers

**359** youth volunteers

**1,002** youth in 4-H camping programs

Total youth participants by residence:

**26%** from farms

**38%** from towns under 10,000 and rural non-farms

**36%** from towns and cities over 10,000

**24,491** total youth participants



**19%**  
4-H enrollment increase in past five years

For more information on these and other impacts of NDSU Extension, go to [www.ag.ndsu.edu/extension](http://www.ag.ndsu.edu/extension) or contact Brad Cogdill at 701.231.7259 or [brad.cogdill@ndsu.edu](mailto:brad.cogdill@ndsu.edu).

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4-H is North Dakota State University Extension's youth development program. It is available for youth ages 5 to 18.

4-H accomplishes its work through local Extension staff, with support from Extension specialists, who lead the nonformal educational program through clubs, school enrichment, camping, afterschool and special-topic settings in their communities. 4-H gets its capacity through the work of adults who serve as volunteer leaders. They guide the youth with leadership and organizational support.

4-H Youth Development is an organization and a program.

As an organization, youth join 4-H and the adult volunteers are approved to serve as leaders to create a safe environment for learning through effective youth-adult relationships. As part of a high-quality 4-H experience, youth are expected to:

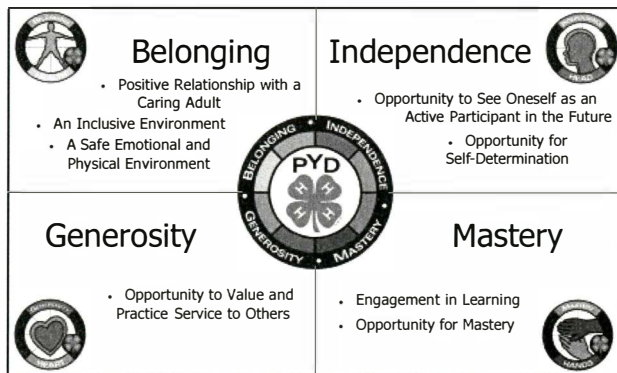
- Select projects for in-depth study
- Record what they learn (record books)
- Attend meetings regularly and be active participants
- Complete community service projects (or become involved in a group community service project)
- Participate in some form of public presentation
- Have projects evaluated (usually part of 4-H achievement days or a fair)

As a program, 4-H offers planned learning experiences at the county, multicounty, state, regional and national levels related to:

- Animal science
- Communication skills
- Clothing, home and consumerism
- Creativity
- Environment, outdoor skills and shooting sports
- Food, nutrition and health
- Plant, soil and range science
- Preventing and reducing youth risk behavior
  - Boundaries and Boundaries Jr.
  - Impact Teen Drivers
  - Living Online: Middle School, High School and Caring Adults
  - Overdone: Practicing Wellness in Busy Families
- Science, engineering and technology
- Service to others
- Youth camping at the North Dakota 4-H Camp
- Youth leadership and civic engagement

4-H is authorized by the U.S. Congress, and at the federal level, is the responsibility of the U.S. Department of Agriculture (USDA), National Institute for Food and Agriculture (NIFA). The authority for the program is assigned to the state's land-grant university (North Dakota State University) and its Extension program. USDA establishes the use of the 4-H name and emblem, and accountability measures related to fund-raising to support the 4-H program. NDSU Extension's 4-H Youth Development Program has the responsibility and authority to define what is and is not a 4-H educational program. It also authorizes counties to use the federally protected 4-H name and emblem, and establishes statewide policy and accountability for the 53 county programs where 4-H is conducted.

## 4-H's foundation is the Essential Elements of Positive Youth Development



Source: University of Illinois Extension

## Agency Overview

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# Main Research Station

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

ND Constitution Article XIX; North Dakota Century Code Chapter 15-12.1

### Agency Description

The North Dakota State University Main Research Station is located on the campus of the North Dakota State University of Agriculture and Applied Science. The station is the administrative location of the North Dakota Agricultural Experiment Station. The station conducts research and coordinates all research activities of the Agricultural Experiment Station. The purpose of the research is the development and dissemination of technology important to the production and utilization of food, feed, fiber, and fuel from crop and livestock enterprises. The research provides for an enhancement of economic development, quality of life, sustainability of production, and protection of the environment. The Main Research Station keeps detailed records of all activities and publishes the information that will be of value to the residents of this state.

### Agency Mission Statement

The agricultural experiment station shall develop and disseminate technology important to the production and utilization of food, feed, fiber, and fuel from crop and livestock enterprises. The research must provide for an enhancement of the quality of life, sustainability of production, and protection of the environment.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Education (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

### Agency Future Critical Issues

SBARE carefully considered stakeholder input and has identified the following Agency Future Critical Issues:

#### A. Agri biome Initiative

Knowledge of the human microbiome has revolutionized medicine and nutrition and fueled the \$45 billion probiotics industry. A similar revolution is happening in agriculture, where the microbiomes of crops, soils, and livestock (the Agri biome) are being harnessed to increase productivity, efficiency, safety, and quality. Food production must double to meet the global population demand by 2050, despite depleting water resources, shrinking farmland, and rising input costs. The inputs that drove intensive crop production in the 20th century have diminishing returns and may lead to unintended environmental consequences, so the next agricultural revolution must be based on a more sustainable approach that harnesses microbiomes to increase water- and nutrient-use efficiency, stress tolerance, disease resistance, and production of high quality food and agricultural products.

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Microbes were an untapped resource until recently, with just a tiny fraction of the microbial world accessible by traditional research methods. Major scientific breakthroughs now allow all microbes to be readily identified, creating a platform for innovation through the discovery of microbes with desirable traits in agriculture (agricultural probiotics). While all sectors of agriculture can benefit from the development of probiotics, the potential gains in crop and livestock production are as exciting as they are highly relevant to North Dakota. The North Dakota Agricultural Experiment Station (NDAES) has several areas of strength that can support an Agri biome initiative focused on crop and livestock production. These include:

- Strong programs in plant breeding, genetics, and genomics; plant nutrition; plant pathology; soil health; and water quality.
- Strong programs in animal nutrition, physiology, husbandry, genetics, and health as well as range sciences and forages.
- Facilities to study microbiomes from lab to field or herd scale.
- Infrastructures to connect researchers with producers across the state to understand problems, identify solutions, and translate discoveries into practical applications.

Research focused on the rhizosphere microbiome (microbes at the soil-root interface) will have large impacts on productivity, efficiency, and quality of both crops and livestock. In addition to a role in discovery, NDAES has the facilities to test the performance of microbial products at the laboratory, greenhouse, field, and herd scale. These activities would be of benefit to the ND producers as well as provide benefit to the private sector, by ensuring the efficacy of products that may be available in the market. A number of crop and livestock production challenges can be addressed by this initiative, including:

- Nitrogen use efficiency. Less than 50% of nitrogen applied as fertilizer is used by the plant. Unused nitrogen can leach into groundwater or runoff into surface water, causing pollution. Engineering the rhizosphere microbiome to increase nitrogen use efficiency will improve water quality and reduce fertilization costs. Additionally, nitrogen use efficiency in livestock is a critical concern in terms of both productivity gains and environmental stewardship.
- Productivity in saline soils. About 13% of the land area in North Dakota is affected by surface salinity. It is estimated that more than \$150 million in revenue is lost annually in the Red River Valley alone due to salinity-related yield reductions in corn, soybean, wheat, and sugarbeet. One approach to this problem is to transplant microbes from salt tolerant plants to salt sensitive crops to increase production yields in saline soils.
- Livestock exist in a uniquely symbiotic relationship with the Agri biome, including the microbiome present with the livestock, the soil, and their feedstuffs. In North Dakota, this is especially important as most of our livestock enterprises include ruminants, which rely on microbes to ferment forages and other feedstuffs. A number of areas of research may yield significant impacts, including:
  - o Digestive physiology. Gut microbes are critically important to nutrition, and they impact nutrient fermentation, nutrient use efficiencies, digestion, absorption, and the epigenome. Enhanced understanding of the gut agri biome will improve growth, digestion, and production efficiencies; while at the same time enhancing sustainability and environmental stewardship.
  - o Animal Health. The agri biome plays an important role in animal health. Obtaining a better understanding of the role the agri biome has on animal health should lead to advances in vaccine and antimicrobial efficacy, as well as improved disease resistance in livestock.
  - o Food Quality and Storage Characteristics. A better understanding of the role of the agri biome on food quality and storage characteristics could lead to enhanced storage methods, higher food quality products, longer shelf life, and reductions in food borne illnesses.
- Drought tolerance. The drought tolerance of crops can be enhanced by incorporating microbes that are adapted to drought conditions into the microbiome of crops and forages grown in dry conditions.
- Food Quality and Health. Engineering the microbiome to increase phytonutrients and create functional foods to counter diet-linked chronic diseases such as diabetes.

## **B. Precision Agriculture**

The future of farming will be 'smart farming' that incorporates computer systems to make real-time decisions based on digital data (artificial intelligence) of the conditions in the field. The smart farm is expected to have increased production efficiency, reduced labor costs, and better net return, while providing more protection to the environment. These technological innovations in Precision Ag are taking place at a fast pace, with new technologies coming to market every year. A 2018 survey by Glacier Farm Media ([www.farmmedia.com](http://www.farmmedia.com)) indicates that 89-90% of farmers surveyed felt that using sensors, digital data, and autonomous systems can decrease production cost, increase yield, and/or save time. Unmanned Aerial Systems (UAS), for example, used in Precision Ag are expected to contribute up to 80% of the \$80 billion UAS market by 2025.

North Dakota has a large concentration of companies involved in Precision Ag that seek partnerships with NDSU to expand and field validate their technologies. Agricultural producers need research-based information on profitable Precision Ag technologies to adopt, best utilize, or optimize these technologies on individual farms, and learn how to convert the huge amount of data collected in the field to appropriate decisions.

Some of the more recent issues with chemical application (e.g., Dicamba drift), effective management of resistant weeds, nutrient management in crops, assessing weather damage on crops, as well as managing fields for better soil health, etc. are just some of the areas Precision Ag can contribute.

### **Return on Investment**

Precision Ag research at NDSU will benefit the North Dakota agricultural industries by increasing crop yield and efficiency of food production, and reducing inputs. Adopting Precision Ag can result in an economic benefit of as much as \$165/A in North Dakota (Schimmelpfennig, USDA, 2016). Precision Ag can improve both soil health and water quality by minimizing runoff of inputs. It also can improve grain quality through the timely and precise application of inputs to the developing crops, resulting in additional benefits to the producers and environment.

Investing in Precision Ag research will facilitate partnerships with the private sector, both established and startup technology companies. Precision Ag scientists at NDSU can address research needs in the state and collaboration requests from major agriculture and technology companies in the state. North Dakota has a large number of startup companies, and many major Precision Ag technology providers, which makes the state well positioned to be a leader in Precision Ag. Enhancing a strong research program at NDSU is critical to complementing these entrepreneurial efforts.

Currently, we have gaps in expertise in the following areas:

- Big data management and machine learning in Precision Ag: Vast amounts of data are collected by sensors, unmanned aerial systems, and agriculture machinery. Research is needed to develop crop management decisions by applying machine learning methods to these data and to develop data management strategies necessary for smart farms of the 21st century.
- Site-specific chemical application: Examples of issues that need to be addressed include monitoring herbicide injury (e.g., glyphosate injury in crops or Dicamba in non-tolerant crops), establishing conditions contributing to herbicide drift, temperature inversion effects, site-specific weed management, and herbicide resistance management in weeds. Research is also needed on precision management of insect pests and diseases.
- Robotics and autonomous systems: Machinery manufacturers are requesting partnerships to develop sensors and intelligent systems that make their machines more autonomous (where a computer makes decisions rather than an operator). Major industries are approaching NDSU for research collaboration, as autonomous and robotic systems can improve operational efficiency, and reduce labor requirements.
- Nutrient management: Site-specific management of nutrients in crops can improve soil health. Precision Ag technologies can help in monitoring soil problems and manage crop by square inch to improve soil health.

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- Economic viability of Precision Ag technologies: new Precision Ag technologies are coming at a fast pace without adequate independent study on their economic viability. Therefore, it is important to evaluate technologies for their economic viability. Also, the crop budgets handled by most farm management software need to be modified to include site-specific input application regimes.

### **C. Enhancing Research Capacity - Increased Support for Operations**

Agricultural research is a labor-intensive effort spanning a number of disciplines to improve the profitability of farming, ranching, and agribusiness enterprises. A strong focus of the research effort at the NDAES is to work on providing solutions to problems that affect crop and livestock production, improve production efficiency, product quality, and environmental sustainability.

Operating costs for research activities continue to increase. Scientists at the Research Extension Centers (RECs) and the Main Station receive high levels of grant funding from a variety of agencies. However, inflationary pressures on operating costs, such as state motor pool leasing, equipment repairs, and supplies, reduce our ability to respond to current and future production-related issues affecting crop and livestock producers. In addition, it is critically important that our scientists remain relevant by incorporating new technologies into our research programs, which allows the NDAES to emulate the rapidly changing technology environment that exists in 21st Century Agricultural systems.

An increase in operating funds for RECs (\$30,000/REC/biennium) was last received in the 2015-17 session. Funds for the 2019-21 biennium would be used to offset increasing costs of fuel, supplies, minor equipment, and timeslip (student) labor needed for our existing research projects.

The Oakes Irrigation Site has been funded through the Garrison Conservancy District. This funding will no longer be available in the near future. The facility has been supervised through the Carrington REC, but is entirely grant supported. Stakeholders in the region have made commitments to provide support for the Oakes site, including a gift of 40 acres to increase the research land area. The facility carries out research on high-value irrigated crops for the SE region of ND.

North Dakota Agricultural Experiment Station

## 2017-19 Legislation that Included Reporting Requirements to 2019 Appropriation Committees

### SB2020 (NDSU Research & Extension, & Agronomy Seed Farm)

#### SECTION 3. ONE-TIME FUNDING – EFFECT ON BASE BUDGET – REPORT TO SIXTY-SIXTH

**LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fourth legislative assembly for ... the 2017-19 biennium one-time funding items included in the appropriation in section 1 of this Act:

One-Time Funding Description

Seed cleaning plant; Other Fund authorization - \$1,500,000

The 2017-19 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The main research center shall report to the appropriations committees of the sixty- sixth legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2017, and ending June 30, 2019.

- Seed Cleaning

**Status:** Fundraising campaign for seed cleaning project underway at Williston REC

#### SECTION 7. DICKINSON RESEARCH EXTENSION CENTER – MINERAL RIGHTS INCOME.

The Dickinson research extension center may spend up to \$755,000 of revenues received during the 2017-19 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the biennium beginning July 1, 2017, and ending June 30, 2019.

**Status:** Oil Revenue received July 1, 2017 to November 30, 2018 - \$114,592

#### SECTION 8. WILLISTON RESEARCH EXTENSION CENTER – MINERAL RIGHTS INCOME.

The Williston research extension center shall report to the appropriations committees of the sixty-sixth legislative assembly on amounts received and spent from mineral royalties, leases, or easements in the biennium beginning July 1, 2015, and ending June 30, 2017, and the biennium beginning July 1, 2017, and ending June 30, 2019.

**Status:** July 1, 2013 to June 30, 2015 - Amounts received \$491,230; Amounts spent \$0

July 1, 2015 to June 30, 2017 - Amounts received \$141,034; Amounts spent \$581,570

July 1, 2017 to November 30, 2018 - Amounts received \$22,640; Amounts spent \$23,883

#### SECTION 12. EXEMPTION.

The amounts appropriated for the veterinary diagnostic laboratory and the seed cleaning plants contained in subdivision 4 of section 1 of chapter 20 of the 2015 Session Laws, are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or related revenues are available and may be expended during the biennium beginning July 1, 2017, and ending June 30, 2019.

Carryover Status	GF Carryover	OF Carryover	Amount Spent 12/31/2018	Status
Seed Cleaning plant NCREC	575,693	1,545,888	565,551	Remaining GF to be spent by 6/30/2019
Seed Cleaning plant CREC	-	1,393,110	602,984	Project to be complete 6/30/2019
Veterinary Diagnostic lab	-	3,675,781	3,461,515	Remainder returned to SIFF (\$214,266)





ATI 1 HB1020  
1/10/19

# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Agribiome Initiative

Knowledge of the human microbiome has revolutionized medicine and nutrition and fueled the \$45 billion probiotics industry. A similar revolution is happening in agriculture, where the microbiomes of crops, soils, and livestock (the Agribiome) are being harnessed to increase productivity, efficiency, safety, and quality. Food production must double to meet the global population demand by 2050, despite depleting water resources, shrinking farmland, and rising input costs. The inputs that drove intensive crop production in the 20th century have diminishing returns and may lead to unintended environmental consequences, so the next agricultural revolution must be based on a more sustainable approach that harnesses microbiomes to increase water- and nutrient-use efficiency, stress tolerance, disease resistance, and production of high quality food and agricultural products.

Microbes were an untapped resource until recently, with just a tiny fraction of the microbial world accessible by traditional research methods. Major scientific breakthroughs now allow all microbes to be readily identified, creating a platform for innovation through the discovery of microbes with desirable traits in agriculture (*agricultural probiotics*). While all sectors of agriculture can benefit from the development of probiotics, the potential gains in crop and livestock production are as exciting as they are highly relevant to North Dakota. The North Dakota Agricultural Experiment Station (NDAES) has several areas of strength that can support an Agribiome initiative focused on crop and livestock production. These include:

- Strong programs in plant breeding, genetics, and genomics; plant nutrition; plant pathology; soil health; and water quality.
- Strong programs in animal nutrition, physiology, husbandry, genetics, and health as well as range sciences and forages.
- Facilities to study microbiomes from lab to field or herd scale.
- Infrastructures to connect researchers with producers across the state to understand problems, identify solutions, and translate discoveries into practical applications.

**REQUEST:** 2.0 FTE scientist and technician (\$355,000 salary and fringe — focusing on microbe-livestock interactions) and 2.0 FTE scientist and technician (\$355,000 salary and fringe — focusing on organismal-plant interactions); \$450,000 operating.

**Total — \$1,160,000**

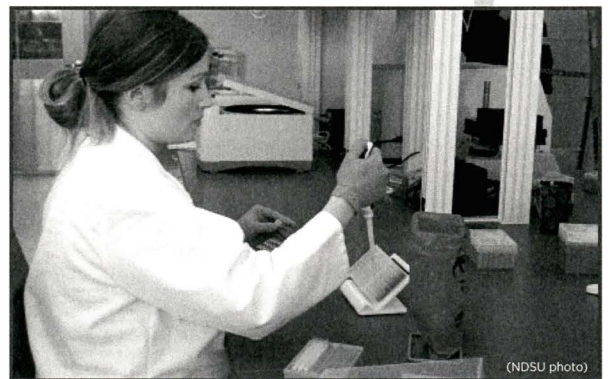
Addressing important areas of the Agribiome related to crop and livestock production will require a multi-faceted approach. While several scientists are already engaged in researching some aspects of the Agribiome, additional scientists will reduce gaps in our existing expertise and move North Dakota to the forefront in this critical area.



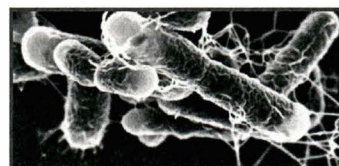
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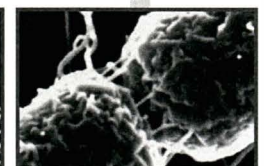
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(NDSU photo)



E. Coli (NDSU photo)



E. Coli biofilm (NDSU photo)

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# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Precision Agriculture

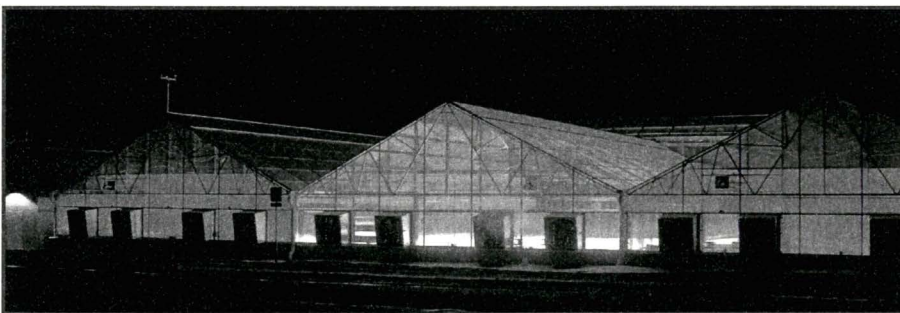
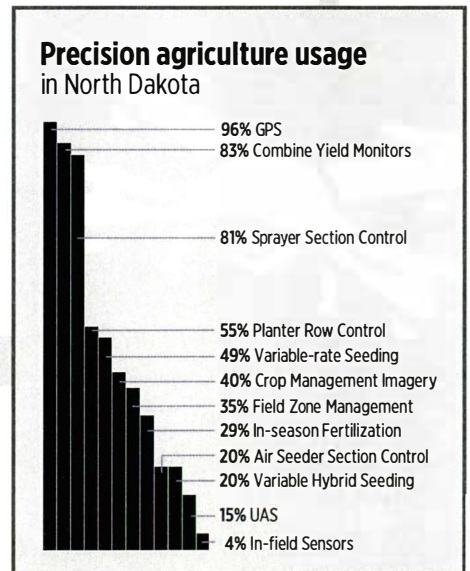
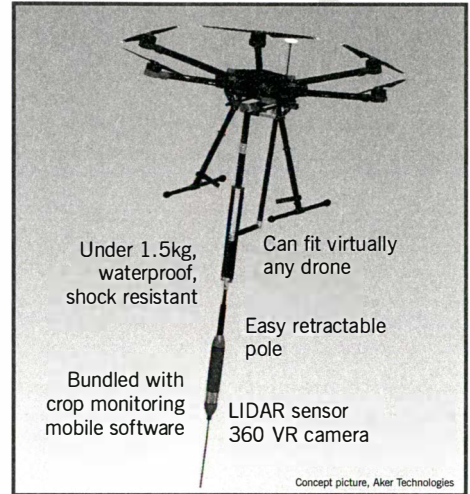
The future of farming will be 'smart farming' that incorporates computer systems to make real-time decisions based on digital data (artificial intelligence) of the conditions in the field. The smart farm is expected to have increased production efficiency, reduced labor costs, and better net return, while providing more protection to the environment. These technological innovations in Precision Ag are taking place at a fast pace, with new technologies coming to market every year. A 2018 survey by Glacier Farm Media ([www.farmmedia.com](http://www.farmmedia.com)) indicates that 89-90% of farmers surveyed felt that using sensors, digital data, and autonomous systems can decrease production cost, increase yield, and/or save time. Unmanned Aerial Systems (UAS), for example, used in Precision Ag are expected to contribute up to 80% of the \$80 billion UAS market by 2025.

North Dakota has a large concentration of companies involved in Precision Ag that seek partnerships with NDSU to expand and field validate their technologies. Agricultural producers need research-based information on profitable Precision Ag technologies to adopt, best utilize, or optimize these technologies on individual farms, and learn how to convert the huge amount of data collected in the field to appropriate decisions.

Precision Ag research at NDSU will benefit the North Dakota agricultural industries by increasing crop yield and efficiency of food production, and reducing inputs. Adopting Precision Ag can result in an economic benefit of as much as \$165/A in North Dakota (Schimmelpfennig, USDA, 2016).

Precision Ag can improve both soil health and water quality by minimizing runoff of inputs. It also can improve grain quality through the timely and precise application of inputs to the developing crops, resulting in additional benefits to the producers and environment.

**REQUEST:** The 2015-17 Legislative session provided \$600,000/biennium in operating funds for Precision Ag research. These funds are distributed through an internal competitive grants process. In each biennium, funds requested greatly exceeded the amount that was distributed. An increase in **Operating (\$800,000)** is requested to establish a smart crop farm at Casselton and a smart livestock farm at Fargo that utilizes sensors, autonomous systems, and data to make crop management decisions, and to evaluate these decisions in partnership with industries.



An example of a greenhouse using LED lighting technology that can help boost food production. (photo Shutterstock.com)

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ATI 1 HB1070  
11/01/19

# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Enhancing Research Capacity

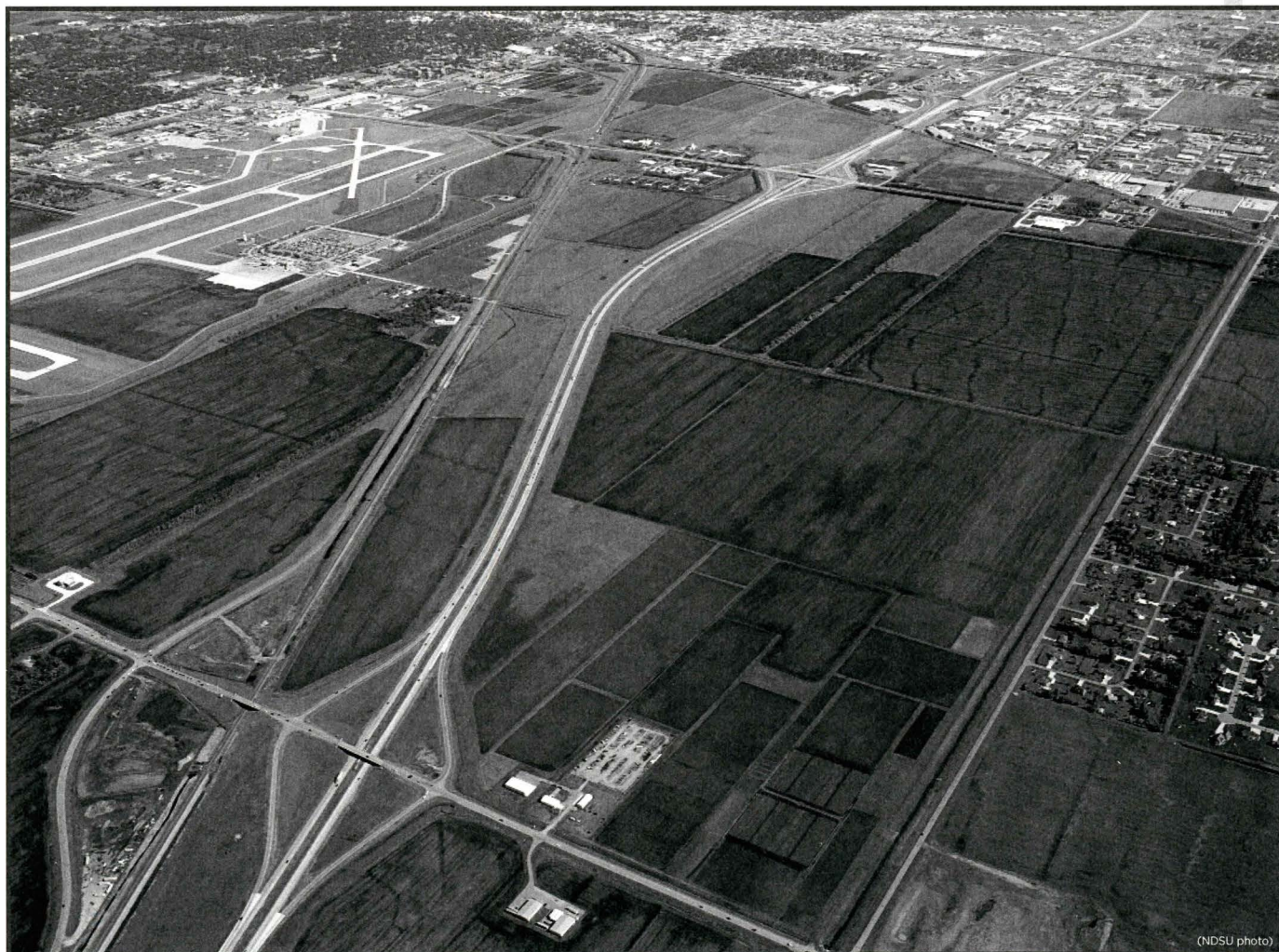
### Support for Operations to Offset Inflationary Costs

Agricultural research is a labor-intensive effort spanning a number of disciplines to improve the profitability of farming, ranching, and agribusiness enterprises. A strong focus of the research effort at the NDAES is to work on providing solutions to problems that affect crop and livestock production, improve production efficiency, product quality, and environmental sustainability.

Operating costs for research activities continue to increase. Scientists at the RECs and the Main Station receive high levels of grant funding from a variety of agencies. However, inflationary pressures on operating costs, such as state

motor pool leasing, equipment repairs, and supplies, reduce our ability to respond to current and future production-related issues affecting crop and livestock producers. In addition, it is critically important that our scientists remain relevant by incorporating new technologies into our research programs, which allows the NDAES to emulate the rapidly changing technology environment that exists in 21st Century Agricultural systems.

**REQUEST:** Operating support for REC's — \$280,000; Operating support for Main Station — \$210,000; Operating support for Oakes site — \$200,000. **Total — \$690,000**



(NDSU photo)

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## North Dakota Agricultural Experiment Station Main Research Station

### 2017-2019 IMPACTS

- A novel radio frequency sensor is being developed to reduce grain loss during harvesting; this work is in collaboration with industry and other NDAES units. A grain loss of 10 percent during harvesting is not unusual and is higher than the industry standard of 1 to 3 percent. In North Dakota, a grain loss of 5 percent above the standard will result in a loss of approximately 22.5 million bushels of corn, and 12.5 million bushels each of wheat and soybean. The development of a sensor that detects grain loss in real time and allows farmers to make quick combine adjustments will save approximately \$85 million for corn, \$73 million for soybean and \$71 million for wheat in the state.
- The impact of storage environments on green and semigreen soybeans is being studied by NDAES researchers in collaboration with NDSU Extension. High discounts are applied at the elevator when a large presence of green soybeans occurs, and this proportion of green soybeans usually varies from season to season. This study will provide best management strategies to North Dakota farmers during drying and storage, especially in seasons when a high proportion of green soybeans is harvested.
- The Red River Valley of North Dakota and Minnesota accounts for about 50 percent of the sugar beet production in the U.S. Sugar beet growers and sugar industries require tools for in-season diagnosis of crop development and forecasting of crop yields at harvest. Spatial variation of crop growth and yield can be explained by the diversity of environmental factors and cropping systems. NDAES researchers are developing a computer model and decision support system to improve diagnosis of crop growth and yield prediction of sugar beet grown in the Red River Valley.
- NDAES agricultural engineers are revising a publication on irrigation scheduling by the “checkbook” method to include more recently developed online and spreadsheet tools for irrigation scheduling in North Dakota. The checkbook publication presents principles and procedures for effective irrigation water management to help growers optimize crop yields, avoid excessive pumping costs, manage water resources and withdrawals, and minimize leaching of nutrients to groundwater. The irrigation scheduling publication and tools have been used as educational aids for growers, agencies and students.
- NDAES researchers have conducted studies in alfalfa harvest management and fertility. Research has demonstrated that optimization of management and fertility practices can increase forage yield by at least 0.3 ton/acre/year. In 2017, North Dakota had 449,046 acres of pure alfalfa and 962,015 acres of alfalfa-grass mixtures. Thus, an increase in forage yield of 0.3 ton/acre/year x 1,411,061 acres (alfalfa and alfalfa-grass mixtures) at \$100/ton of hay equals an economic impact of \$42,331,830/year.

*NDAES agricultural engineers are revising a publication on irrigation scheduling by the “checkbook” method to include more recently developed online and spreadsheet tools for irrigation scheduling in North Dakota.*



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- Control of herbicide-resistant weeds is estimated to cost \$10 to \$40 more per acre than standard weed control. In comparison, proactive resistance management strategies are estimated to provide long-term annual economic returns of \$20 to \$50 per acre. The weed genetics project is developing tools to facilitate proactive resistance management through genetic diagnostics and to mitigate resistance using emerging genetic technologies.
- Based on the last three years' average, North Dakota produced 55 percent (43.2 million bushels) of the durum in the U.S., with a \$268 million direct economic value to producers in North Dakota annually. More than 90 percent of the North Dakota durum acreage is sown with varieties developed at the NDAES. In 2018, Divide and the two new varieties, Carpio and Joppa, collectively were grown on 54 percent of the acreage in North Dakota. Two low-cadmium varieties, ND Grano and ND Riveland, with high yield potential, were released in 2017. If the new varieties replace 50 percent of the acreage and provide a 2 percent increase in yield, they will add approximately \$2.7 million annually to North Dakota producers.
- During 2016, the U.S. had 14,217 certified organic farms that produced \$7.6 billion in certified organic products. North Dakota had 114 certified organic farms that produced \$22.7 million in certified organic products. NDAES research is aimed at addressing one of the major problems faced by organic farmers and small- to medium-scale vegetable producers, which is weed management. Researchers are investigating novel approaches for suppressing weeds in these production systems. Results have been communicated to producers at several field days, and producers have indicated via surveys that they will utilize the new techniques.
- In 2018, 25 percent of North Dakota's spring wheat acreage was sown to varieties developed at the NDAES. The cash value of the 2017 spring wheat crop, according to National Agricultural Statistics Service estimates, was more than \$1.3 billion. According to NDAES ag economist William Wilson, a variety released from the NDAES spring wheat breeding program has an estimated direct economic impact to the state ranging from \$69 million to \$284 million beyond other competitive varieties for the period it remains in the marketplace. The spring wheat program also facilitates and participates in statewide variety trial testing for agronomic factors, as well as plant diseases. This unbiased source of data is invaluable to farmers as they make variety planting decisions.
- Soybean growers in the northern tier of North Dakota counties can save \$30 an acre in seeding costs by planting the glyphosate-resistant soybean variety ND17009GT, which was developed by the NDAES. As much as 500,000 acres of ND17009GT could be grown in 2019, which would save growers \$15 million in input costs by reducing their cost of seed.
  - Early detection and characterization of resistance traits in weeds such as wild oat, redroot pigweed and kochia have allowed changes in weed control programs and cultural practices to reduce the seed rain of resistant plants and restrict the geographic spread of the resistant biotypes. This can reduce the long-term herbicide input costs by 30 percent for the local geography.

*Research on soybean varieties, weed control and crop injury has resulted in more profits for growers.*



Application of the same strategy for the recently introduced weed Palmer amaranth could be even more important because the cost of control programs in other states has more than doubled once this weed is established.

- Research repeatedly has demonstrated the susceptibility of group 1- and group 2-resistant wild oat in North Dakota to triallate. Where tillage can be used for incorporation, inclusion of triallate for wild oat control in wheat has resulted in a \$35 per acre return, compared with wild oat control with a postemergence herbicide alone. Adoption of this program and successful wild oat control have been identified in areas with incidence of resistance to both groups of postemergence wild oat herbicides.
- Research has shown that off-target dicamba movement to susceptible soybean easily causes visible symptoms and can cause mild to moderate yield loss across large areas. Substantial visible injury of up to 60 percent vegetation loss has resulted in as much as 50 percent less seed yield. However, dicamba was not found at excessive levels in the seed, oil and protein content were not adversely affected, seed size was not altered appreciably, and germination and seedling growth were not inhibited. Soybean seed production might be reduced, but seed use, whether for the commodity or seed industry, should not suffer from off-target dicamba movement.
- Winter camelina and field pennycress production in second-year relayed soybean production added \$268 to \$493 per acre grain value to soybean yields in a wheat/soybean/soybean cropping sequence. Field pennycress caused soybean yield reduction in a wheat/corn/soybean cropping sequence. Potential is indicated for winter camelina and field pennycress to add grain value in wheat/soybean/soybean cropping systems.
- Based on the annual grower survey, 92 percent of the total acreage planted with black beans is of the Eclipse cultivar released by NDAES. At least 60 percent of the pinto bean acreage in the state will be grown with slow-darkening pintos, and approximately half of that area is grown with ND-Palomino, the first public slow darkening pinto released for the state and one of the first in the country.
- Assuming an average price of \$0.35 per pound across the different market classes, NDAES cultivars help contribute approximately \$110 million to the state's economy every year. The value of production for dry beans in the state is approximately \$300 million annually.
- In 2018, more than 18.9 percent of acres planted in the seven major states producing fall potatoes (Idaho, Washington, North Dakota, Wisconsin, Oregon, Maine and Minnesota) were planted to cultivars (or selections thereof) developed by the NDAES potato breeding program. The NDAES variety Dakota Trailblazer utilizes one-third less nitrogen than Russet Burbank; additionally, it is highly resistant to *Verticillium* wilt, thus, saving approximately \$200/acre fumigation costs for standard commercial processing cultivars.
- The NDAES woody plant improvement project has introduced 57 superior ornamental woody plants for production and sale; these plants have increased disease tolerance and winter hardiness for landscapes throughout the northern Great Plains. NDAES woody plant introductions have a nursery wholesale sale value of more than \$2.1 million and a \$6.1 million value in retail sales for 2017 alone. Introductions are being propagated for sale by commercial wholesale firms in four countries: Australia, Canada, England and the U.S. (14 states, including 35 nurseries).
- Artificial insemination (AI) offers beef producers the potential to make genetic progress in their herd at a fraction of the cost of purchasing herd bulls of equivalent genetic value. Research conducted by NDAES scientists indicates that the value of replacement heifers can be increased by more than \$500 per head through the use of AI. If an additional 10 percent of the 375,000 replacement heifers maintained in North Dakota were generated from AI breeding, the net increase in their value would be more than \$18 million annually.



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*NDAES scientists are evaluating the frame size of beef cows and its effect on efficiency. Matching the size of cows to resources and increasing longevity could save beef producers in North Dakota \$20 million annually.*

- Cow size affects the economics of calf production. NDAES scientists are evaluating the frame size of beef cows and its effect on efficiency. During the past four years, cows have been bred for different frame sizes and feed intake, and production has been measured in offspring. While the research is ongoing, so far, larger cattle are more efficient at using feed for growth, while smaller cattle wean more calf for their weight. This means larger and smaller cows will fit different operations, depending upon their goals and objectives. How long a cow stays in the herd, which is another objective of the research, will affect economic efficiency as well. A conservative estimate of savings by matching the size of cows to resources and increasing longevity would be \$20 million annually for North Dakota beef producers.
- Research related to the interactions between reproduction and nutrition, and research concerning regulation of ovarian, uterine and placental functions in nonpregnant and pregnant domestic animals, has identified selected mechanisms critical for reproductive efficiency that ultimately may improve fertility and embryo survival. A 1 percent increase in the pregnancy rate in North Dakota livestock potentially would result in more than \$10 million in increased revenue for North Dakota ranchers annually.
- Saline and nonsaline areas within a field function as different ecosystems. As such, saline patches should be delineated and managed separately. Saline soils tend to hold more water and more fertility throughout the growing season. Soil structure generally is better in nonsaline parts of the field, allowing better drainage and rooting conditions. As a result of these water and nutrient conditions in saline soils, microbial biomass is higher in the saline soils. This project ultimately will guide management of saline patches with the goal of improving field-level crop productivity and revenue across North Dakota.
- Deployment of the Mobile Cow Command Center (MCCC) units were successful and serve as portable units that use solar power to run individual components and upload data to cloud-based data acquisition platforms. SmartFeed units were able to control intake of individual animals assigned to different treatments in a group pasture scenario. The CowManager system was able to detect divergence in highly active behavior among treatment groups. The feed controlling portion of the MCCC can be used for precision feeding of individuals in expansive group-managed scenarios.

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## Agency Overview

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# Carrington Research Extension Center

North Dakota Agricultural Experiment Station

### Agency Statutor Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Carrington Research Extension Center (CREC) was established in 1960. CREC operates on a land base of around 1,700 acres and has infrastructure to irrigate about 260 acres with center-pivot systems and 120 acres by surface methods. The balance of the acreage is managed as traditional dryland and is utilized primarily for dryland field crop research activities.

The research effort at CREC focuses on these general program areas: traditional crop variety evaluation, crop production and management, plant disease management, alternative crop development, cropping systems, irrigation, integration of crop and livestock production, intensive cow/calf production, beef cattle feeding, feedlot management, livestock waste and nutrient management, foundation seedstocks production, and development of new agricultural enterprises. Through these efforts, the CREC research program has gained a national reputation for its involvement in agriculturally-based economic development and study of a wide range of crops and cropping systems.

CREC maintains a strong Extension program as five extension specialists base their educational programming from the center. The Extension program emphasis areas addressed by these specialists include: agronomy, plant pathology, irrigation, livestock, and livestock waste - nutrient management.

### Agency Mission Statement

The Carrington Research Extension Center conducts research that will lead to the enhancement of agriculture and improve the quality of life across the central region of North Dakota. Specifically, the Carrington Center conducts research on both dryland and irrigated crop production methods and systems, improved crop cultivars, feeding of beef cattle, cow/calf nutrition, sustainable agricultural production, and produces foundation seedstocks. The objective is to discover the balance between farm enterprise profitability and conservation of the natural resource base. The results of these studies are disseminated to the entire state through an on-going extension educational program.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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## Agency Future Critical Issues

- A secure (owned or long-term leases) land base is critical to sustain the current and future research mission of the Carrington Center. The diverse and broad based programs of the CREC operate on a relatively small land base. The Carrington REC operates on a land base of around 1,940 acres with the state owning around 840 acres. The 1,100 acres not secured by state ownership must be sourced by annual rental agreements with multiple landlords. This heavy reliance upon a willing group of land owners to annually rent a significant portion of the minimum amount of acres the CREC requires is risky at best. If any one parcel of rented land was not made available in a given year, the CREC would be forced to greatly reduce or eliminate program contributions that are depended upon by North Dakota producers and are basic to our department mission.
- The beef research unit needs a multi-use 'feedlot research support facility'. This facility would expand the scope of research capabilities, assist in sustaining Institutional Animal Care and Use Committee (IAUAC) compliance, address worker protection challenges, and reduce maintenance costs for equipment. An associated need for this program is an additional set of feedlot pens that would include a subset placed within a hoop structure. Current pens are fully utilized and feedlot research projects are often backlogged. An additional set of pens would allow the CREC to conduct at least one additional experiment per feedout period. Alternatively, these pens would allow more treatments or replications within other studies, thereby expanding research capacity and quality. Any feedlot pen expansion must include associated waste containment facilities to remain compliant with regulations.
- It is important that grant fund opportunities continue to be widely available in future years. Funds that support crop and livestock production or agricultural related issues in general are needed to leverage public funding. The CREC research programs must continue to have a diversity of opportunities to compete for grant funds that, when successful, allow us to most effectively empower current research programs.
- The programs of the CREC are supported by a diversity of facilities that include not only the primary buildings like headquarters and laboratories but also feedlot pens, feed and seed storage, animal shelters, water supply features, storage buildings, parking lots, roadways and waste containment. Current support for maintenance of these facilities is fully inadequate to address the current deferred maintenance costs.
- Equipment storage capacity at the CREC is critically limited resulting in a number of high value pieces of equipment needing to be stored outside year round exposed to the elements. This exposure has resulted in repair costs that would not have been experienced if the equipment was stored indoors, and faster depreciation especially on the higher-value equipment.

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## Carrington Research Extension Center

### 2017-2019 IMPACTS

- Expanded research on using winter rye as a cover crop for subsequent planting of soybean and dry bean to reduce erosion, suppress weeds and mitigate salinity effects while maintaining crop performance
- Established a precision agriculture research concept of testing crop input combinations across a landscape with variable soil characteristics to improve crop quality and yield across a whole field while increasing efficiency of input utilization
- Produced, conditioned and delivered foundation grade seed from an average of 33 varieties and 11 different crops the past two seasons through the CREC foundation seedstocks program. The seed increases represent contributions toward the introduction of new genetics and maintenance of pure seed for varieties in demand.
- Improved control of the disease Sclerotinia in soybeans significantly by optimizing fungicide deposition to the lower canopy through appropriate nozzle selection with boom-mounted nozzles and the use of a newly designed drop nozzle
- Completed a study to evaluate the safety of spring wheat herbicides on subsequent cover crop plantings. Many popular cover crop species are sensitive to herbicides frequently used in wheat. The research led to the development of a cover crop injury risk table included in the "2018 North Dakota Weed Control Guide."
- Developed a new winter rye variety, ND Dylan, which was released by the NDSU Agriculture Experiment Station. The variety has higher seed than winter rye varieties commonly grown in the region.
- Demonstrated through initial field studies that the planting date, but not residue cover, may be a significant determinant of the severity of Fusarium and Aphanomyces root rots of field pea. An early planting date was critical for strong field pea performance in fields with root rot pressure.



*The CREC foundation seedstocks program contributes toward the introduction of new genetics and maintenance of pure seed for varieties in demand.*



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## Agency Overview

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# Central Grasslands Research Extension Center – Streeter

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Central Grasslands Research Extension Center (CGREC) conducts research for the Coteau region of North Dakota, an area bounded by the Missouri River on the west and the James River on the east and extends from Divide and Burke counties in northwestern North Dakota in a southeasterly direction through Dickey County.

Research objectives must increase the range-carrying capacity of native range emphasizing conservation and preservation, stabilize grass production to compensate for the vagaries of the weather and precipitation as it influences forage production in the dryland agriculture, identify the impact of different management systems upon beef production in the central region and explore the increased use of crop residues and byproducts for the maintenance of the cow herd. CGREC's primary focus is management of grassland acreage which occupies about one-third of the agricultural land in the state and aims to improve production and increase returns to cattle producers.

### Agency Mission Statement

The legislated mission of the CGREC is as follows: The CGREC shall conduct research designed to fulfill needs within an area bounded by the Missouri River on the west and the James River on the east with research objectives as follows:

1. To increase the range-carrying capacity of native range with emphasis on conservation.
2. Stabilization of grass production to determine how to best compensate for the variability of the weather as it influences forage production.
3. Identification of different management systems on beef production in the central region of the state.
4. Exploration of increased use of crop residues and by-products for the maintenance of the cow herd.
5. To disseminate research results and information for the benefit of the state of North Dakota.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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### **Agency Future Critical Issues**

- Livestock facilities continue to be deficient and impede potential research. Improvements to livestock handling and feeding facilities including replicated dry-lot pens, feed storage, and a new working barn are needed to allow for growth of the animal science research program with animals that come off the range and forage research projects.
- Significant improvements or replacement of the director's residence is needed as the current residence has water, possible mold, and foundational issues in the basement.
- Deferred maintenance and other repairs that affect both safety and use of facilities continue to be a critical issue.

## Central Grasslands Research Extension Center - Streeter

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### 2017-2019 IMPACTS

- Initiated a large landscape-level research project addressing invasive cool-season grass species and improving plant diversity using two different prescribed patch-burn grazing (spring only and spring plus summer) strategies and a modified twice-over/rest-rotation grazing strategy
- Expanded winter grazing research to include grazing of corn residues, cover crops and bale grazing projects
- Studied through a precision agriculture project the impacts of supplementing enhanced mineral feeds to grazing developing heifers on pasture using radio frequency identification technology
- Continued to expand on collaborative research efforts evaluating the impacts of management on reproductive performance of beef cows and bulls
- Expanded and initiated alfalfa trials to assess varieties and explore enhancing a multi-harvested haying system to improve forage production and retain grass in the mixture
- Assessed different cover crop mixtures for forage production and quality while improving soil health
- Created on-farm demonstrations with NDSU Extension agents and specialists, finalized the bale grazing demonstration project and started a project with ranchers in the Coteau region
- Developed regional Extension programs for farmers and ranchers, and in-service training for Extension agents and specialists, and the U.S. Department of Agriculture-Natural Resources Conservation Service

*Research at Central Grasslands included using patch-burn grazing strategies to improve plant diversity and address invasive cool-season grass species.*







ATT 1 HB1020  
11/10/19

## Agency Overview

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# Dickinson Research Extension Center

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Dickinson Research Extension Center (DREC) has an established record of service to the people in the 13-county region south and west of the Missouri River. The DREC operates 6,506 acres of owned land within the region as well as annual land leases needed to accommodate ongoing projects. The land base provides opportunities for a broad perspective in evaluating various agricultural systems that can serve as engines for economic development. This is a continuation of what has taken place for over 100 years. Currently, the DREC assists agricultural producers in solving production problems with agronomy, animal science and range science, while integrating new developments. Five major areas are served: agronomy, beef management, bio-security, range management, and sustainable agricultural practices. Faculty and staff are committed to engaging people of the region and to the identification of current economic opportunities, while sustaining natural resources for future generations as directed by the mission statement and Advisory Board. Research data and producer ideas are continually considered so the DREC can leverage the latest knowledge to best benefit the people of North Dakota.

### Agency Mission Statement

The Dickinson Research Center must be located at or near Dickinson in Stark County. The Center shall conduct research on increasing the carrying capacity of native rangeland, with emphasis on conservation and preservation for future generations. The Center shall conduct research on grass production to determine how to best compensate for the vagaries of the weather as it influences forage production in the dry land agriculture of western North Dakota. The Center shall conduct research at the ranch location in Dunn County with beef cattle breeding, feeding, management and disease control for the benefit of livestock producers of western North Dakota and the entire state. The Center shall conduct research designed to increase productivity of all agricultural products of the soil by maintaining or improving the soil resource base in the dry land agricultural region of southwestern North Dakota by the identification of adapted crop species and superior crop cultivars; propagation and distribution of selected seed stock; and development of profitable cropping systems that achieve the necessary balance between profitability and conservation of all natural resources. The Center shall disseminate research results and information for the benefit of this state.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

## Agency Future Critical Issues

- Continue soil-plant-livestock-air continuum research emphasizing soil health, agronomy, range management and livestock production. The current research focus and long research history provide a firm foundation to continue cutting edge research to match goals and objectives for work related to the agricultural biome. The integration of sustainable plant and beef systems requires more evaluation. In the future, more avenues for additional compensation need to be explored, to enhance the economic viability for beef producers and the rural areas associated with beef production. This compensation may come from not only beef but synergistic crop production.
- The Dickinson Research Extension Center, as part of North Dakota State University, takes serious the need for sustainable beef, beef and grass systems. Currently, the Center is striving to develop sustainable and integrated production strategies that match conditions of western North Dakota and surrounding regions. The inclusion of forages into traditional cropping systems can provide the resources necessary for the development of integrated production strategies that increase sustainability and profitability.
- There is a need to develop agro-ecosystems that optimize the balance between forage-based and grain-based crop/livestock systems reflective of the many individual ecosystems. These integrated systems must be synergistic to, or enhance the native and agronomic plant communities, thus providing the base for future beef production. In addition, enhanced value for commodities produced from forage-based systems is key.
- Deferred Maintenance Increase - The DREC has maintenance issues with the main public use and cattle working facility at the ranch. The facility needs major roof repair and 1,800 square feet of additional cattle working space. arena at the DREC ranch headquarters southwest of Manning to improve our cattle working facility and create a more effective and safe handling facility for cattle and labor. This arena is our multi-purpose building, used as an educational area for conferences and public meetings. As previously requested, a new building for large equipment storage, chemical and hazardous material storage, and repairs.
- Programmatic Needs - Maintain adequate operating funds. Fund a research specialist to allow us to continue our efforts in the integration of livestock, range science, cover crops and cropping systems. Fund a research specialist with a master's level education to facilitate research and data collection. The Center needs annual support for a multitude of research projects, which require a broad understanding of various research techniques and data analysis related to the agricultural biome.

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## Dickinson Research Extension Center

### 2017-2019 IMPACTS

- The DREC faculty and staff are active in finding answers that will identify positive economic advantages for producers and successfully preserve our natural resources. Major areas of research involvement are: soil health research and education to show how soil health is improved by the microbial action of microorganisms, which can reduce input costs and increase productivity, and the continued exploration of symbiotic relationships among livestock, range science, cover crops and cropping systems to advance revenue streams and the quality of place for North Dakotans. For all of our impacts, see our website: [www.ag.ndsu.edu/DickinsonREC](http://www.ag.ndsu.edu/DickinsonREC).
- Soil is a biological system that depends on the recycling of nutrients to sustain microbial action beneath the surface and provide nutrients for above-ground production. The balance between the ground surface and below-ground interaction is essential for soil to function properly, allowing water infiltration, nutrient cycling and erosion reduction. Research and educational efforts explore new forage and cattle resources and inputs that shift from a grain-based beef production model to a grass-based beef production model based on the principals of soil biology.
- Grass cultivars, soil mineral nitrogen, prairie ecosystems, grassland restoration and integrated grazing systems were evaluated. The diverse rotational cropping systems results showed improved and increased per-acre return on seeded annual crops. Beef gain per acre grazing annual crops exceeded 2 pounds per day, and results on the 34-year old twice-over rangeland study show improved forage production per acre and greater plant nitrogen availability. These directly translate into improved revenue and decreased costs.
- Reduced soil disturbance, increased plant diversity, added animal diversity, maintained living roots to feed soil organisms and successfully covered soil with plants and plant residues all resulted in improvement in the sustainability of agronomic systems, cropping systems, pest control and the integration of beef cattle.

*Research at the Dickinson REC explores new forage and cattle resources and inputs that shift from a grain-based beef production model to a grass-based beef production model based on the principals of soil biology.*





AH 1 HB1020  
11/10/19

## Agency Overview

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# Hettinger Research Extension Center

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Hettinger Research Extension Center (HREC) is a semi-arid site located in southwest North Dakota, providing the most southerly NDSU location in the non-glaciated portion of North Dakota as a site for its agronomy research program. The HREC also is located at the center of the North Dakota sheep industry, the focus of one of its animal research programs, and in an area of rapidly growing livestock feeding ventures, another focus of animal research at the HREC. Additionally, the HREC is located in a region where much of the land base is in the Conservation Reserve Program, which has resulted in additional research evaluating potential changes in the CRP program and how these changes may affect upland native and game bird populations. A new research program evaluating low-cost rangeland monitoring strategies on U.S. Forest Service lands and wildlife/livestock interactions has resulted in a significant increase in the quantity of rangeland research conducted at the HREC throughout the western Dakotas. Research at HREC involves the disciplines of animal science, range science, wildlife science, agronomy, and agri-business and applied economics. Collaboration is with Main Station scientists, Branch Station scientists, U.S. Forest Service, grazing associations, university scientists from WY, SD, and MT, and USDA research entities in these research disciplines to improve productivity of livestock, grazing, and cropping systems, and to improve economic development of the region.

### Agency Mission Statement

The Hettinger Research Extension Center, an outreach of North Dakota State University, provides applied research and education in agriculture and environmental sciences that will enrich the lives of North Dakotans and support economic development.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

Att 1 HB 1020  
1/10/19

### **Agency Future Critical Issues**

- Technical support for the livestock research program is needed to provide all research programs with a full time technician. This position is needed to meet the research needs of producers in SW North Dakota.
- A modern livestock processing and research support facility is needed to conduct the research by our sheep and cattle research programs. The current facility is a 16' x 32' lean-to, with no ability to utilize today's modern technology, such as web access, in our research program.
- A Sheep Feed Efficiency Research Facility for the evaluation of feed efficiency is needed for the sheep producers of ND to remain competitive. The ND Lamb and Wool Producers Association continues to support such a facility at the Hettinger REC.
- Housing of the graduate students and technicians needed for a nationally competitive program continues to be a struggle in western ND. Permanent housing, in a bunkhouse format, is needed to ensure the HREC program can continue to recruit these valuable members of our team on an annual basis.
- Deferred maintenance and safety issues are over \$1,000,000. Specifically, due to a past wet cycles and heavier than normal traffic, the road to the office is unstable and needs to be replaced. The most recent inspection by the Fire Marshall indicated that the 1970's era bunkhouse needs to be renovated to maintain its use as a housing facility, due to fire and safety concerns. Additional needs include mechanical system renovation of the 1992 office, and parking lot re-paving.

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## Hettinger Research Extension Center

### 2017-2019 IMPACTS

- Evaluated new varieties (16) and technologies to grow drought-tolerant crops and new and emerging biofuels
- Conducted weed science research evaluating new herbicides for weed control and crop safety for crops grown in southwestern North Dakota
- Evaluated the effects of patch burning in post-Conservation Reserve Program lands on livestock, vegetation, pollinators and wildlife in western North Dakota
- Developed a multidisciplinary research project evaluating an integrated crop-livestock system using annual forages, winter wheat and sheep
- Conducted a nationally recognized sheep research program evaluating alternative technologies for increasing reproductive efficiency in males and females and feedlot nutrition
- Developed a nationwide training program for the National Sheep Industry Improvement program that trained and certified carcass ultrasound technicians for the U.S. sheep industry
- Certified 44 Extension agents in the Nitrate QuikTest Certification Program for annual forages so they could assist in the statewide drought response for NDSU Extension
- Trained five M.S. and Ph.D. students in the fields of Natural Resource Management and Animal Science



*The Hettinger REC developed a nationwide training program for the National Sheep Industry Improvement program that trained and certified carcass ultrasound technicians for the U.S. sheep industry.*





HH 1 HB1020  
11/10/19

## Agency Overview

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# Langdon Research Extension Center

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Langdon Research Extension Center (LREC) is located one mile east of Langdon on US highway five. The agricultural land base at the station consists of 549 owned acres and an additional 206 acres under lease agreement. The LREC serves a nine-county region located in northeast North Dakota and has North Dakota's highest precipitation rates, coolest temperatures, and richest productive soils. The climate supports diverse crop production and recurring disease problems.

The LREC has a strong tradition of assisting the region's producers to meet agricultural production challenges throughout the course of its existence since 1909. In 1993, the LREC redirected much of its research programming to focus on the significant increase of disease and insect pressure associated with its climate. This redirected applied research programming has provided producers with information regarding disease minimizing cultural farming practices and trusted information regarding chemical applications and other inputs that minimize disease and insect pressures that give growers the best return on investment.

Recently, the LREC has significantly enhanced its overall agricultural research programming with an increase in the foundation seed stocks program, the addition of a crop protection scientist, farm business management instructor, Extension specialist in agronomy and an Extension specialist in soil health. New infrastructure additions in the past 12 years include a full service agricultural based learning center/headquarters building constructed in 2004, agronomy/pathology laboratory in 2015 and a 25 acre field tiling project completed in 2014. The NDSU LREC with its recent personnel and infrastructure additions and improvements will insure that growers can depend on research data that will improve their bottom line for the next 100 years.

### Agency Mission Statement

The Langdon Research Extension Center will conduct applied agricultural research that enhances the quality of life for the regions citizens with a responsive, flexible and accessible overall agricultural based research program. This programming will combine the concepts of agricultural research, information technology and community/economic development while conserving the regions natural resources.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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### **Agency Future Critical Issues**

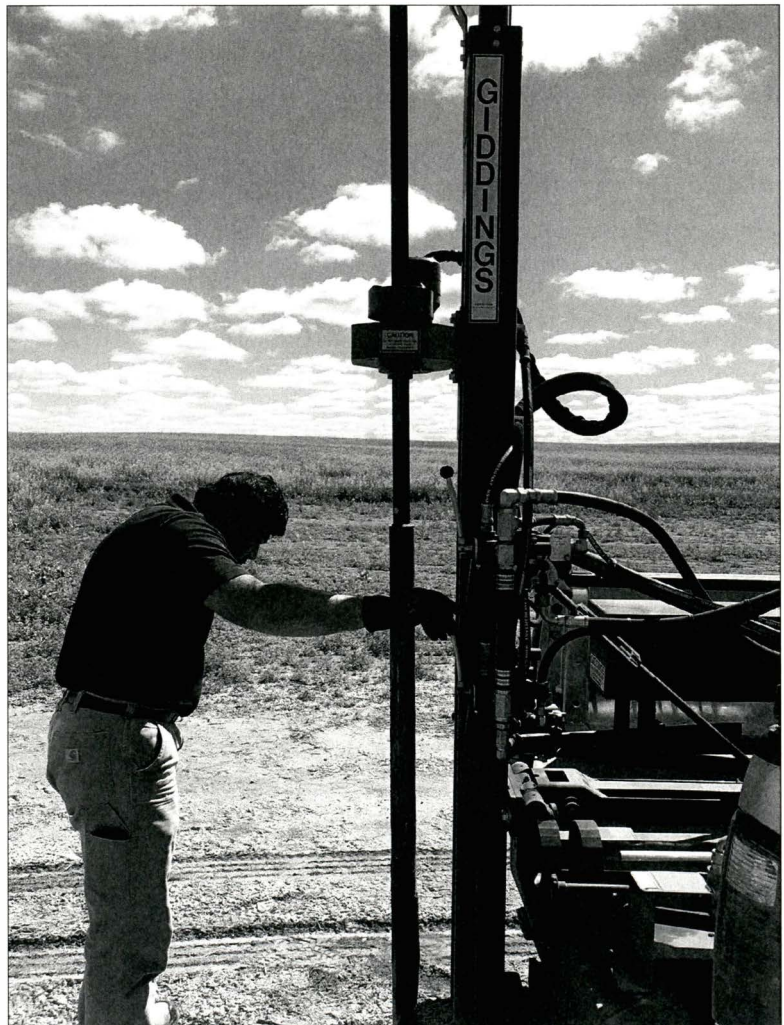
- The number one issue currently for the NDSU Langdon Research Extension Center is to maintain a level budget through the 2019-21 biennium based on the 2017-19 budget. This is essential to support the research and extension programming at its current level. Further budget cuts would require eliminating FTE(s) which would scale back research and extension efforts demanded by the public.
- All research and extension programming are supported by all facilities at the Langdon REC. Most are becoming outdated and unsafe. Acquiring additional funds for extraordinary repairs will help to shore up these facilities to support the level of research and extension programming currently supported at Langdon.
- With appropriated funds becoming less and less, the LREC has become more dependent on research grant opportunities. Supporting an atmosphere that readily accepts private funding to leverage public funding will be essential to continue employing problem solving applied research for growers.

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## Langdon Research Extension Center

### 2017-2019 IMPACTS

- Continued to build strong research partnerships with agricultural input companies, commodity groups, regional crop improvement associations, growers and others
- Produced and distributed the highest quality foundation grade seed of the major crops grown in our region
- Provided dependable support for Main Station crop breeding programs and other cropping system research programs
- Continued to foster and strengthen two new Extension specialists' outreach programs in agronomy and soil health
- Applied research at Langdon in agronomy, pathology and soil health to provide growers with answers they need to become more profitable



*Applied research at Langdon in soil health provides growers with answers they need to become more profitable.*



Att 1 HB1020  
11/01/19

## Agency Overview

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# North Central Research Extension Center - Minot

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The North Central Research Extension Center (NCREC) was established in 1945 and is located one mile south of Minot on Highway 83. The 1,200-acre center specializes in crop research and extension education activities and foundation seed production. Approximately 1,500 owned, rented, and contracted acres are planted for foundation seed production each year. The NCREC evaluates conventional and new crops for production in the region and explores weed management and cropping systems to improve the economic potential of crop production in the north central region. The NCREC is a leader in North Dakota on production and disease research of canola, pea, lentil, and chickpea crops, in addition to the conventional crops of hard red spring and durum wheat, barley, flax, sunflower, and oats. The NCREC works closely with business and economic development leaders in the region to improve the economic vitality of north central North Dakota.

### Agency Mission Statement

The North Central Research Extension Center conducts research to increase agricultural productivity in north central North Dakota. The center serves agricultural producers in a 12-county region surrounding Minot through crop research, foundation seed production and dissemination, and extension education programs in crop and livestock production. Studies at the center focus on crop variety and new germplasm evaluation, weed control, cropping systems, crop pest management, reduced tillage, and soil fertility. Research is conducted on cereal grains, oilseeds, legumes, forages, and new specialty crops.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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### **Agency Future Critical Issues**

- Increased base funding to support research and extension efforts
- Additional technical support
- Increased operating funds
- Equipment replacement
- Drain tile NCREC yard
- Encroachment from city of Minot
- Sale and purchase of additional land for seed production

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11/01/19

## North Central Research Extension Center - Minot

### 2017-2019 IMPACTS

- Produced, conditioned and distributed foundation seed of nine crops grown in the region (24 unique varieties)
- Assisted in developing new varieties of economically important crops and evaluated production strategies for alternative crops
- Researched crop production products to improve efficiencies and maximize economic return for minor and major acreage crops grown in North Dakota
- Provided transformational Extension education in the areas of livestock, soil health, crop protection and cropping systems
- Conducted residue trials that led to registration of new pesticides



*The North Central REC assisted in developing new varieties of economically important crops and evaluated production strategies for alternative crops.*





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## Agency Overview

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# Williston Research Extension Center

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Williston Research Extension Center (WREC), established in 1907 and relocated to the present site in 1954, is an 800-acre rain-fed farm located in northwest North Dakota near the city of Williston. In 2001, an additional 160 acres were purchased in the Nesson Valley and an irrigated research and development project was established. WREC research studies are conducted on crop variety evaluation, herbicide performance and other cultural management research, cropping systems and soil and water conservation practices. The main dryland crops are spring wheat and durum. Barley, oats, safflower, pea, lentil, chickpea, canola, flax, alfalfa and other alternative crops are also grown as cash crops or for livestock feed.

WREC research is intended to increase the producer's net profit, support crop diversification and encourage more intensive cropping and irrigation development. Research on soil and crop management systems for sprinkler irrigation, on alternative irrigated high value and value-added crops and on western malting barley programs are conducted. WREC also conducts variety development research on safflower, winter wheat, and durum and variety evaluations in cooperation with NDSU Main Station scientists. WREC produces and supplies foundation seed to area farmers of new and old varieties adapted to the region.

### Agency Mission Statement

The Williston Research Extension Center conducts research to increase agricultural productivity in the semi-arid region for northwestern North Dakota while achieving a necessary balance between profitability and conservation of natural resources. Research on soil and crop management systems for sprinkler irrigation and alternative irrigated high-value/value-added crop production at the Nesson Valley site are conducted in cooperation with the Montana State University Eastern Agricultural Research Center at the USDA-ARS Northern Plains Agricultural Research Laboratory in Sidney, Montana and other cooperating NDSU and University of Minnesota scientists.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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## Agency Future Critical Issues

- Increasing operating costs and higher labor costs for research activities continue to impact WREC abilities to carry out our research programs vital to the improvement of the economic and environmental performance of our agricultural lands. A high priority need is the request to restore the WREC budget to the 100% funding level. Deferred maintenance funding continues to be an important need for WREC to maintain its facilities.
- The switch from a strict small grain-fallow rotation to a more intensive no-till diversified cropping system has resulted in northwest North Dakota farmers growing more than 20 different crops on over an additional million acres of previously fallowed land increasing the demand for pure seed of varieties of pulse crops and other fragile specialty seeds. The WREC seed conditioning plant built in 1954 is antiquated and was designed to only handle cereal crops and does not have the capability of cleaning peas, lentils, chickpeas, and other fragile seeds that are in high demand by our farmers. The outdated seed conditioning plant also poses considerable safety issues. A horizontal seed conditioning plant with optical color sorter and higher bushel per hour capacity is needed to allow WREC to condition Foundation seed of a wide array of new crop varieties to provide pure seed to growers.
- An additional equipment storage building is needed for WREC farm and plot research equipment to allow all WREC high cost farm and research equipment to be stored indoors from the elements.
- A greenhouse is needed for the new WREC Plant Pathology Program and the Horticulture Program to allow these programs to conduct plant disease and horticulture research during the winter months.
- Increased state operating costs due to state fleet rate/policy change.

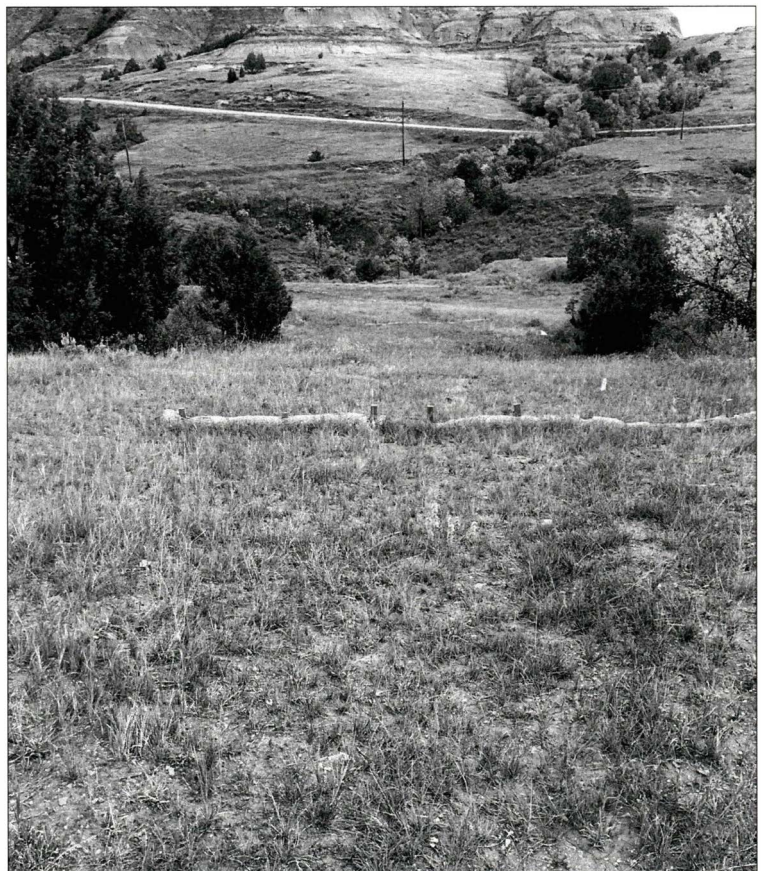
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## Williston Research Extension Center

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### 2017-2019 IMPACTS

- Produced more than 45,000 bushels of foundation seed of 23 varieties of small grains and broadleaf crops
- Developed and utilized a 160-acre irrigated site to identify improved irrigated cropping and tillage systems, water use efficiency and soil health
- Established and continued a pipeline reclamation research project
- Established and continued a high-tunnel research project with vegetable crops and cut flowers
- Established and continued a saline seep reclamation research and demonstration project in collaboration with the Montana Salinity Control Association
- Established and continued a multidisciplinary long-term dryland cropping systems project to develop diversified cropping systems recommendations
- Established and continued a plant pathology research program to investigate disease on peas, lentils, durum, barley and sugar beets; oversee crop scouts; and collaborate with other agencies to identify and treat diseases in crops
- Received funding from NDAES Precision Agriculture to establish the Drone-based High-throughput Phenotyping in Support of Cereal Grain project



*Research continues on pipeline soil reclamation at Williston.*



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1/10/19

## Agency Overview

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# Agronomy Seed Farm

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Agronomy Seed Farm (ASF) is a 590 acre farm located near Casselton, which has been a part of the North Dakota Agriculture Experiment Station (NDAES) since it was gifted to the state in 1950. It was the result of a fund drive conducted by the North Dakota Crop Improvement Association, which solicited farmers, seed companies and many others throughout the state to help establish a farm whose main purpose is to increase seed of new varieties as they are developed by the plant breeding and supporting departments of the NDAES. The ASF also propagates seed of older but still desirable varieties for the seedsmen of the area.

### Agency Mission Statement

To produce an adequate supply of foundation-grade seed for the seedsmen of the state and area at a reasonable price and to support the varietal development research of the NDAES.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

### Agency Future Critical Issues

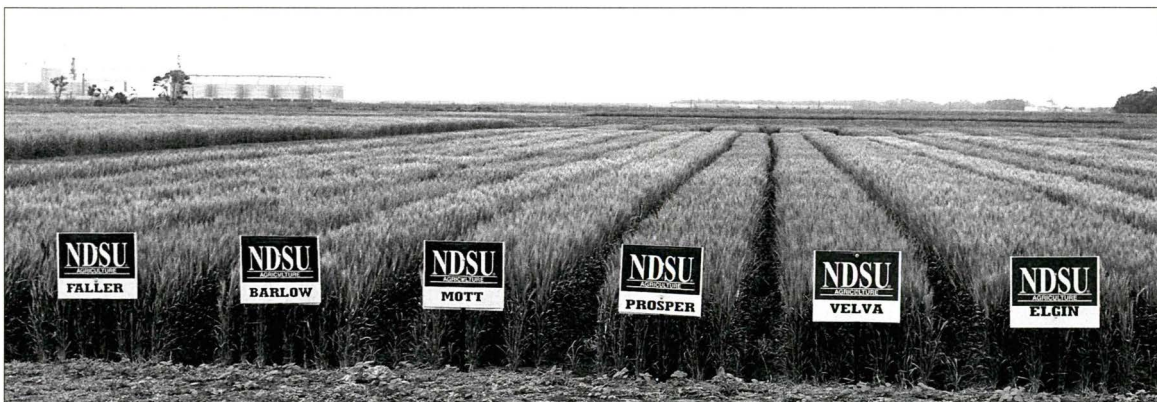
- The critical issues facing the ASF are a continued demand for foundation-grade seed, favorable weather for growing seed and a good supply of varieties that are in demand by the seed industry. If these three conditions are present and good commodity prices accompany them, the future of the ASF is secure.

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## Agronomy Seed Farm

# 2017-2019 IMPACTS

- Produced 35,000 to 50,000 bushels of seed for availability to the seed industry annually
- Conditioned 35,000 to 50,000 bushels of seed for availability to the seed industry annually



*The Agronomy Seed Farm's main purpose is to increase seed of new varieties as they are developed by the plant breeding and supporting departments of the NDAES.*

Att 1 HB1070  
11/01/19

# NDSU Extension Program Initiatives

Final Ranking by SBARE - May 3, 2018

NDSU

EXTENSION

ONE-TIME FUNDING REQUEST

## Extension Web and Digital Delivery

**JUSTIFICATION:** SBARE's review of Extension recommended that Extension optimize the use of technology and target younger age demographics to enhance the effectiveness and efficiency of delivery methods. To accomplish this goal, Extension needs a new web strategy and reimagining of content options to meet future opportunities and ever-changing user needs.

Reimagining the Extension web presence is a significant undertaking because of the complexities of the diversity of materials, the diversity of who generates and manages content, how Extension users access the content (for example, computer, smartphone), and how users interact with the apps and information.

NDSU Extension's current web presence has evolved into a decentralized system that allows specialists, and Research Extension Center (REC) and county staff to post directly to their websites with a focus on localized content. This approach has relied on staff expertise because Extension lacked sufficient web specialists to manage all of the content contained on 123 topic, 13 REC and 52 county sites. Web delivery is a critical component of Extension's educational delivery system; NDSU Extension websites had 953,897 users and 3,546,916 page views in 2017.

NDSU Extension's web presence serves as an important platform to support a diverse array of electronic media. Extension has about 645 publications available online, of which about 300 are available only on the web. Online publication access is popular; 59,482 users made 307,912 page views in 2017. Nearly all publications are available in html format for easy smartphone and tablet use, along with a PDF option for high-quality printing.

Extension has 722 YouTube videos on 11 channels, and the videos had 261,759 views in 2017. Extension also posts podcasts covering crop and livestock issues. These podcasts

are available as feeds via iTunes, Google, Yahoo or NDSU, and are used by radio stations and directly by producers.

Extension uses multiple platforms for online meetings, webinars and trainings, such as the interactive video network, Blackboard Collaborate, Moodle and Skype for the public and staff. Blackboard Collaborate is used more for training the public, and counties often provide local viewing sites with additional in-person training.

Several traditional newsletters have transitioned to electronic distribution and posting. For example, the Crop and Pest Report is emailed as a PDF to a listserv (4,865 subscribers) and articles are cross-posted on the web (215,133 page views in 2017). Other newsletters are distributed by Mailchimp as an e-newsletter.

Finally, Extension has a strong social media effort, with 81 NDSU Extension-related Facebook pages and numerous NDSU Extension Twitter accounts.

A new web strategy and reimagining of content will allow Extension to:

- Optimize content for smartphones and tablets, and emerging technologies such as voice-assisted search and augmented reality, especially to reach younger audiences
- Optimize navigation and search features
- Add more social media use
- Incorporate more apps
- Feature more interactive educational modules

Extension needs this enhanced web presence to augment transformational education, which is the foundation of Extension's mission.

**NEED:** This one-time funding request will add temporary support to overhaul and reimagine NDSU Extension's online presence.

**One-time operating support - \$345,000**

### Reimagining:

Transforming complex sources and content to simple access and media





AA 1 HB1020 11/01/19

# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Capital Improvement Requests

### Agronomic, Pathology, and Soils Field Lab Facility

(Waldron Hall replacement) – Waldron Hall was built in the mid-1950's to house the field laboratories for the wheat breeding programs in the Department of Agronomy. An addition was built in the mid-1960's to house approximately another 16 scientists from the Departments of Agronomy and Plant Pathology. The building now houses field labs and wet labs for nearly 60 scientists, each with numerous projects, at the Main Station involving a number of disciplines. Many of these labs are shared and the seed drying, cleaning, and storage facilities needed by our scientists are now grossly insufficient and a health hazard to anyone working in the facility. A new facility is needed to provide our scientists a safe environment to conduct their research, as well as processing, cleaning, and storing seed.

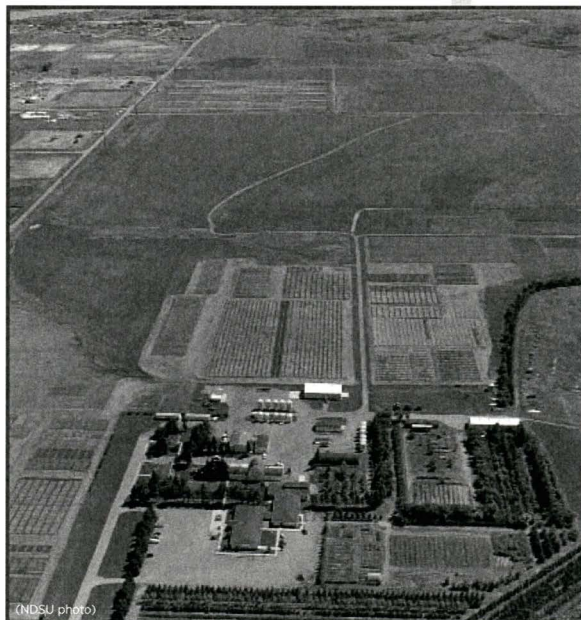
**REQUEST:** \$65,000,000 (approximately)



### Seed Cleaning Facility WREC

Seed cleaning facilities at WREC need to be replaced. Current facilities are antiquated, lack reliable capability to ensure high quality seed, are slow, and inefficient. Current facilities were designed to handle cereal crops and have limited/no capability of cleaning pulse crops and other fragile seed that are in high demand. These facilities pose considerable worker safety issues. A fundraising effort is underway.

**REQUEST:** \$750,000



### Equipment Storage Sheds

Purchasing and/or leasing expensive field equipment is an investment that the AES needs to protect. Storing expensive research plot equipment outdoors, such as tractors, seeders, and combines, reduces the life of the machines and can compromise the sophisticated electronics typically used on equipment.

**REQUEST:** 8 (\$300,000/shed)

### Precision Ag/ABEN Facility

A field lab with large indoor space and accessibility to perform research, demonstration and field testing of ag equipment and technology. Additional infrastructure would include a 100-ft long soil bin to test soil-tool interaction of tillage equipment and a high speed wind tunnel to test nozzles for spray drift and droplet size distribution of active ingredients under various weather conditions. The facility would be critical in conducting research and training on agricultural technologies such as unmanned aerial surveillance, variable rate application systems, precision planting, and other technology used in crop and livestock systems.

**REQUEST:** \$6,000,000

**REQUEST:**

One-time deferred maintenance \$1,440,465

NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.



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Sixty-sixth  
Legislative Assembly  
of North Dakota

**HOUSE BILL NO. 1020**

Introduced by

Appropriations Committee

1 A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota  
2 state university extension service, northern crops institute, upper great plains transportation  
3 institute, main research center, branch research centers, and agronomy seed farm.

4 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

5 **SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds  
6 as may be necessary, are appropriated out of any moneys in the general fund in the state  
7 treasury, not otherwise appropriated, and from special funds derived from federal funds and  
8 other income, to the North Dakota state university extension service, the northern crops  
9 institute, the upper great plains transportation institute, the main research center, branch  
10 research centers, and agronomy seed farm, for the purpose of defraying the expenses of the  
11 North Dakota state university extension service, the northern crops institute, the upper great  
12 plains transportation institute, the main research center, branch research centers, and  
13 agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as  
14 follows:

15 Subdivision 1.

16 NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE

		Governor's	
	<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
18 Extension service	\$51,188,489	\$53,124,252	\$51,188,489
20 Soil conservation committee	<u>1,091,520</u>	<u>1,091,520</u>	<u>1,091,520</u>
21 Total all funds	\$52,280,009	\$54,215,772	\$52,280,009
22 Less estimated income	<u>26,646,689</u>	<u>27,886,984</u>	<u>26,646,689</u>
23 Total general fund	\$25,633,320	\$26,328,788	\$25,633,320
24 Full-time equivalent positions	252.98	242.51	252.98

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1 Subdivision 2.

2 NORTHERN CROPS INSTITUTE

3 Governor's

4		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
5	Northern crops institute	\$3,642,721	\$3,803,620	\$3,642,721
6	Total all funds	\$3,642,721	\$3,803,620	\$3,642,721
7	Less estimated income	<u>1,755,830</u>	<u>1,897,853</u>	<u>1,755,830</u>
8	Total general fund	\$1,886,891	\$1,905,767	\$1,886,891
9	Full-time equivalent positions	11.80	12.80	11.80

10 Subdivision 3.

11 UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

12 Governor's

13		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
14	Upper great plains transportation	\$22,060,242	\$22,421,422	\$22,060,242
15	institute			
16	Total all funds	\$22,060,242	\$22,421,422	\$22,060,242
17	Less estimated income	<u>18,617,068</u>	<u>18,957,222</u>	<u>18,617,068</u>
18	Total general fund	\$3,443,174	\$3,464,200	\$3,443,174
19	Full-time equivalent positions	43.88	43.88	43.88

20 Subdivision 4.

21 MAIN RESEARCH CENTER

22 Governor's

23		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
24	Main research center	\$108,642,243	\$107,032,049	\$108,642,243
25	Total all funds	\$108,642,243	\$107,032,049	\$108,642,243
26	Less estimated income	<u>59,084,828</u>	<u>58,053,640</u>	<u>59,084,828</u>
27	Total general fund	\$49,557,415	\$48,978,409	\$49,557,415
28	Full-time equivalent positions	336.12	340.05	336.12

29 Subdivision 5.

30 BRANCH RESEARCH CENTERS

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		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
1				
2				
3	Dickinson research center	\$6,825,551	\$6,707,017	\$6,825,551
4	Central grasslands research center	3,423,624	3,389,685	3,423,624
5	Hettinger research center	4,975,133	4,984,698	4,975,133
6	Langdon research center	2,964,607	2,968,417	2,964,607
7	North central research center	4,953,652	4,989,503	4,953,652
8	Williston research center	5,118,890	5,117,619	5,118,890
9	Carrington research center	<u>9,175,491</u>	<u>9,445,861</u>	<u>9,175,491</u>
10	Total all funds	\$37,436,948	\$37,602,800	\$37,436,948
11	Less estimated income	<u>20,281,691</u>	<u>20,807,242</u>	<u>20,281,691</u>
12	Total general fund	\$17,155,257	\$16,795,558	\$17,155,257
13	Full-time equivalent positions	110.29	109.81	110.29

14 Subdivision 6.

AGRONOMY SEED FARM

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
16				
17				
18	Agronomy seed farm	<u>\$1,536,129</u>	<u>\$1,571,648</u>	<u>\$1,536,129</u>
19	Total special funds	\$1,536,129	\$1,571,648	\$1,536,129
20	Full-time equivalent positions	3.00	3.00	3.00

21 Subdivision 7.

BILL TOTAL

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
23				
24				
25	Grand total general fund	\$97,676,057	\$97,472,722	\$97,676,057
26	Grand total other funds	<u>127,922,235</u>	<u>129,174,589</u>	<u>127,922,235</u>
27	Grand total all funds	\$225,598,292	\$226,647,311	\$225,598,292

29 **SECTION 2. ONE-TIME FUNDING.** The following amounts reflect the one-time funding  
30 items approved by the sixty-fifth legislative assembly as adjusted for the 2017-19 biennium.

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1	<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
2	Seed cleaning plants	\$1,500,000	\$0
3	Junior master gardener program	15,000	0
4	Road and bridge asset management system	<u>300,000</u>	<u>0</u>
5	Total all funds	\$1,815,000	\$0
6	Total other funds	<u>1,700,000</u>	<u>0</u>
7	Total general fund	\$115,000	\$0

8       **SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount  
9 included in the grand total other funds appropriation line item in section 1 of this Act, any other  
10 income, including funds from federal acts, private grants, gifts, and donations, or from other  
11 sources received by the North Dakota state university extension service, the northern crops  
12 institute, the upper great plains transportation institute, the main research center, branch  
13 research centers, and agronomy seed farm, except as otherwise provided by law, is  
14 appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium  
15 beginning July 1, 2019, and ending June 30, 2021.

16       **SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
17 **INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues  
18 received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing  
19 operational expenses. Any revenues received in excess of \$755,000 may be spent only for  
20 one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

21       **SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
22 **INCOME - REPORT.** The Williston research extension center shall report to the sixty-seventh  
23 legislative assembly on amounts received and spent from mineral royalties, leases, or  
24 easements in the biennium beginning July 1, 2017, and ending June 30, 2019, and the  
25 biennium beginning July 1, 2019, and ending June 30, 2021.

26       **SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural  
27 research and education and appropriate branch research center directors, the director of the  
28 office of management and budget shall transfer appropriation authority within subdivisions 1, 2,  
29 4, and 5 of section 1 of this Act.

30       **SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The state board of  
31 higher education may adjust or increase full-time equivalent positions as needed for the entities

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1 in section 1 of this Act, subject to availability of funds. All full-time or part-time positions must be  
2 separate from North Dakota state university. Annually, the board shall report to the office of  
3 management and budget and to the budget section any adjustments made pursuant to this  
4 section.

5 **SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended  
6 general fund appropriation authority to and any excess income received by entities listed in  
7 section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any  
8 unexpended funds from these appropriations or revenues are available and may be expended  
9 by those entities, during the biennium beginning July 1, 2021, and ending June 30, 2023.





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Legislative Assembly  
of North Dakota

**HOUSE BILL NO. 1020**  
**(Governor's Recommendation)**

Introduced by

Appropriations Committee

(At the request of the Governor)

A bill for an act to provide an appropriation for defraying the expenses of the extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm; to provide for a transfer; and to provide an exemption.

**BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

**SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds as may be necessary, are appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, and from special funds derived from federal funds and other income, to the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm for the purpose of defraying the expenses of the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as follows:

Subdivision 1.

**NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE**

	<u>Base Level</u>	Adjustments or <u>Enhancements</u>	<u>Appropriation</u>
Extension Service	\$51,188,489	\$1,935,763	\$53,124,252
Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
Total all funds	\$52,280,009	\$1,935,763	\$54,215,772
Less estimated income	<u>26,646,689</u>	<u>1,240,295</u>	<u>27,886,984</u>
Total general fund	\$25,633,320	\$695,468	\$26,328,788
Full-time equivalent positions	242.51	0.00	242.51

Subdivision 2.

**NORTHERN CROPS INSTITUTE**

	<u>Base Level</u>	Adjustments or <u>Enhancements</u>	<u>Appropriation</u>
Northern Crops Institute	\$3,642,721	\$160,899	\$3,803,620
Total all funds	\$3,642,721	\$160,899	\$3,803,620
Less estimated income	<u>1,755,830</u>	<u>142,023</u>	<u>1,897,853</u>
Total general fund	\$1,886,891	\$18,876	\$1,905,767
Full-time equivalent positions	12.80	0.00	12.80

Subdivision 3.

**UPPER GREAT PLAINS TRANSPORTATION INSTITUTE**

	<u>Base Level</u>	Adjustments or <u>Enhancements</u>	<u>Appropriation</u>
Upper great plains transportation institute	\$22,618,201	(\$196,779)	\$22,421,422
Total all funds	\$22,618,201	(\$196,779)	\$22,421,422

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Less estimated income	<u>18,717,068</u>	<u>240,154</u>	<u>18,957,222</u>
Total general fund	\$3,901,133	(\$436,933)	\$3,464,200
Full-time equivalent positions	43.88	0.00	43.88

Subdivision 4.

MAIN RESEARCH CENTER

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Main Research Center	\$109,217,936	(\$2,185,887)	\$107,032,049
Total all funds	\$109,217,936	(\$2,185,887)	\$107,032,049
Less estimated income	<u>59,084,828</u>	<u>(1,031,188)</u>	<u>58,053,640</u>
Total general fund	\$50,133,108	(\$1,154,699)	\$48,978,409
Full-time equivalent positions	340.05	0.00	340.05

Subdivision 5.

RESEARCH CENTERS

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Dickinson Research Center	\$6,825,551	(\$118,534)	\$6,707,017
Central grasslands research center	3,423,624	(33,939)	3,389,685
Hettinger research center	4,975,133	9,565	4,984,698
Langdon research center	2,964,607	3,810	2,968,417
North central research center	4,953,652	35,851	4,989,503
Williston research center	5,118,890	(1,271)	5,117,619
Carrington research center	<u>9,175,491</u>	<u>270,370</u>	<u>9,445,861</u>
Total all funds	\$37,436,948	\$165,852	\$37,602,800
Less estimated income	<u>20,281,691</u>	<u>525,551</u>	<u>20,807,242</u>
Total general fund	\$17,155,257	(\$359,699)	\$16,795,558
Full-time equivalent positions	109.81	0.00	109.81

Subdivision 6.

AGRONOMY SEED FARM

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Agronomy Seed Farm	\$1,536,129	\$35,519	\$1,571,648
Total special funds	\$1,536,129	\$35,519	\$1,571,648
Full-time equivalent positions	3.00	0.00	3.00

Subdivision 7.

BILL TOTAL

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Grand total general fund	\$98,709,709	(\$1,236,987)	\$97,472,722
Grand total other funds	<u>128,022,235</u>	<u>1,152,354</u>	<u>129,174,589</u>
Grand total all funds	\$226,731,944	(\$84,633)	\$226,647,311

**SECTION 2. ONE-TIME FUNDING - EFFECT ON BASE BUDGET - REPORT TO SIXTY- SEVENTH LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fifth legislative assembly for the 2017-19 biennium and the 2019-21 one-time funding items included in the appropriation in section 1 of this Act:

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<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
Seed Cleaning Plants	\$1,500,000	\$0
Road and bridge asset management system	300,000	0
Junior master gardener program	15,000	0
Ext srvc web strategy & content re-imaging	0	345,000
Extraordinary repairs	<u>0</u>	<u>1,440,465</u>
Total all funds	\$1,815,000	\$1,785,465
Total other funds	<u>1,700,000</u>	<u>1,440,465</u>
Total general fund	\$115,000	\$345,000

The 2019-21 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The extension service and main research center shall report to the appropriations committees of the sixty-seventh legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2019 and ending June 30, 2021.

**SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount included in the grand total special funds appropriation line item in section 1 of this Act, any other income, including funds from federal acts, private grants, gifts, and donations, or from other sources received by the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, except as otherwise provided by law, is appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Williston research extension center shall report to the sixty-seventh legislative assembly on amounts received and spent from mineral royalties, leases, or easements in the biennium beginning July 1, 2017, and ending June 30, 2019 and the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural research and education and appropriate branch research center directors, the director of the main research center may transfer appropriation authority within subdivisions 1, 2, 4, and 5 of section 1 of this Act. Any amounts transferred must be reported to the director of the office of management and budget.

**SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The board of higher education may adjust or increase full-time equivalent positions as needed for the entities in section 1 of this Act, subject to availability of funds. The board shall report any adjustments to the office of management and budget pursuant to this section.

**SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended general fund appropriation authority to and any excess income received by entities listed in section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or revenues are available and may be expended by those entities, during the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 9. EXEMPTION.** The amounts appropriated for the veterinary diagnostic laboratory and the seed cleaning plants contained in subdivision 4 of section 1 of chapter 20 of the 2017 Sessions Laws, are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or related revenues are available and may be expended during the biennium beginning July 1, 2019, and ending June 30, 2021.



## ***Internal Control***

---

In our audit for the biennium ended June 30, 2017, we identified the following areas of North Dakota State University's internal control as being the highest risk:

### ***Internal Controls Subjected to Testing:***

- Controls surrounding the processing of revenues.
- Controls surrounding the processing of expenses.
- Controls effecting the safeguarding of assets.
- Controls relating to compliance with legislative intent.
- Controls surrounding the ConnectND (PeopleSoft) system.
- Controls relating to compliance with the MAT bus contract provisions.
- Controls surrounding the Agricultural Experiment Station, Extension Service and Northern Crops Institute.

The criteria used to evaluate internal control is published in the publication *Internal Control - Integrated framework* from the Committee of Sponsoring Organizations (COSO) of the Treadway Commission.

We gained an understanding of internal control surrounding these areas and concluded as to the adequacy of their design. We also tested the operating effectiveness of those controls we considered necessary based on our assessment of audit risk. We concluded that internal control was not adequate noting certain matters involving internal control and its operation that we consider to be significant deficiencies.

Auditors are required to report deficiencies in internal control that are significant within the context of the objectives of the audit. A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect (1) misstatements in financial or performance information; (2) violations of laws and regulations; or (3) impairments of effectiveness or efficiency of operations, on a timely basis. Considering both qualitative and quantitative factors, we identified the following significant deficiency in internal control. We also noted other matters involving internal control that we have reported to management of North Dakota State University in a management letter dated July 13, 2018.

### ***Inadequate Journal Entry Approval for the Agricultural Experiment Station and Extension Service (Finding 17-1)***

#### **Condition:**

Journal entries were not properly approved at the NDSU Agricultural Experiment Station and Extension Service. Of the 32 items tested, 10 were not properly approved (31%).

#### **Criteria:**

The Committee of Sponsoring Organizations (COSO) of the Treadway Commission's *Internal Control - Integrated Framework* states that control activities are the actions established through policies and procedures that help ensure that management's directives to mitigate risks to the achievement of objectives are carried out. They may be preventive or detective in nature and may encompass a range of manual and automated activities such as authorizations and approvals.

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The NDUS accounting manual states in part the basic principles of internal control include a review of journal entries and should be documented with the initials or signature of the reviewer and the date reviewed. Additionally, the accounting manual lists acceptable formats for approval, and further states that typing an approver's name in a fillable form is not an acceptable approval.

**Cause:**

There is a misinterpretation of what constitutes approval.

**Effect or Potential Effect:**

Improper or erroneous entries could be made to the general ledger.

**Recommendation:**

We recommend that all journal entries are properly approved and that the approval is documented.

**North Dakota State University Response:**

*NDSU agrees with the recommendation. However, there were no improper or erroneous entries. With support of CTS (Core Technology Services), NDSU plans to implement journal entry workflow in PeopleSoft by December 2018, which we anticipate will clearly demonstrate proper approval and will satisfy this audit recommendation.*

## ***Compliance with Legislative Intent***

---

In our audit for the biennium ended June 30, 2017, we identified and tested North Dakota State University's compliance with legislative intent for the following areas we determined to be significant and of higher risk of noncompliance:

- NDUS reported to the appropriations committees of the sixty-fifth legislative assembly on the use of one-time funding for the biennium ended June 30, 2017 (2015 HB 1003, chapter 3, section 2).
- The deferred maintenance funding pool was used for eligible projects that were identified in the campus master plan and space utilization studies (2015 HB 1003, chapter 3, section 25).
- Two dollars of matching funds were provided from operations or other sources for each one dollar of extraordinary repairs that were included in the capital asset line item (2015 HB 1003, chapter 3, section 38).
- The Main Research Center reported to the appropriations committee of the sixty-fifth legislative assembly on the use of one-time funding for the biennium ended June 30, 2017 (2015 HB 1020, chapter 20, section 2).
- Dickinson Research Center spent up to \$755,000 on operating expenses and any revenues in excess of \$755,000 were spent only on one-time expenses (2015 HB 1020, chapter 20, section 11).
- Williston Research Center reported to the sixty-fifth legislative assembly on amounts received and spent from mineral royalties, leases or easements for the bienniums ended June 30, 2015 and June 30, 2017 (2015 HB 1020, chapter 20, section 12).
- The Main Research Center and the Extension Service reported to the appropriation committees of the sixty-fifth legislative assembly on full-time equivalent positions for the biennium ended June 30, 2017 (2015 HB 2010, chapter 20, section 13).
- The Main Research Center reported to the budget section regarding the status of the flooded land study and spending related to the study for the biennium ended June 30, 2017 (2015 HB 1020, chapter 20, section 16).
- Proper use/approval of clearing account and petty cash/till funds (NDCC 54-06-08.1, Attorney General's letter dated September 11, 1987 and Article X, Section 12, part 1 of ND Constitution).
- BND used as credit card processing depository (NDCC 54-06-08.2).
- Scholarship expenses were proper (Article IX, Section 1 of the ND Constitution, NDCC 1-08-02, 15-10-12, 59-21).
- Fixed asset requirements were followed including surplus property, record keeping and lease analysis requirements (NDCC 54-44-04.6, 44-04-07, 54-27-21, 54-44.1-06, 54-27-21.1).
- Expenses including proper voucher approvals (NDCC 44-08-05.1, Article X, Section 12, subpart 2 of ND Constitution) and being within budgeted amounts (NDCC 54-44.1-09, Attorney General Opinion dated January 6, 1977).
- Travel-related expenses are made in accordance with state statute (NDCC 44-08-04, 44-08-04.1, 04.2, 04.3, 04.4, 04.5, 54-06-09).
- Purchasing including bidding and following sole source requirements (NDCC 54-44.4-01, 02, 05, 06, 54-44.7-02, 48-01.2, 44-08-01).
- Conflict of Interest (NDCC 12.1-13-03, 48-01.2-08).
- Carryover of unexpended appropriations (NDCC 54-44.1-11).
- Adequate blanket bond coverage (NDCC 26.1-21-08).



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- Capital construction (NDCC 48-01.2-02, 04, 07, 09, 10, 54-44.7).
- Unclaimed property laws (NDCC 47-30.1-02.1, 47-30.1-03.1).
- Nepotism (NDCC 44-04-09).
- Bond revenues and reserves (NDCC 15-55-03, 15-55-06).
- Misapplication of entrusted property (NDCC 12.1-23-07).

The criteria used to evaluate legislative intent are the laws as published in the *North Dakota Century Code* and the *North Dakota Session Laws*.

*Government Auditing Standards* requires auditors to report all instances of fraud and illegal acts unless they are inconsequential within the context of the audit objectives. Further, auditors are required to report significant violations of provisions of contracts or grant agreements, and significant abuse that has occurred or is likely to have occurred.

The results of our tests disclosed two instances of noncompliance that are required to be reported under *Government Auditing Standards*. These findings are described below. Other than these findings, we concluded there was compliance with the legislative intent identified above. We also noted certain inconsequential instances of noncompliance that we have reported to management of North Dakota State University in a management letter dated July 13, 2018.

### **Noncompliance With Procurement Rules (Finding 17-2)**

#### **Condition:**

NDSU had the following issues surrounding procurement:

- Eight sole source purchases for commodities and services (totaling \$680,203) did not adequately justify or exempt the purchase from the normal procurement process; and
- The Elan One credit card services program for study abroad was not properly procured. Total usage of the program card was \$1,042,132.

#### **Criteria:**

NDCC section 12.1-13-03, states in part, every public servant authorized to sell or lease any NDCC section 15-10-17 part 5, states in part, that the SBHE may determine policy for purchasing by the University System in coordination with OMB as provided by NDCC chapter 54-44.4 and NDCC section 44-08-01 part 3.

NDUS Procedure 803.1 parts 1 and 4, states in part that sole source purchases are unique and the vendor is the only vendor able to furnish the commodity or service. Sole source requests based on personal preference, cost or price, perceived quality, vendor performance, delivery time, trade-in allowance or no cost options or accessories or other special packages or deals are not permitted; rather, these items may be considered in evaluating bids or proposals.

#### **Cause:**

NDSU's purchasing policy does not include prudent information surrounding sole source purchases. The Elan One card program was not bid out because of the difficulties NDSU encountered in locating vendors that met their specific needs.

#### **Effect or Potential Effect:**

Without properly procuring commodities and services, there was noncompliance with NDUS procedures, and ultimately, noncompliance with NDCC chapter 54-44.4 and NDCC section 44-08-01 part 3.

**Recommendation:**

We recommend that NDSU properly procure commodities and services in compliance with NDCC and NDUS requirements.

**North Dakota State University Response:**

NDSU agrees with the recommendation but disagrees with the condition. Elan was the only vendor identified through an extensive search who could handle a faculty lead study abroad. OMB permitted NDSU the exemption from the state's procurement card. Card fees paid to Elan are below the threshold required for a competitive purchase. In the eight sole source purchases, NDSU achieved the best possible value. In some cases, the lowest price was selected from multiple quotes. In other cases a bid process was not appropriate. NDSU plans to propose a rewrite to the NDUS procedure to clarify these alternate procurement methods.

**Inadequate Controls Over Disclosed Conflicts of Interest (Finding 17-3)****Condition:**

NDSU had conflicts of interest that were disclosed and a summary list was maintained by the Purchasing Department; however, the summary list was not communicated with other departments and purchases were made with disclosed conflicts of interest without any additional scrutiny.

**Criteria:**

NDCC section 12.1-13-03, states in part, every public servant authorized to sell or lease any property, or to make any contract in his official capacity, alone or in conjunction with other public servants, who voluntarily becomes interested individually in the sale, lease, or contract, directly or indirectly, is guilty of a class A misdemeanor.

Committee of Sponsoring Organization of the Treadway Commission (COSO), states in part, control activities specifically relate to those policies and procedures that contribute to the mitigation of risks to the achievement of objectives to acceptable levels. Supervisory controls assess whether other transaction control activities are being performed completely, accurately, and according to policy and procedures. Control activities can be preventive or detective, preventive controls are designed to avoid an unintended event or result at the time of initial occurrence.

**Cause:**

There was a lack of communication between departments surrounding conflicts of interest.

**Effect or Potential Effect:**

There is noncompliance with NDCC section 12.1-13-03 and inadequate controls exist for purchases with disclosed conflicts of interest.

**Recommendation:**

We recommend NDSU develop and implement controls to ensure that no conflict of interest exists with any transaction with a disclosed conflict of interest.

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**North Dakota State University Response:**

*NDSU agrees with the recommendation. Department heads already approve conflict disclosures. However, as an extra step, NDSU Purchasing will summarize the reported conflict disclosures and provide a list to the department heads for further monitoring. In addition, we will inactivate the applicable supplier IDs in PeopleSoft to better flag future transactions to ensure department head approval on the transaction.*

**North Dakota University System  
 Extension Service, Main & Branch Research Centers, and Agronomy Seed Farm  
 Major Components of current base level**

	630 Extension	640 Main Station	641 Dickinson	642 Central Grasslands	643 Hettinger	644 Langdon	645 North Central	646 Williston	647 Carrington	649 Agronomy Seed Farm
Salaries	\$ 41,920,195	\$ 67,308,153	\$ 2,560,617	\$ 1,775,191	\$ 2,457,753	\$ 1,562,704	\$ 2,529,959	\$ 3,465,061	\$ 5,212,338	\$ 565,381
Operating	9,949,814	36,641,090	3,149,934	1,373,433	2,192,380	1,146,903	1,998,693	928,829	2,738,153	670,748
Equipment	410,000	4,693,000	1,115,000	275,000	325,000	255,000	425,000	725,000	1,225,000	300,000
Capital Projects	-	-	-	-	-	-	-	-	-	-
<b>Total Budget</b>	<b>\$ 52,280,009</b>	<b>\$ 108,642,243</b>	<b>\$ 6,825,551</b>	<b>\$ 3,423,624</b>	<b>\$ 4,975,133</b>	<b>\$ 2,964,607</b>	<b>\$ 4,953,652</b>	<b>\$ 5,118,890</b>	<b>\$ 9,175,491</b>	<b>\$ 1,536,129</b>
<b>Funding:</b>										
Federal Fund	\$ 7,740,790	\$ 8,419,260	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
General Fund	25,633,320	49,557,415	3,383,862	1,991,605	2,167,501	1,559,510	1,875,900	2,737,313	3,439,566	-
Special Fund	18,905,899	50,665,568	3,441,689	1,432,019	2,807,632	1,405,097	3,077,752	2,381,577	5,735,925	1,536,129
<b>Total Funding</b>	<b>\$ 52,280,009</b>	<b>\$ 108,642,243</b>	<b>\$ 6,825,551</b>	<b>\$ 3,423,624</b>	<b>\$ 4,975,133</b>	<b>\$ 2,964,607</b>	<b>\$ 4,953,652</b>	<b>\$ 5,118,890</b>	<b>\$ 9,175,491</b>	<b>\$ 1,536,129</b>

Source: IBARS 2019-21, Agency Submitted

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**NDSU Extension Service - 630**

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**Comparison of 2017-19 Appropriation and Estimated Spending**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
<b>Total General Fund Appropriation</b>	<b>\$ 25,648,320</b>	<b>\$ 16,167,224</b>	<b>\$ 9,481,096</b>	<b>--Balance will be drawn down for expenditures by end of biennium.</b>

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**NDSU Main Research Station - 640**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>* \$50,133,108</b>	<b>\$30,245,433</b>	<b>\$19,887,675</b>	--Balance will be drawn down for expenditures by end of biennium. * Includes carryover of \$575,693

Source: November 2018 Appropriation Status Report

Note: uncertain changes expected to Federal funding levels.

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**NDSU Dickinson Research Center- 641**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 3,383,862</b>	<b>\$ 2,329,501</b>	<b>\$ 1,054,361</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

**NDSU Central Grasslands Research Center- 642**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 1,991,605</b>	<b>\$ 1,429,975</b>	<b>\$ 561,630</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**NDSU Hettinger Research Center- 643**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 2,167,501</b>	<b>\$ 1,505,832</b>	<b>\$ 661,669</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

**NDSU Langdon Research Center- 644**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 1,559,510</b>	<b>\$ 1,089,165</b>	<b>\$ 470,345</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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NDSU North Central Research Center- 645

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
<b>Total General Fund Appropriation</b>	<b>\$ 1,875,900</b>	<b>\$ 1,014,979</b>	<b>\$ 860,921</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

NDSU Williston Research Center- 646

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
<b>Total General Fund Appropriation</b>	<b>\$ 2,737,313</b>	<b>\$ 1,751,758</b>	<b>\$ 985,555</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

NDSU Carrington Research Center- 647

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
<b>Total General Fund Appropriation</b>	<b>\$ 3,439,566</b>	<b>\$ 2,093,432</b>	<b>\$ 1,346,134</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**NDSU Agronomy Seed Farm- 649**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
<b>Total Appropriation</b>	<b>\$ 1,536,129</b>	<b>\$ 1,000,441</b>	<b>\$ 535,688</b>	

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**North Dakota University System  
Extension Service and Main & Branch Research Centers  
Reconciliation of 2017-19 Orig. General Fund Appropriation to 2019-21 Executive Recommendation**

	(1)	(2)	(3)
	<u>Extension Service</u>	<u>Main Research Center</u>	<u>Branch Research Centers</u>
<b>2017-19 Original General Fund Appropriation(5/31/18 Approp.)</b>	<b>\$ 25,648,320</b>	<b>\$ 50,133,108</b>	<b>\$ 17,155,257</b>
<b>Base Adjustments:</b>			
Capital Bond Payment adjustment		(65,091)	(23,091)
Less 2017-19 One-time Appropriations	(15,000)	-	-
Less 2017-19 Capital Projects		(575,693)	-
<b>Total Base Adjustments</b>	<b>(15,000)</b>	<b>(640,784)</b>	<b>(23,091)</b>
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>25,633,320</b>	<b>49,492,324</b>	<b>17,132,166</b>
<b>Executive Recommendation Base Increases (Decreases):</b>			
4%/2% salary/benefit increase and health insurance increases	1,413,800	2,441,827	863,952
Base Budget Reduction	(1,063,332)	(2,955,742)	(1,200,560)
Web strategy & content imaging project	345,000		
<b>2019-21 Recommended Base General Fund Increases(Decreases)</b>	<b>695,468</b>	<b>(513,915)</b>	<b>(336,608)</b>
<b>2019-21 Total Executive Recommendation - General Fund</b>	<b>26,328,788</b>	<b>48,978,409</b>	<b>16,795,558</b>
<b>Increase (Decrease) From 2017-19 Base General Fund Budget</b>	<b>\$ 695,468</b>	<b>\$ (513,915)</b>	<b>\$ (336,608)</b>

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**North Dakota University System  
 Extension Service, Main & Branch Research Centers, and Agronomy Seed Farm  
 Reconciliation of 2017-19 Original Other Fund Budget Appropriation to 2019-21 Executive Recommendation**

	(1) Extension Service	(2) Main Research Center	(3) Branch Research Centers	(4) Agronomy Seed Farm
<b>2017-19 Original Other Fund Appropriation</b>	<b>\$ 26,646,689</b>	<b>\$ 59,084,828</b>	<b>\$ 21,781,691</b>	<b>\$ 1,536,129</b>
Remove Capital Project & One Time funds		(5,997,398)	\$ (1,500,000)	
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>\$ 26,646,689</b>	<b>\$ 53,087,430</b>	<b>\$ 20,281,691</b>	<b>\$ 1,536,129</b>
<b>Executive Recommendation Base Increases (Decreases):</b>				
4%/2% salary/benefit increase and health insurance increases	1,240,295	1,525,745	325,551	35,519
One-time extraordinary repairs(SIIF)	-	1,440,465		
Oakes irrigation site funding			200,000	
5%/10 net reduction/increase	-	2,000,000	-	
<b>Total Executive Recommendation Increases</b>	<b>1,240,295</b>	<b>4,966,210</b>	<b>525,551</b>	<b>35,519</b>
<b>2019-21 Total Executive Recommendation - Other Funds</b>	<b>\$ 27,886,984</b>	<b>\$ 58,053,640</b>	<b>\$ 20,807,242</b>	<b>\$ 1,571,648</b>

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**North Dakota University System  
Branch Research Centers  
Reconciliation of 2017-19 Orig. General & Other Fund Appropriation to 2019-21 Executive Recommendation**

	(1) Dickinson	(2) Central Grasslands	(3) Hettinger	(4) Langdon	(5) North Central	(6) Williston	(7) Carrington	(8) Total
<b>General Fund:</b>								
2017-19 Original General Fund Appropriation	\$ 3,383,862	\$ 1,991,605	\$ 2,167,501	\$ 1,559,510	\$ 1,875,900	\$ 2,737,313	\$ 3,439,566	\$ 17,155,257
<b>Base Adjustments:</b>								
Capital Bond Payment adjustment		(8,782)			(14,309)			(23,091)
Remove one time funding								-
Remove Capital Project								-
Base Payroll adjustments	-							-
<b>2019-21 Adjusted Appropriation, Less Base Adjustments</b>	<b>3,383,862</b>	<b>1,982,823</b>	<b>2,167,501</b>	<b>1,559,510</b>	<b>1,861,591</b>	<b>2,737,313</b>	<b>3,439,566</b>	<b>17,132,166</b>
<b>Executive Recommendation Increases (Decreases):</b>								
Restore funding	75,000	62,500	75,000	62,500	75,000	75,000	75,000	500,000
10% reduction	(338,386)	(193,469)	(216,750)	(155,951)	(178,316)	(273,731)	(343,957)	(1,700,560)
4%/2% salary/benefit increase and health insurance increases	129,678	101,236	115,263	89,702	90,432	155,370	182,271	863,952
SBARE Initiatives								
<b>2019-21 Recommended Base General Fund (Decreases)</b>	<b>(133,708)</b>	<b>(29,733)</b>	<b>(26,487)</b>	<b>(3,749)</b>	<b>(12,884)</b>	<b>(43,361)</b>	<b>(86,686)</b>	<b>(336,608)</b>
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>\$ 3,250,154</b>	<b>\$ 1,953,090</b>	<b>\$ 2,141,014</b>	<b>\$ 1,555,761</b>	<b>\$ 1,848,707</b>	<b>\$ 2,693,952</b>	<b>\$ 3,352,880</b>	<b>\$ 16,795,558</b>
<b>2019-21 (Decrease) From 2017-19 Base Budget</b>	<b>\$ (133,708)</b>	<b>\$ (29,733)</b>	<b>\$ (26,487)</b>	<b>\$ (3,749)</b>	<b>\$ (12,884)</b>	<b>\$ (43,361)</b>	<b>\$ (86,686)</b>	<b>\$ (336,608)</b>
<b>Other Funds:</b>								
2017-19 Original Other Fund Appropriation	\$ 3,441,689	\$ 1,432,019	\$ 2,807,632	\$ 1,405,097	\$ 3,077,752	\$ 3,881,577	\$ 5,735,925	\$ 21,781,691
Remove Capital Project						(1,500,000)		(1,500,000)
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>\$ 3,441,689</b>	<b>\$ 1,432,019</b>	<b>\$ 2,807,632</b>	<b>\$ 1,405,097</b>	<b>\$ 3,077,752</b>	<b>\$ 2,381,577</b>	<b>\$ 5,735,925</b>	<b>\$ 20,281,691</b>
<b>Executive Recommendation Increases (Decreases):</b>								
5%/10% reduction	(344,169)	(143,202)	(280,763)	(140,510)	(307,775)	(238,158)	(573,593)	(2,028,170)
Restore funding	344,169	143,202	280,763	140,510	307,775	238,158	573,593	2,028,170
4%/2% salary/benefit increase and health insurance increases	15,174	4,576	36,052	7,559	63,044	42,090	157,056	325,551
Oakes irrigation site funding		-					200,000	200,000
<b>2019-21 Recommended Base Other Fund Increases</b>	<b>15,174</b>	<b>4,576</b>	<b>36,052</b>	<b>7,559</b>	<b>63,044</b>	<b>42,090</b>	<b>357,056</b>	<b>525,551</b>
<b>2019-21 Total Executive Recommendation - Other Funds</b>	<b>\$ 3,456,863</b>	<b>\$ 1,436,595</b>	<b>\$ 2,843,684</b>	<b>\$ 1,412,656</b>	<b>\$ 3,140,796</b>	<b>\$ 2,423,667</b>	<b>\$ 6,092,981</b>	<b>\$ 20,807,242</b>

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## **Proposed budget reductions to meet the governor's 90 or 95 percent budget request guidelines**

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### **Main Research Center** (\$4,955,742 General Fund; \$5,908,483 Special Funds)

The Main Research Center would not be able to function as in the past with cuts of this magnitude. Last Session's cut included a reduction of 30.28 FTE and significant operating cuts. To cut additional amounts this Session would require closure of programs, elimination of related FTEs, and severely impact service to North Dakota citizens.

### **Branch RECs** (\$1,700,560 General Funds; \$2,028,169 Special Funds)

The Branch RECs would not be able to function as in the past with cuts of this magnitude. Last Session's cut included a reduction of 10.25 FTE and significant operating cuts. To cut additional amounts in both General and Special Funds this Session would likely require closure of research programs, elimination of related FTEs, and severely impact service to North Dakota citizens.

### **NDSU Extension** (\$2,563,332 General Funds; \$2,664,669 Special Funds)

NDSU Extension would not be able to function as in the past with cuts of this magnitude. Last Session's cut included a reduction of 12.47 FTE and significant operating cuts. In addition, a review of NDSU Extension was undertaken by SBARE in conjunction with the Governor's Office, and many changes have been implemented. To cut additional amounts in both General and Special Funds this Session would require closure of programs, elimination of related FTEs, and severely impact service to North Dakota citizens.

## AES Testimony

Good morning members of the House Education and Environment Division. Before I start the official testimony I did want to mention that it is likely that some of our constituent groups will not be here today because they will be attending Dale Ihry's funeral. Dale was the executive director of the ND Corn Utilization Council and ND Corn Growers. He was a friend of agriculture and a supporter who will be missed.

Thank you for your support of our budgets during what was a very difficult session in 2017. My name is Greg Lardy and I am a native of Sentinel Butte, ND where I grew up on a ranch and small grain operation. I have been at NDSU since 1997, first serving as the beef cattle extension specialist and then as department head in Animal Sciences.

Since 2015, I have served in a part time role as the Associate Vice President for Ag Affairs. In July, I started in the role of interim director, NDSU Extension. In August, when Dr. Grafton was named interim Provost, I took on additional role as Acting Director of the ND Agricultural Experiment Station.

The ND Agricultural Experiment Station plays an important role in the agricultural industry in the state. Our scientists seek solutions to production problems, develop new crop varieties and improved livestock production practices, and they help identify new uses for our agricultural commodities. Our REC network is strategically located across the state and serves the needs of the unique growing regions and commodities which are grown in the various locales. This morning you will hear from a number of the grass roots users of our research. They will brief you on the impacts that our research has on their operations and how the work we do leads to a brighter future for ND agriculture and the state's economy as a whole.

Agriculture touches every corner of North Dakota. The impact of agriculture is felt by businesses throughout the state, whether you are talking about the local insurance business in Maddock, a car dealership in Bowman, or a new tech start up focused on precision agriculture in Fargo. Each of these businesses benefits directly or indirectly from the work



conducted by the ND Agricultural Experiment Station and the research which we conduct.

As part of the requirement from last session SB2020, we are required to report a number of items. I'll briefly touch on those this morning. These can be found on Page 17 of your budget book.

**A. Reporting required to Legislative Appropriation Committees – AES – page 17**

- a. **Section 3** – Reporting on specific items added to the budget as one-time costs
  - i. Seed Cleaning – WREC received \$1.5 Other fund auth. to begin fundraising. This is underway. Dr. Bergman will address in his testimony
  
- b. **Section 7** -- Dickinson REC – Mineral Rights Income – The DREC may spend up to \$755,000 during the biennium from mineral royalties, leases, or easements for the ongoing operations. Oil revenue received during this period was \$114,592, well below the allowable spending level.
  
- c. **Section 8** – Williston REC - Mineral Right Income –The mineral rights income received by WREC during the period July 1, 2013 to June 30, 2015 was \$491,230. No funds were spent. Amount received July 1, 2015 to November 30, 2016 was \$132,048. Amount spent was \$571,788. Amount rec. July 1, 2017 – Nov. 30 2018 \$22,640. Amount spent was \$23,883
  
- d. **Section 12** – Exemptions – carryover for capital projects:
  - Seed Cleaning at NCREC – Dr. Forster will address in her testimony
  - Seed cleaning at CREC – Dr. Schatz will address in his testimony
  - Veterinary Diagnostic Lab – project is complete....thanks again.....finished under budget and \$214k was returned to the SIF

In addition, we received a letter from Allen Knudson, Legislative Budget Analyst and asking for our testimony to address certain items. These items are found on pages 71-88. Some of these topics will be covered in the testimony that follows. As we proceed, feel free to ask for any clarifications or detail you may need.

One item that I wanted to mention is the budget difficulty faced by two of our REC's (the North Central and the Dickinson REC). Previously both centers had directors that were partially funded by NDSU Extension as both had significant extension duties. This is no longer the case and both centers now fund the director positions from the REC budgets. This has limited the ability of these two centers to fill other important scientist positions at each location.

## **B. Description and mission statement**

### **Main Station Page 13**

**The agricultural experiment station shall develop and disseminate technology important to the production and utilization of food, feed, fiber, and fuel from crop and livestock enterprises. The research must provide for an enhancement of the quality of life, sustainability of production, and protection of the environment.**

**As Chairman Peltier mentioned, SBARE has listened carefully to the needs of agriculture and these needs can be found on pages 19-21 of the budget book. I will briefly touch on each of these initiatives.**

***The top ranked initiative is the Agri biome Initiative. The microbiome encompasses the microorganisms that inhabit a particular environment. We each have a microbiome. On our skin, in our nasal passages, in our digestive tract. The crops and livestock we grow also have a microbiome. The agri biome is the community of microorganisms which live in the soil, on plants, and in the digestive tracts of animals, just to name a few places. The agri biome is largely unstudied but holds promise for unlocking the next wave of productivity gains in agriculture. A better understanding of the agri biome may help us reduce fertilizer applications, improve growth***

**and nutrient utilization, and defend against plant and animal diseases. Following much discussion SBARE ranked this as their number one initiative. We are seeking an appropriation of \$1,160,000 which includes scientist and technician working on microbe-livestock interactions and a scientist and technician working on organismal-plant interactions.**

**Precision Agriculture. Our current \$600,000 appropriation is administered as a competitive grant program. We are requesting an additional \$800k to supplement this grant program and establish smart farms in Casselton and Fargo. This appropriation would allow us to continue to enhance our efforts in this area and provide research based solutions for ND's agricultural industry.**

**Enhancing Research Capacity-The request is for \$280,000 for operating support for REC's, \$210,000 in support for the Main Station, and \$200,000 in support for the Oakes Irrigation Site. The Executive Budget included \$200,000 in other fund authorization for the Oakes site. We request this committee consider providing general fund dollars to fund this request.**

**SBARE also ranks the capital improvement project request for the ND Ag Experiment Station. I will provide a brief summary of the capital improvement project with more detail found on page 59 of your budget book. The priorities identified in that process include the following:**

- 1. Replacement for Waldron Hall-Waldron was originally built in the 1950's to house lab space for the wheat breeding program. In the 1960's an addition was built to house another 16 scientists from the departments of Agronomy and Plant Pathology. Currently the building houses lab space for nearly 60 scientists. The lab space is insufficient for the specific research activities associated with these scientists. The estimated cost for this facility is \$65,000,000.**
- 2. Seed Cleaning facility at WREC-Seed cleaning facilities at the WREC are inadequate for the types of now being grown in the Foundation seed program at Williston. \$750,000 in state funds**

*are requested. Dr. Bergman will address this in more detail in his testimony.*

- 3. Equipment Storage Sheds-The cost of specialized farm and plot equipment continues to increase. \$2.4 million is requested to construct 8 sheds throughout the Experiment Station.*
- 4. Precision Ag/ABEN Facility-A field laboratory with capabilities to test soil tilth and chemical drift. \$6 million is requested to construct this facility.*

***In addition, the Governor's Executive Budget contained a funding recommendation for \$1,440,465 for extraordinary repairs. This funding would help the Experiment Station address critical repair needs across both the Main Station and REC's.***

I would also be remiss if I failed to mention the importance of a compensation package for our ND Agricultural Experiment Station employees. We believe that a compensation package will allow us to continue to retain and recruit the caliber of scientists and other personnel that the citizens of North Dakota have come to expect from our agency. We ask for your consideration of a compensation package for our employees as you consider this budget.

#### AES Impacts

- AES Scientists are developing tools to lead the fight against herbicide resistant weeds. These tools include genetic diagnostic tools which will identify resistant weeds earlier and allow more precise herbicide applications. We estimate these tools may provide long term cost savings of \$20 to \$50 per acre.
- AES plant breeding programs have the following impacts:
  - 92% of the black bean acreage in the state is planted to Eclipse, an NDSU variety
  - 90% of the durum acreage in ND is planted to NDSU developed varieties.
  - 60% of the pinto bean acreage in the state is planted to slow darkening pintos, and approximately half of that acreage is planted to ND Palamino, the first slow darkening variety released in the state.
  - Nearly 19% of the fall potato acres in ND, ID, OR, WA, MN, WI, Maine were planted to NDSU varieties.

- Our research indicates that the value of replacement heifers can be increased over \$500 per head through the use of Artificial Insemination.
- Research conducted by scientists at the DREC and Main Station indicates that more emphasis on matching the beef cow to the forage resources and emphasizing longevity could result in over \$20 million in additional revenue for beef cattle producers.
- Scientists with the ND Agricultural Experiment Station continue to develop better ways to manage saline soils in ND. Our latest research indicates saline and non-saline areas within a field function as different ecosystems. This work will potentially lead to better methods of using site specific farming to manage cropping systems impacted by saline issues.

We also have a number of individuals who wish to testify on behalf of our REC's and Main Station. At this point I will conclude my testimony and answer any questions you may have.

Thank you for your questions and consideration of our request. At this point Blaine Schatz, director of the Carrington REC and Justin Topp, Vice Chair of their advisory board will provide testimony.

January 10, 2019

Testimony to House Education & Environment Division

Mr. Chairman and Members of the Committee:

For the record, my name is Keith Peltier. I am the General Manager of Proseed Inc. and an Ag Coalition appointee to the State Board of Agricultural Research and Education (SBARE). I currently serve as the Chairman of SBARE. Thank you for the opportunity to appear before you today.

The State Board of Agricultural Research and Education (SBAR) was established by Legislative decree in 1997. It was responsible for budgeting and policy-making associated with the supervision of the North Dakota Agricultural Experiment Station. The law was amended in 1999 to include responsibility for the North Dakota State University (NDSU) Extension Service and the name was changed to the State Board of Agricultural Research and Education (SBARE).

As outlined in 15-12.1-17 there are 10 responsibilities of SBARE:

- 1. Determine the causes of any adverse economic impacts on crops and livestock produced in this state; examples such as the past drought's effects on livestock feed, the effects of cyst nematode of soybeans,*
- 2. Develop ongoing strategies for the provision of research solutions and resources to negate adverse economic impacts on crops and livestock produced in the state; such as exploring microbial activity that might reduce drought stress in plants and microbial activity in animals that might improve feed conversions.*
- 3. Develop ongoing strategies for the dissemination of research information through the Extension Service; such as upgrading our web system to better deliver transformational information and informing the farming community that as per adult education information the farmers using technology such as Precision agriculture get returns that are \$88 dollars an acre more than those not using technology.*

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4. *Implement the strategies developed under subsections 2 and 3, subject to the approval of the state board of higher education; We are putting forward a budget with 3 research priorities for research and two for extension.*
5. *Develop, with the agricultural experiment station and the extension service, an annual budget for the operations of these entities; We are putting forth a budget that is unchanged from last year.*
6. *Develop a biennial budget request based on its prioritized needs list and submit that request to the president of North Dakota state university and the state board of higher education, and forward its prioritized needs list and request without modification to the office on management and budget and the appropriations committees of the legislative assemblies; We are putting forth 3 research priorities and 2 extension priorities.*
7. *Maximize the use of existing financial resources, equipment, and facilities to generate the greatest economic benefit from research and extension efforts and to promote efficiency;*
8. *Annually evaluate the results of research and extension activities and expenditures and report the findings to the legislative management and the state board of higher education;*
9. *Advise the president of North Dakota state university regarding the recruitment, selection, and performance of the vice president of agricultural affairs, the extension service director, and the station director; and*
10. *Present a status report to the budget section of the legislative management.*

As required by the Century Code, SBARE develops the biennial budget request by receiving information from commodity groups, stakeholders, researchers, extension leaders, and agribusiness interests in the state. We started this current budget-building effort late in 2017 by inviting more than 300 groups and/or individuals to provide input. The Board received input from many of these groups in the months that followed. The information presented was summarized into specific bundled initiatives based on

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appropriate topics. The Board considered these bundled programmatic initiatives, capital improvement project requests, and one-time funding needs and finalized the ranking in May of 2018.

The North Dakota Agricultural Experiment Station and NDSU Extension are critical to enhancing the Agricultural industries in the state and improving the lives of all North Dakotans.

State government cannot spend a better dollar than it can for Ag Research!! Multiple studies over the last 20 years by USDA, think tanks and universities show that over the times studied (40-50 years) the average return to Public Ag Research is **40%**. Microsoft hasn't been that good. The Legacy fund would kill for that kind of return.

The wheat varieties released by NDSU are one example of this ROI, it has been determined that each variety released is worth between **\$69 million and \$284 MILLION** to the North Dakota economy over the periods of time that the variety remained in the market place.

Beef cattle are an important sector for the North Dakota economy. The "2016 Nutrient Requirements for Beef Cattle" a tool used by ND cattlemen to more accurately formulate beef cattle diets if used indicates that a 5% improvement in feed efficiency could save the ND cattlemen up to **\$25 Million** in feed costs annually.

**Remember these numbers 40% ROI, \$69 to \$284 million, \$25 million all Big numbers**

**One out of every 4 people work in Agriculture and are affected by this research. Agriculture is in every county in ND.**

Thanks again for your past and future support.

Sincerely,

Keith Peltier  
SBARE Chair



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**Testimony to North Dakota House Appropriations Committee: HB1020**  
January 10, 2019  
**North Dakota State University**  
**NDSU Agriculture Experiment Station & Research Extension Centers**

Good morning, my name is Blaine Schatz, I am the director of the Carrington Research Extension Center. Representative Monson and House Appropriations Committee members, I thank you for the opportunity to address your committee.

The agriculture industry across North Dakota is as diverse and complex as any place in our country. Because of this diversity, our producers have many opportunities to compete and succeed in providing food, feed and fuel to the world's consumers. However, these same diverse opportunities come with challenges for our producers as they look to utilize their inputs most efficiently, manage crop pests and improve the natural resources that are the basis of agriculture's success.

The CREC is well positioned to address many of the challenges our producers face as they work to maintain a vibrant agriculture economy in our state. The CREC has research programs in agronomy, livestock, plant pathology, soils and precision agriculture that are working together on producer challenges that have been identified by our advisory board, individual producers and our private industry collaborators. Your support of the Experiment Stations budget is critical in putting us in the best position to provide the research based support our producers and the broader agricultural industry expects.

Before I conclude, I would like to briefly update you on the seed plant capital project at the Carrington Center that this committee and the legislature supported during the 2015 session. This past October, this facility was mostly completed to the point that it became operational. We thank you for your support toward funding this facility.

With me, this morning to provide testimony regarding the CREC's programs is Justin Topp, the chairman of the CREC Advisory Board.

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**Testimony to North Dakota House Appropriations Committee: HB1020**  
January 10, 2019  
**North Dakota State University**  
**NDSU Agriculture Experiment Station & Research Extension Centers**

My name is Justin Topp. I am a 4<sup>th</sup> generation farmer from Grace City, North Dakota.

Today, I'm here on behalf of the countless farmers and ranchers who use and rely on the Carrington Research Extension Center. I want to talk about the value of the CREC and what it means to us as farmers and ranchers.

According to the USDA and based on 2015 production, North Dakota ranked No. 1 or 2 in 11 crops: Barley, Pinto Beans, Black Turtle Beans, Canola, Flax, Lentils, Dry Edible Peas, Oil Sunflowers, Non-Oil Sunflowers, Spring Wheat, and Durum Wheat. As North Dakota farmers, we are good at what we do, but we don't do it alone. We utilize CREC resources and research, and rely on the expertise and scientific knowledge of the staff to answer questions that help us to continually lead the nation in the production of these and many other crops.

The CREC acts as the research and development arm for farmers and ranchers in central North Dakota, and is the leading source of information on crop and livestock production for our area. The research center's areas of research include cover crop usage and grazing of cover crops, how crop rotation effects yield, fertilizer rate trials, chemical use trials, variety trials, organic trials, alternative feed source trials, and the list goes on and on. As individual famers we can't even begin to scratch the surface of the breadth and depth of the research being done at the CREC! Thanks to the research and educational programs CREC provides, farmers and ranchers benefit from enhanced productivity. With increased productivity comes increased revenue for farmers and ranchers in our region and state. In turn returning more tax dollars back to our states and local communities!

Seed, chemical, and fertilizer companies spend millions of dollars each year researching and testing their products. But most of those products are tested in areas with different weather patterns and soil types than North Dakota, and are conducted by companies with a financial stake in the results. CREC is an unbiased source that tests these products in our geographical region. In 2018 alone, CREC tested 104 RR soybean varieties and 36 more conventional or Liberty Link varieties. And that's just soybeans, they do similar trials for other crops as well. The results from CREC's variety trials are widely used by producers in our area to make their annual selection decisions. We rely on this information from CREC, because we trust the source and have benefited from the information year after year.

Over the years, my family's operation has frequently used CREC as a resource. Most recently, in 2018 when our farm certified and grew 600 acres of organic corn. Even though the CREC is not responsible for turning our farm onto the economics of organics, they are entirely responsible for giving me the confidence that we could grow organics successfully. The research centers' extensive trials on crop rotation, tillage, cover crops, and organic varieties are all tools I used to decide that our farm could succeed in an organic environment. I'm very grateful for the CREC staff, the research they conduct, the educational programs they host, and the tools they provide, as they help our operation thrive.

Justin Topp  
T-T Ranch  
Grace City, ND  
701-307-0408  
Justin.k.topp@gmail.com

# NDSU Central Grasslands Research Extension Center

Enhancing Lives while Improving Ecosystem Services and  
Conservation of the Grasslands



## Agriculture #1 Industry in North Dakota (ND Dept. Commerce 2019)

- ◆ \$10.9 billion per year (NASS.USDA 2017)
- ◆ 24% of the state's population is employed in the agricultural sector
- ◆ 90% of the state's land is used for agriculture
  - \* 16.4 million acres are range, pasture and hay land
- ◆ 1.81 million head of beef cattle
  - \* Rank 4th in total economic value behind soybeans, wheat, and corn at \$894 million
  - \* Hay production ranks 6th at \$326 million

## Tourism #3 Industry in North Dakota (ND State Government 2019)

- ◆ \$3.0 billion per year
- ◆ Much of these dollars are driven by recreational activities associated with our natural resources

## Current Research and Extension Programming at CGREC:

### 1. Add value to our grazing lands through enhanced grazing efficiency

- a. A 10% increase in harvest efficiency would add economic value to our grazing land by 35-40% (~\$30/acre)

### 2. Assess different conservation tools to increase habitat for wildlife and pollinators. Our objectives include:

- a. Reduce exotic cool-season grasses while increasing plant diversity
- b. Create scientific outputs that can be used when developing new policies related to threatened and endangered species
- c. Study disturbance ecology to enhance soil health

### 3. Assess late-season grazing and forage systems

- a. Improve economic efficiency through reduced fossil fuel use, reduced labor, reduced depreciation to equipment, and add value to the land
- b. Enhance soil health characteristics and microbial populations

### 4. Study livestock precision agriculture, beef cattle reproduction, and beef cattle nutrition

- a. Add value to the animal in terms of genome selection, feeding efficiency, and fetal programming



#### *Impact of the 2017-2019 appropriation budget:*

- ◆ Eliminated two scientist FTEs and one staff FTE: 1 forage scientist, 1 range scientist, 1 forage technician

#### *Request for the 2019-2021 appropriation budget:*

- ◆ Hold even budget with the opportunity for pay raises

## **Dickinson Res. Ext. Center Presentation to House Appropriations Jan. 10, 2019**

Thank you Acting Director Faller, Chairman Monson and committee members for the record my name is Derrick Dukart a past advisory board member for the Dickinson Research and Extension Center and here today representing the current advisory board. The Dickinson Research Center is an important center with major research efforts in animal production and range research.

The North Dakota Agriculture Industry is rapidly changing and along that path challenges. We as North Dakotans are no stranger to change and challenges all we have to do is look out our windows and see progress that is being made as farmers and ranchers produce products for the world using new equipment and technologies as they produce more with less and lead the country in producing some of the world's most sought after commodities.

The Dickinson Research and Extension Center has been at the forefront of some of these changes all along. They have developed programs such as CHAPS that enabled ranchers to assess the performance and compare that to benchmarks of other herds. They have taken the initiative and partnered with USDA Natural Resources Conservation Service(NRCS), Soil Conservations Districts of Dunn and Central Stark and Western SCD to form the Southwest ND Soil Health Demonstration project to further study how we can use cover crops and livestock in our cropping systems.

To have a vibrant and productive center we must have a Director that can oversee the inner workings of the center along with reviewing the research projects with major input from the advisory board and working with SBARE to include needs of DREC in the next legislative session two years from now. The researchers must be able to take a concept or idea and turn that into project that can be studied and explored with results that are either positive or negative in an environment that is free of outside influence. The Extension staff must be able to take the resulting research and bring it to the public and actual apply these ideas and concepts to our everyday life and businesses.

The advisory board plays an important role in the center. While we advocate for the center we also bring new ideas or grassroots research to evaluate. One of those comments that the board and staff hears is to bring back an agronomist and re-initiate the agronomy research program. The board also sees the need for an equipment storage building and with any center the need to do maintenance and repairs on buildings or equipment to keep a safe and secure environment for the staff and public to work and visit.

The future of Dickinson Research and Extension Center has unlimited potential to bring cutting edge research in agronomy, animal and range production research but without continued funding current research projects along with future projects would be very difficult, if not impossible to continue.

Respectfully Submitted by Derrick Dukart

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# Hettinger Research Extension Center

## Hettinger REC Research in Brief

- Integrated crops, livestock, and range research and extension
- Variety, herbicide, and crop production research
- Lamb and beef feedlot nutrition and management
- Reproductive management of fall, winter, and spring lambing ewes
- Multiple-land use management including cropping systems, livestock, and wildlife as potential outputs
- Livestock Extension and applied calf backgrounding

The Hettinger Research Extension Center (HREC) was established from a gift of 160 acres by the residents of Adams County and the city of Hettinger in 1909. Currently, the HREC owns or rents nearly 5,000 acres of land, primarily in Adams County, ND, for the purpose of research in weed science, agronomy, range and wildlife science, and animal science. The HREC also lambs over 1,000 sheep and calves close to 100 cows. Currently, we have 13 full-time employees including 4 PhD and 1 M.S. level scientists and extension specialists, 3 research technicians, and 5 support staff.



Research at HREC involves the disciplines of animal science, range and wildlife science agronomy, and weed science. Collaboration is with Main Station scientists, Branch Station scientists, U.S. Forest Service, grazing associations, university scientists from WY, SD, and MT, and USDA research entities in these research disciplines to improve the productivity of livestock and cropping systems and economic development of the region. Through these efforts, the center's research program has gained a national reputation for its involvement with sheep production systems as well as a strong regional and state reputation for its research in agronomy, multiple-land use, and calf backgrounding.

The HREC annual publishes at least 5 refereed journal articles as well as extension articles and lay reports while bringing in over \$300,000 in grants and contracts. In the past year, staff have given over 60 invited presentations, and have former graduate students across the nation in multiple universities.

### AGRONOMY

- Conducted crop variety and hybrid yield trials for 21 different crops at Hettinger along with off-station small grains trials at 4 locations.
- 12 preliminary yield trials/nurseries for wheat, pulse and canola breeding programs.
- Evaluation of carinata, an oilseed mustard like canola, for adaptation to western ND for use biofuel production. This crop looks promising with yields of carinata being competitive with hybrid canola and having fewer problems with seed shatter.
- 10 agronomic studies, including seed treatments, soybean & durum planting dates, spring wheat nitrogen timing, and spring wheat seeding rate.

### WEED SCIENCE

- Evaluation of pre-emergence and post-emergence herbicides for weed control and crop tolerance for SW ND.
- Evaluation of fall-applied herbicides for weed control and crop tolerance.
- Options for post-harvest weed control.
- Management of noxious and troublesome weeds in pasture and rangelands.
- Cover crop tolerance to carryover of herbicides applied to spring wheat.
- Contributed to NDSU Weed Control Guide.
- Publish Crops Day report.

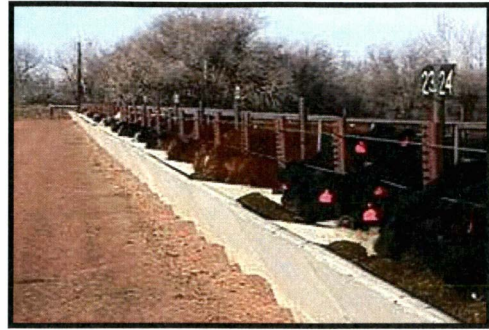
Director: Christopher Schauer  
 Email: [NDSU.Hettinger.REC@ndsu.edu](mailto:NDSU.Hettinger.REC@ndsu.edu)  
 Web address: <http://www.ag.ndsu.edu/HettingerREC/>  
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 102 Hwy 12 W  
 Hettinger, ND 58639

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# HREC Crops, Weeds, Livestock, and Range

## RANGE and LIVESTOCK SCIENCE

- Using annual forages to provide forage for grazers and resources for pollinators and a state-wide assessment of pollinator populations.
- Evaluate the ecological effects of integrating livestock herbivory and annual forages into a winter wheat cropping system.
- Patch-burn and sheep/cattle grazing on post Conservation Reserve Program land.



- Evaluated supplementation strategies during pregnancy and their effect on embryonic death loss, fetal development, and potential feedlot and reproductive performance of offspring.
- Continued research in "Value Added Animal Production"; evaluated mineral injection during receiving of freshly weaned calves.
- Evaluation of feeding and supplementation strategies that impact ram fertility.
- Conduct the Dakota Fall Performance Ram Test; a 140 day Rambouillet Certificate of Merit program, one of three Rambouillet Ram Tests in the nation.

## OUTREACH and EXTENSION

- Conduct annually the HREC Beef Day, Sheep School, Shearing School, Wool Classing School, Carcass Ultrasound School, Crops Tours, Crops Day, and Soil Health and Wildlife Workshops.
- Analyze wool samples for fiber diameter using an OFDA Fiber Analyzer
- Bi-weekly radio updates during the growing season.
- Implemented Nitrate QuikTest certification program in 41 ND County Extension Offices.
- Annual delivered over 30 presentations to 800 livestock producers.

### HREC Research Faculty

Dr. Christopher Schauer, Director & Animal Scientist  
[christopher.schauer@ndsu.edu](mailto:christopher.schauer@ndsu.edu)

Mr. John Rickertsen, Agronomist  
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Dr. Benjamin Geaumont, Wildlife and Range Scientist  
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Dr. Caleb Dalley, Research Weed Scientist  
[caleb.dalley@ndsu.edu](mailto:caleb.dalley@ndsu.edu)

Dr. Janna Kincheloe, Area Livestock Extension Specialist  
[janna.kincheloe@ndsu.edu](mailto:janna.kincheloe@ndsu.edu)

**NDSU**

**HETTINGER**  
RESEARCH EXTENSION CENTER



# NDSU Langdon Research Extension Center House Appropriations E&E Committee Report January 10, 2019

## Langdon REC 2017/19 Budget Reduction Specifics

- Approximately \$250,000 (13.5%) Needed to be Cut.
- Rent One Less Quarter (\$30,000), SF Vehicles Return (\$38,000), Less Summer Employees (\$47,000), Reduction of 1 FTE (\$100,000), Reduced Overtime (\$15,000), Travel Restriction (\$18,000).
- Overall Research Activity Reduced Approximately 15 percent.



## NDSU Langdon REC Core Research Programs

- Agronomy research program on all crops grown in our region with an emphasis on canola. **New Activity—Emerging Crops (hemp & legumes) and canola seed spacing.**
- Plant Path research program focusing on diseases of all crops in North Dakota. **New Activity—Canola Clubroot, Bee Vectoring Technologies.**
- Foundation Seed providing regional growers with superior NDSU crop varieties. **New Activity—Soybeans, Legumes, Plant Improvements.**



## NDSU Langdon REC Extension Programs

- Agronomy Area Specialist prioritizing agent training, grower questions and IPM surveys in north-east ND.
- Soil Health Area Specialist prioritizing agent training, soil health education, grower questions, soil sampling and groundwater management project.







# NDSU Langdon Research Extension Center House Appropriations E&E Committee Report January 10, 2019

## Langdon REC 2019/21 Budget Priorities

Hold Even Budget Scenario.

Support for the NDAES Initiatives as Prioritized by SBARE.

Support for the NDSU Extension Initiatives as Prioritized by SBARE.

Long Term Continuation of SBARE.

Employee Salary Enhancement and Full Medical Insurance Coverage.

## Capital Requests

Support for Capital Projects Priority as Identified by SBARE.

## Langdon Seed Cleaning Plant Update

- 1) Pit Improvements/New Leg.
- 2) Bin and Seed Cleaning Plant Equipment Upgrades.
- 3) Adding Soybeans and Other Legumes to Foundation Seed Production.
- 4) Safety Upgrades.



Old Holding Bin—Result of Failed Concrete



New Bins for New FSS Enterprise (Soybeans)

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**NDSU** NORTH DAKOTA  
STATE UNIVERSITY

# North Central Research Extension Center

5400 Highway 83 South Minot, North Dakota 58701

Dr. Shana Forster, Center Director



**AGRONOMY**  
**PULSE CROPS**  
**EXTENSION EDUCATION**  
(Soil Health, Livestock Systems, Crop Protection)  
**FOUNDATION SEED INCREASE**  
**WEED SCIENCE**  
**GRAPE PROJECT**

[www.ag.ndsu.edu/NorthCentralREC](http://www.ag.ndsu.edu/NorthCentralREC)



### Agronomy

The North Central Research Extension Center conducts the majority of its agronomic field research trials at the main research facility south of Minot. The agronomy program also utilized off-station locations to strengthen and enhance its research capabilities.

Pulse crop breeding research is conducted for the improvement of chickpea, dry pea and lentil. The primary focus is on increased yield within the quality standards of the various market classes within these three species.

### Pulse Crop Breeding



### Foundation Seed

The seed increase program is a crucial part in the strategic planning and production of foundation seed in the state. The program produces seed on approximately 1,400 acres of owned, leased and contract growers' land. Newly released seed varieties are made available through county crop/agriculture improvement associations.



### Extension Education

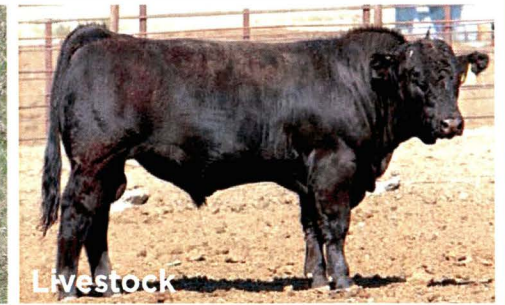
- **Soil Health:** Activities at the NCREC continued to focus on soil salinity, fertility and cover crops. County-based workshops highlighted management of saline areas and soil fertility.
- **Crop Protection:** Activities centered on crop protection focused on pest management, beneficial insects, and pollinators among area crops. During the 2017 season, Extension and research activities were focused on pest management and prevention. Research-related activities investigated control of wireworm, small grain aphids, and flea beetle, canola blackleg and chickpea variety trials
- **Livestock:** Organization and delivery of several significant educational events.



Soil Health



Crop Protection



Livestock

Weed control studies are conducted in small grains, canola, carinata, fababean, sunflower, safflower, flax, dry bean, pea, lentil, chickpea, mustard, corn, and soybean.

We are evaluating new herbicides/adjuvants or different uses of existing products in various crops.

### Weed Science



### Grape Project



The North Central Research Extension grape vineyard was started in 2012 and currently has over 5000 plants under evaluation for winter hardiness.

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Testimony to North Dakota House Appropriations Committee: HB 1020  
North Dakota State University  
North Central Research Extension Center, Minot, ND  
January 2019

Mr. Chairman and Members of the Committee: Thank you for the opportunity to address this committee. I am Shana Forster, director of the NDSU North Central Research Extension Center located in Minot, ND. This is the second time I have the pleasure of discussing the NCREC with the ND legislature, having assumed the center director role in April 2016. I have been a dedicated member of the team at the NCREC having held previous roles at the NCREC in both the Agricultural Experiment Station and NDSU Extension.

When House Bill 66 was passed in 1945, establishing what is now the NCREC, it stated "...Agricultural Station and State Seed Farm...shall make experiments with grains and grasses...and shall become a center for the increase and dissemination of purebred seeds... and further inure to the benefit of the agriculture of North Central North Dakota and the State of North Dakota." The NCREC maintains these core missions today.

Today our main research areas at the NCREC are agronomy, pulse crops, Extension education, Foundation seed increase, weed science, and the winter hardy grape program.

The people of ND own the largest seed company in the US. The NCREC Foundation Seed effort is one of several such efforts in the AES system to maintain foundation class seed for distribution to the ND agricultural industry. The 2015-2017 ND Legislature provided the NCREC \$750K in order to purchase seed conditioning equipment. We have purchased the needed seed conditioning equipment. A fundraising effort was initiated. The main building project was awarded and the new seed conditioning facility will be completed in the spring of 2019. The NCREC aims to continue to provide the best, pure genetics to ND producers.

As both Drs. Lardy and Faller previously mentioned, resources are needed to fully fund the NCREC director's salary in order to maintain current staffing levels and research projects.

Upgrading our small plot research equipment is necessary in order to maintain our relevance and relatability with ND production agriculture by utilizing similar technology. Most of the projects conducted at the NCREC are long-term. New, updated equipment is consistently necessary to perform our duties effectively. Equipment storage facilities at the RECs are needed to house the specialized equipment and these facilities are supported in the current SBARE initiatives.

I extend my thank you to this committee and the entire North Dakota Legislature for your support of the NCREC, NDAES, ND Extension, SBARE Initiatives, and NDSU. Also, thank you for your continued support of HB 1020.

Shana M. Forster, Director  
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## Program Highlights

- Foundation Seedstocks
- Cropping Systems
- Disease Research
- Variety Trials



- Pipeline Reclamation
- Saline Seep Reclamation
- Irrigated Crop Research and Production



- Hightunnel vegetable and Cut Flower Production



- Hops Research
- Extension Outreach

### NDSU Williston Research Extension Center

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## Williston Research Extension Center

DESCRIPTION *Att 11 HB 1080 4/10/19 pg. 1*

The Williston Research Extension Center (WREC), established in 1907 and relocated to the present site in 1954, is an 800-acre rain-fed farm located in northwest North Dakota near the city of Williston. In 2001, an additional 160 acres were purchased in the Nesson Valley 23 miles northeast of Williston and an irrigated research and development project was established. In 2012 an additional 1,100 acres of land were leased from the North Dakota Game and Fish Department for pure seed production and dryland research. WREC research studies are conducted on dryland and irrigated crops and crop varieties, herbicide performance, crop management research, plant diseases and control, cropping systems, soil and water conservation practices, pipeline and saline seep reclamation, and horticulture. WREC also produces and supplies foundation seed of new and popular varieties to area farmers. WREC research is intended to increase the producer's net profit, support crop diversification and encourage more intensive cropping and irrigation development. WREC has 16 full-time staff members and reaches an average of 6,000 people throughout the year by hosting events and tours, attending community events, and participating in area meetings with our collaborators.



### WILLISTON RESEARCH EXTENSION CENTER IMPACTS

- WREC established a one-of-a kind partnership with the Williams County Soil Conservation District (WCSCD) to construct a new WCSCD 60x100 ft. steel building at a cost of \$678,000 at WREC. The facility, completed in July 2017, has office space, equipment storage space, and a 20x40 ft. cooler for storing tree and nursery stock for distribution of 50,000 tree seedlings in May to early June. During the offseason, WREC will use the cooler for winter storage studies on potatoes and other vegetables.
- Dr. Audrey Kalil, our new WREC Plant Pathologist, has initiated a new plant pathology program to evaluate the efficacy of fungicides, crop rotations, tillage practices and other IPM management techniques on reducing disease and pathogen populations. One area of her focus will be the effect of different management practices on the naturally occurring beneficial organisms and the use of advanced molecular techniques to precisely quantify populations of soil-borne pathogens. Audrey was successful in obtaining grant funding for a pulse crop pest scout to serve northwest North Dakota, has assembled a new WREC plant pathology laboratory, and established collaborations with pathologists at the USDA-ARS, Montana State University, NDSU, and other REC's.



## WILLISTON RESEARCH EXTENSION CENTER IMPACTS (CONTINUED)

- Soil disturbance during the construction of pipelines, roadways, and well pads is a serious issue in western North Dakota. Within cropland, soil health and yields need to be restored during the reclamation process. During 2015, installation of a 36" water pipeline was completed at WREC. A long-term experiment with five annual crop rotations and two perennial covers in pipeline, roadway, and undisturbed (control) areas has been established. In addition to cropping sequence, ripping, manure is being tested. This study aims to provide long-term management strategies for landowners to restore productivity to disturbed cropland from water, oil, and gas development.
- Collaborating with the breeders of North Dakota State University, Montana State University, South Dakota State University, Minnesota State University, USDA-ARS, and ag companies, 50 variety trials are conducted each year to evaluate germplasms and varieties for biotic and abiotic stress tolerance and adaptation to the semi-arid dryland and irrigated conditions of the MonDak region. This year, trials included small grains (winter wheat, durum wheat, spring wheat, barley, and oat) and alternate crops (safflower, canola, flax, potatoes, carinata, sunflower, corn, field pea, chickpea, soybean, lentil, dry bean, and black gram) species. The agronomic data collected from these trials resulted into the release of the following crop varieties: North Dakota AES: Soybean (conventional) - ND Benson and ND Stutsman Soybean (Glyphosate resistant) - ND17009GT; Hard Red Spring Wheat - ND VitPro; Durum: ND Riveland and ND Grano; Minnesota AES: Hard Red Spring Wheat - Lang-MN; South Dakota AES: Hard Red Winter Wheat - Thompson.
- The effect of plant population and row spacing on physiology, water use efficiency, and yield of no-till dryland soybean was initiated.
- In 2005, WREC developed a 160-acre irrigated site and is in its twelfth year of research to identify improved irrigated cropping systems, tillage systems, and best crop varieties, and best management practices to improve water use efficiency, soil health, crop management systems, and economic and environmental sustainability. The Nesson Valley site, located 30 miles east of WREC consists of four- 40 acre fields each with overhead linear irrigation equipped with automated Variable Rate Irrigation (VRI). New studies include effects of sugarbeet spent lime on crop production and dry bean and soybean management of white mold.
- Established a saline seep reclamation research and demonstration project to reclaim saline seep area on WREC land in collaboration with the Montana Salinity Control Association and to evaluate salt-tolerance of alfalfa varieties and perennial grasses.
- The WREC Horticultural Research Program has initiated and conducted research on hops production and the use of season extending high tunnels to expand local specialty crop opportunities for vegetables and cut flowers and initiated research on haskaps.



- Our WREC Area Extension Specialist, Dr. Clair Keene, conducted trainings with northwest county extension agents to build their agronomic knowledge of crop varieties, conducted weed control studies in safflower and durum, and organized and assisted with outreach programming opportunities in the region: National Hard Red Spring Wheat Show, Pulse Days, offstation trials and tours, field day events, and MonDak Ag Research Summit.

### Case IH/ Williston Research Extension Center Lease Program

Case IH collaborates with NDSU WREC by allowing us to lease farm equipment. In 2017, WREC received 18 equipment items through this program: 4 skid steers, 4 loaders, 6 tractors, 2 combines, and 2 round balers.

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January 8, 2019

To: House Appropriations-Education and Environment Division Chairman David Monson

RE: Seed Cleaning Facility at NDSU Williston Research Extension Center

Chairman Monson,

I am Tom Wheeler, Chairman of the Joint Advisory Committee of Williston Research Extension Center and Eastern Agricultural Research Center. The seed cleaning facilities in Williston, Minot, and Carrington were all outdated.

Two sessions ago, Minot and Carrington were each appropriated \$750,000 from the North Dakota Legislature and were authorized to raise the remaining money to build new facilities.

Last session Williston Research Extension Center received authorization to begin raising funds toward a \$1.5 Million seed cleaning facility. At that time, we did not ask for funding and none was appropriated to Williston Research Extension Center

In the early planning stage \$1.5 Million was thought to be sufficient to build a new facility. With the rising costs, we feel the need to raise our campaign to a \$2.25 million goal. The Bakken Premium also adds to the final number. We are asking to raise our authorization to \$2.25 million for the seed cleaning facility.

We have begun in earnest raising money toward our upgrade to replace the cleaning facility built in 1954. Besides small grains a new facility will give us the ability to clean pulse crops and other specialty crops. The technology of an optical color sorter adds numerous capabilities.

We have a verbal assurance of more than \$300,000 contingent upon receiving a \$750,000 appropriation from the state of North Dakota. We also have another \$250,000 committed. The WREC is well on the way to our goal. If this legislature would appropriate WREC \$750,000 for the seed cleaning facility. I will not be back asking for any more money. We will complete reaching our goal ourselves.

Thank you for your consideration,



Thomas Wheeler

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Letter of Support  
House Appropriations Committee - Education and Environment Division  
January 10, 2019  
By the Williams County Board of Commissioners

Re: House Bill no. 1020

*A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.*

Mr. Chairman and members of the Committee:

Please accept this letter provided by the Williams County Board of Commissioners as an indicator of support for an appropriation of \$750,000 towards a new seed conditioning facility for the Williston Research Extension Center (WREC).

To provide the best opportunities to compete and be successful in today's agricultural market, the citizens and agricultural producers of Williams County deserve to have access to safe, modern, and efficient technology.

The WREC is currently operating the oldest seed conditioning facility at an Extension Research Center in the state of North Dakota. Construction and operation of a new facility will help to diversify and increase the varieties of seeds that can be cleaned, provide a safer work environment for employees, and increase the availability of public seed varieties.

Benefits of a new facility will be reaped far beyond the boundaries of Williams County as it will provide farmers with a more superior seed product to grow marketable crops. Since agriculture is a crucial part of Williams County's economy, it is essential that our producers are well-equipped with premium crop genetics and able to remain competitive on a global scale.

Sincerely,

A handwritten signature in black ink that reads "David Montgomery".

David Montgomery  
Chairman, Williams County Board of Commissioners

**BOARD OF COMMISSIONERS**

First District – Beau Anderson | Second District – Steve Kemp | Third District – Cory Hanson  
Fourth District – David Montgomery | Fifth District – Barry Ramber

PO Box 2047 | 206 E. Broadway | Williston, ND 58802-2047 | Phone 701.577.4500 | Fax 701.577.4570 | [www.williamsnd.com](http://www.williamsnd.com)



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**BOARD OF COUNTY COMMISSIONERS  
DIVIDE COUNTY, NORTH DAKOTA  
P.O. BOX 49 CROSBY, ND 58730**

---

January 8, 2019

Chairman David Monson  
Education and Environment Committee  
North Dakota House Appropriations Committee  
Bismarck, ND 58501

Dear Chairman Monson

The Divide County Commission is writing this letter in support of the effort and the need for a new seed cleaning facility at the Williston Research Extension Center.

The WREC is crucial to the success of farmers in all of Northwest North Dakota. The current facility dates back to 1954. It is worn out and not capable of handling the volume necessary as well as new pulse crops being grown. There are so many changes in farming with the addition of pulse crops to the farmers rotation. A new facility will better handle the many different crops now being grown along with the cereal grains.

Farming remains a major component to the North Dakota economy and the WREC provides the research and development of new seeds to help farmers in our State.

Yours truly



Divide County Commissioners

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1/10/19 pg. 4

January 8, 2019

**To whom it may concern:**

We are writing in support of a return to full funding for agricultural research in North Dakota and particularly North Dakota State University's Williston Research and Extension Center (WREC). While we fully understand the need to keep budgets lean, the ongoing, unilateral cuts to the state's agricultural research programs make little sense when they provide such **large, long-term net returns to the North Dakota economy and its citizens**. As evidence:

**Positive returns from ag research funding**

- A recent study by NDSU economists determined that \$1 invested in ag research generated as much as \$25 in return, while a third party study by the University of Minnesota showed an even larger return, \$38 for every \$1 invested in ag research.
- This also holds true at the federal level, with a Cornell University study showing a minimum return of \$10 for every tax dollar invested at that level, and, again, additional studies show even higher returns.
- Given that agriculture is the leading revenue-producing industry in North Dakota, accounting for about one-fourth of the state's economic base, it doesn't make sense to make indiscriminate cuts to the program.

**Positive returns from WREC ag research partnerships**

WREC enjoys close partnerships with two nearby, cross border ag research facilities - Montana State University's Eastern Agricultural Research Center (EARC) and our USDA Agricultural Research Service (ARS) Northern Plains Agricultural Research Laboratory, both in Sidney, MT - providing even greater returns for producers in the region. As evidence:

- Our "**MonDak Agricultural Research Triangle**" allows us to avoid duplication of research efforts and leverage expertise and equipment from all three entities for various individual as well as joint research projects.
- State researchers also point to our partnership as **an important factor in successful grant applications** for new equipment and research programs at state facilities.
- Our longstanding partnership has led to significant advances for producers in the region and continues today with a joint research effort between ARS and WREC to investigate the effect of crop rotation on *Rhizoctonia solani* AG 2-2 soil populations. WREC Plant Pathologist Audrey Kalil has also initiated similar collaborations on economically important diseases of pulse crops and Fusarium Head Blight, a critically important disease of durum, wheat and barley.

**Need for increased agricultural research funding**

- The **semiarid climates in western ND and eastern MT mean very narrow operating margins** for producers, drastically limiting opportunities to "experiment" on their own farm operations - assuming they have the expertise to do so - to identify new crops, cropping rotations, and weed,

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January 3, 2019

The Williams County Crop Improvement Association (WCCIA) greatly appreciates the work of all personnel at the Williams Research Extension Center (WREC) and strongly supports the funding of a new seed cleaning facility at the WREC:

1. The WREC provides the WCCIA with Foundation seed from the latest NDSU varieties to our farmers and producers.
2. In 1956 the WREC cleaned less than 10,000 bushels. This number has now grown to well over 40,000 bushels.
3. A new seed cleaning facility that will provide a larger handling capacity, up-to-date technology, a horizontal equipment layout, and an adequate dust ventilation system is greatly needed to replace the existing facility.
4. The existing seed cleaning facility, built in 1955, has multiple levels, some of which can only be accessed by stairs/ladders. The capacity of this facility is currently only 35 bushels/hour. The new facility, which would be a one-floor structure, would be safer for employees to work in and would have a handling capacity of approximately 200-300 bushels/hour.
5. The current facility is limited in its ability to process a diverse number of crops. The new facility would be able to meet modern needs by being able to clean pulse crops and other specialty crops that require different/gentler methods of handling.

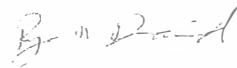
We thank you in advance for your consideration to fund a new seed cleaning facility at the WREC!

Regards,



Lucas C. Holmes

NDSU ANR Extension Agent



Ryan Davidson

VP – NDCISA

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2002 Northern Plains Drive Bismarck, ND 58504

Phone: 701-530-0734

Fax: 701-530-1826

North Dakota State Senate  
Senate Appropriations Committee

January 2<sup>nd</sup>, 2019

Honorable Chairman and members,

We (Pulse USA) are writing in support of NDSU WREC and the value a new seed cleaning plant will contribute to WREC and the private sector agricultural companies and growers that work with them. We, as a seed company, and our seed growers rely on facilities like WREC for seed multiplications and expansions to commercialize new and highly competitive varieties and they are an important link making seed accessible to North Dakota farmers. These efforts contribute to the competitiveness of North Dakota companies, growers, and farmers.

The current facility is antiquated, inefficient and labor intensive. A more efficient and better-quality facility will further WREC's endeavor to self-fund significant portions of their agricultural services. The current cleaning capacity of 35 bushels per hour is insufficient for the scale of operations WREC supports. This antiquated plant and design is also more damaging to sensitive crops like peas, lentils and other pulses.

We support and are committed to continuing to work with WREC on high pedigreed seed multiplication and the funding of a new plant would allow us to contract WREC to do even more work with our varieties. Research stations have a long history supporting innovative agriculture. NDSU WREC also helps bring the best technology to North Dakota growers and companies which increases their competitiveness and profitability. The continued updating of WREC and other NDSU research facilities is critical to advancing our industry and promoting the use of the forefront of agronomic practices and varieties.

Best Regards,

Emily Paul, Sales & Product Development Director

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1/10/19  
pg. 7



January 3, 2019

Representative David Monson  
Chairman  
House Appropriations – Education and Environment Division  
600 E. Boulevard Avenue  
Bismarck, ND 58505

RE: Support for Legislative approval to provide funds for a new seed cleaning facility at the NDSU Williston Research Extension Center.

There is a critical need for the NDSU Williston Research Extension Center to receive funding to build a new seed cleaning facility with superior horizontal handling and seed cleaning equipment including optical (color) sorters to condition and distribute pure seed of new value added small grain, pulse crop, oilseed and other specialty crop varieties to our western North Dakota producers.

The current pure seed conditioning facility at WREC was built in 1954, making it the oldest and most outdated seed cleaning facility at the Research Extension Centers and limits WREC to cleaning only a maximum of 35 bushels per hour. It also is not suitable for cleaning pulse crops and other crops that require gentle handling and horizontal seed cleaning equipment and lines.

Because of their increased land base of 2,000 acres, WREC will be able to produce an estimated 40,000 bushels of high quality pure seed of new and superior value-added crop varieties including pulse crops and other specialty crops with a new seed cleaning facility and support more value-added processing facilities in our region. This is a prime time to fund this capital improvement at WREC to support more value-added production and manufacturing in western North Dakota.

As we strive to further diversify our economy in western North Dakota, we fully support the efforts of WREC. The City of Williston STAR Fund has committed a \$250,000.00 grant towards the construction of this facility.

I thank you for your special attention and consideration to provide one-time funding for a new WREC seed cleaning facility.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn Wenko", is written over a horizontal line.

Shawn Wenko  
Executive Director  
Williston Economic Development

Att 12 HB 1020  
4/10/19 pg. 8

December 31, 2018

To: House Appropriations –Education and Environment Division Chairman David Monson

RE: Seed Cleaning Plant at NDSU Williston Research Extension Center

Greetings,

On behalf of The Joint Williston Research Extension Center and Eastern Agricultural Research Center Joint Advisory Committee: I express our Advisory Committee unanimous support in the request for the North Dakota State Legislature to appropriate \$750,000 towards a new seed cleaning plant at the NDSU Williston Research Extension Center.

1. The existing plant is limited in capabilities and totally not designed to prepare pulse crop or specialty crop seeds.
2. Cropping patterns in the region have exploded with diversity in the last 10-20 years. The recent 5 years has demonstrated a phenomenal increase of cropping diversity.
3. New and adapted varieties offer grain producers improving opportunities to enhance soil health and increased profitability. The total dollar impact needs to be estimated by professionals other than our committee.
4. Increased volume of specialty and traditional seeds will add tremendous income to the WREC. A private seed business would consider going in debt to build this profit center.
5. WREC has the oldest seed cleaning plant out of all other research extension centers and cleans approximately 40,000 bushels of seed each year (please see attachments).
6. The Carrington Research Extension Center and the North Central Research Extension Center were appropriated \$750,000 in state funds from the North Dakota State Legislature this past legislative session.

Thank you for your careful attention.

Regards,

  
Wayne Berry  
WREC-EARC Joint Advisory Committee

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1/10/19 pg. 9

January 8, 2019

North Dakota House Appropriations-Education and Environment Division

Chairman David Monson

RE: Seed Cleaning Facility at NDSU Williston Research Extension Center

Chairman Monson,

The McKenzie County Commission is in strong support of appropriating \$750,000 towards the Williston Research Extension Center's efforts in upgrading their seed cleaning facility. The current facility which was built in 1954 has served the community and state well but is in need of an upgrade. Besides small grains, a new facility will provide the ability to clean pulse crops and other specialty crops.

We understand that the extension centers at Minot and Carrington were each recently appropriated \$750,000 from the North Dakota Legislature. As you know the agriculture industry is an important part of our county's and state's economy and feel that this facility serves an important role in making sure we keep up with agricultural needs.

Thank you for your consideration,



Thomas McCabe

Chairman, McKenzie County Commission

1/02/2019

To Whom It May Concern,

My name is Cameron Wahlstrom, I am 32 years old, a 2009 NDSU graduate with a bachelor's degree in Crop and Weed Science, a Certified Crop Consultant, the McKenzie County Soybean Representative for the ND Soybean Council, President of the McKenzie County Crop Improvement Association, Director for McKenzie Electric Coop, and currently serving on the Alexander Public School Board. I am a lifetime resident of Alexander, ND, married with two children and a 4<sup>th</sup> generation farmer in McKenzie County. Farming and owning the same land that my great great grandfather homesteaded in the late 1890's. So one could say I am very invested and passionate about this area and what I do. Which leads me to why I am writing this letter.

I am very concerned and frustrated with the lack of financial support the Williston Research Extension Center has received for a new seed conditioning facility. It appears that the further away one is from Fargo and the eastern side of the state, the harder it is to get funding. Just another example of west vs. east mentality. I feel this way because when you look at the location of the Williston Research Ext. Center in relation to the crops grown around it, in its region, it is probably one of the most important extension centers for the state land grant university due to the diversity of crops grown and the quality of seed harvested. The WREC currently farms 2,000 acres of land where it produces over 40,000 bushels of foundation quality seed. However, due to the fact that the current seed cleaning facility was built in 1955 and has an existing capacity of 35-50 bushels per hour, they cannot clean all of their own seed and have to have the majority of seed cleaned by a private mobile seed cleaner. I see this as a sad display of what WREC, NDSU, and North Dakota, as an agricultural state, stands for. The WREC should be leading the state when it comes to seed cleaning facilities, not falling behind by using over half century old equipment and building facilities. If we, as an agricultural state, want the Ag producers, farmers, ranchers, and our neighbors to prosper and have the best provided to them, then we as a state need to invest back into what makes this state great, which is agriculture. What better investment than having a research center in our region, offer a state of the art cleaning facility. If this investment were to happen for WREC, they would be able to serve and provide for the whole western region of North Dakota along with eastern Montana with quality foundation seed.

Finally, I'm not sure who will be reading this letter, but I hope that they can use some common sense and put politics aside to get the Williston Research Extension Center the money for a seed conditioning facility that it and the whole western part of the state rightfully deserves. After all, since the Carrington Research Extension Center and the North Central Research Extension Center received funding during the last legislative session, I would expect there to be no hesitation to provide the funding to Williston.

Sincerely,



Cameron Wahlstrom  
President / McKenzie County Crop Improvement Association



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1/10/19 pg. 11



669 Hwy 5 • Flaxville, MT 59222

Phone 406-783-5510  
Fax 406-783-5515  
Info@cahillseeds.com

January 8, 2019

Honorable North Dakota Legislative members and staff,

This letter is in support of Williston Research Center to build a new seed cleaner for the research farm.

I am a Montanan producer from Scobey. I also own and operate Cahill Seed which is a regional retail and wholesale Seed Facility. The Eastern Montana and Western North Dakota area which we locally call MonDak is served by the research and services from both Williston and Sidney extension facilities. Each provides great service for our local producers.

One of the services is provided by Williston Research Center is Foundation Seed Stock to producers and our customers for certified seed production. For many years Williston Research Center has provided the essential link between plant breeders and North Dakota and Montana producers the seed stock to assist the MonDak producers the best genetics to compete on a global scale. This cannot be underestimated; our genetics is one of the greatest assets we have for our agricultural sector.

After the production of the genetics (the seed), the ability to clean the seed and keep its genetic integrity is paramount for the system to work properly. Part of that system is a high quality grain cleaning system. The current grain cleaning system in Williston does not meet those needs.

A letter can never truly express an opinion as well as a conversation; if any members of the committee and the staff would like to visit with me about the needs of Williston Research center, I would be glad to assist.

Jerry Bergman and Kyle Dragseth and other staff at Williston have and are great assets to our regional producers. I would suggest that providing the Staff at the Williston Research Center better tools to achieve their mission would serve our region and the great state of North Dakota.

Sincerely,

A handwritten signature in black ink, appearing to read 'Charlie Cahill'.

Charlie Cahill

Scobey, Montana

**Testimony of Paul Mathiason  
North Dakota Ag Coalition Chairman  
HB 1020**

Chairman Monson and members of the committee, my name is Paul Mathiason, and I am here today as the Chairman of the North Dakota Ag Coalition. The Ag Coalition has provided a unified voice for North Dakota agricultural interests for over 35 years. Today, we represent more than 40 statewide organizations and associations that represent specific commodities or have a direct interest in agriculture. Through the Ag Coalition, our members seek to enhance the climate for North Dakota's agricultural producers.

The Ag Coalition takes a position on a limited number of issues, brought to us by our members, that have significant impact on North Dakota's agriculture industry. The Ag Coalition supports the funding of the 2019-21 SBARE priorities for the NDSU Extension Service and the North Dakota Agricultural Experiment Station, as ag research and extension continue to be one of the top priorities for North Dakota's crop and livestock producers. Private industry provides numerous options for producers who then rely on ag research and extension to determine the value of those products and services.

We appreciate your past support and urge your continued support of research and extension as these programs provide valuable information, education, and tools for the state's producers. They have been, and will continue to be, the driving force in the future of North Dakota's agriculture industry. We encourage your support of HB 1020.

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My name is Erika Kenner and I farm and ranch with my father at Leeds. We run a diversified crop and registered Simmental cattle operation where we can raise up to 10 different crops and we have a bull sale at our ranch each year. After college at NDSU, I moved to Bozeman, MT and worked for the American Simmental Association for 5 years. In 2007, I moved home to farm, and now I also currently serve on the American Simmental Association Board of Directors.

Growing up on the farm, I was involved in 4-H and worked with our County Extension Agents at our County Achievement Days each year. Now that I'm on the farm, I've worked with them in other areas and this year we especially appreciated their help and education in identifying the invasive weed, Palmer Amaranth. We didn't find any in our fields, but it was found close, and our county agent was proactive at educating all the farmers/ranchers in our area on how to watch for it.

Our county agent has also hosted several educational producer meetings at our ranch where he was able to utilize the network of people in other areas of the Extension Service. Everyone needs a little continuing education, and some producers are not able to get away from their operations to attend conferences and seminars, so it helps when the extension service brings events close to them.

We are also fortunate to have the research stations we do in this state. There has been a lot of work done in our state with cover crops, waste management & utilization, grass management and crop by-products for feed-stuffs. Feed and seed companies do their own research, but we as producers also depend on unbiased data that comes from the research stations to help us make decisions on our farms and ranches.

Many do not realize how much information we need for genetic progress in the cattle industry. There's more to making beef for the consumer than just putting cows on pasture with a bull and selling the calves to market. We depend on data and indexes for traits such as calving ease, growth, carcass, longevity, milking ability and feed efficiency to make a better product and to be profitable/affordable for everyone.

My time on a breed association board has opened my eyes to how many different land grant universities and extension services are working with these breed associations. The ASA has a great working relationship with North Dakota State Extension and I know for a fact utilizes information from Extension Services in North Dakota. The breed associations calculate data on all the cattle in their databases and make it available to anyone. In order to make their calculations, they require unbiased data from research institutions on input costs, environmental differences, breed differences, plus much more. Ranchers like me, depend on this data to make breeding decisions each year which also affects our customers.

Through the years, the data done in our state has helped economically and environmentally. Agriculture often gets targeted for not being environmentally friendly. In a world where the population is increasing so fast, we need to keep exploring alternative ways to feed our people responsibly with less land. It is crucial we keep funding the Extension and Research Stations in our state to keep agriculture moving forward.

## **LEGISLATIVE BUDGET HEARING**

### SBARE IN SUPPORT OF HB 1020

January 10, 2019

To Chairman Monson and Committee Members:

Good morning, I am Dave Miller a Farmer/Businessman from Donnybrook, ND. The farming of small grains and the operation of a seed conditioning business has been my way of life. In both of these operations I have used the research data from the NDSU research centers from around the state to be successful. When I built my first seed conditioning plant the research centers had the data and engineering information relative to seed handling. This information saved me hours of testing. The seed plant allowed me to give added value to my crops as well as provide a seed conditioning service to my neighbors. In 1983 I built a second seed conditioning plant and started raising certified seed. This was an opportunity that could add value to crops grown through the NDSU certified seed program. I took advantage of this opportunity and started raising the NDSU varieties of Durum, Wheat and Barley. All of the breeding was done by the NDSU research centers and they displayed their new varieties in field trials along with the varieties from other breeding companies providing an unbiased comparison. The research scientists shared many of the seeding, fertilizing, weed control and disease control methods that were used which was a great education for us. At the years end they would compile variety comparisons on

yield, test weight, straw strength, protein and many other tests. These trials were grown at several locations throughout the state, giving producers a good idea which variety was best suited their area. As time went on a son joined my operation and our farm now is around three thousand acres and we run four certified seed plants. A large portion of our seed conditioning business is cleaning Registered and Certified seed which all has to be inspected by the state seed department, conditioned and inspected for purity and germination. Our farming operation is constantly using the NDSU research for new seed varieties, fertilization techniques, use of herbicides and fungicides. There is little room for error in today's agriculture, the research centers are the backbone of today's farmers. Keep them strong.

Thank you Dave Miller

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Pg 1

**Testimony of Blake Inman  
USDGA President  
In Support of HB 1020**

Chairman Monson and members of the House Appropriations Education and Environment Division:

My name is Blake Inman, and I am a farmer from Berthold and the owner of a seed company that conditions and sells certified seed. I am here today as president of the U.S. Durum Growers Association in support of HB 1020 as we recognize the significant importance of ag research and extension to the future of agriculture in North Dakota.

Ag research and extension is an essential tool for the state's producers, and there is proven a high rate of return to the state's economy for money invested in ag research and breeding programs. Restoring the funding for ongoing research is essential as quality breeding programs, such as those that have been established at NDSU, take decades to establish and, therefore, can't just be turned on and off. North Dakota produces 60 percent of the nation's durum, and NDSU's durum breeding program is essential as no significant other public or private breeding programs exist. The two most recent releases from the breeding program are specifically bred for low Cadmium uptake to help us better compete against Canada in the world export market. Research, especially for scab management and resistance and quality management in durum, is also of utmost importance.

USDGA also supports the one-time funding for a new seed cleaning facility at the Williston Research Extension Center, as these facilities are extremely important for producers statewide. They provide the essential link between the great new varieties from our breeding programs to seed producers such as myself so that we can get them into the hands of producers. They are also an income generator for the research centers through the sale of foundation and registered seed.

USDGA also supports the capital improvement request for funding to replace Waldron Hall. Waldron Hall is well over 50 years old and can no longer provide space or safety that our researchers need to carryout the research that is so vitally important to the producers in our state.

We understand past and current budget situations. However, agriculture is and will continue to be the foundation of our state's economy. Even in times of low commodity prices, our families will continue to be here buying groceries, patronizing local businesses and contributing to the state's economy.

We appreciate your past support and urge your continued support of ag research and extension.



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1/10/19 Pg. 1

Contact:  
**Kayla Pulvermacher, Lobbyist**  
[kpulvermacher@ndfu.org](mailto:kpulvermacher@ndfu.org) | 701.952.0104  
**Mary Jensen, Lobbyist**  
[mjensen@ndfu.org](mailto:mjensen@ndfu.org) | 701.952.0107

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Testimony of  
Kayla Pulvermacher  
North Dakota Farmers Union  
Before the  
House Appropriations' Education & Environment Session On HB 1020  
January 10, 2019

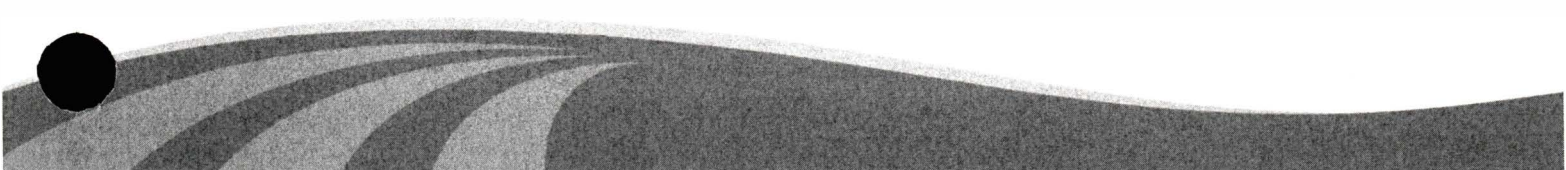
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My name is Kayla Pulvermacher and I'm here representing the members of North Dakota Farmers Union. I'm here to support funding for North Dakota State's research priorities along with with NDSU's Main Research Center and branch research centers.

Research is vital to family farmers. The agricultural industry is always evolving, and public research help North Dakota's producers diversify to spread their risk, find new crops to increase their profitability, and use technology that can help decrease their operational expenses. Most importantly, these types of research result in quality, low cost food for the nation.

The State Board of Agricultural Research and Extension (SBARE), the budget and policy making body for the North Dakota Agricultural Experiment Station and for Extension, spends a substantial amount of time gathering data, asking for producer feedback, and providing advisement on budgets. We support their worth and their prioritized budget request for the biennium.

Thank you for your time. I can stand for any questions.



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**LEGISLATIVE REPORT: NDSU AGRONOMY SEED FARM**  
**HOUSE APPROPRIATIONS COMMITTEE-EDUCATION AND ENVIRONMENT DIVISION**  
**Testimony by Brian Otteson, Director**  
**Bill No. 1020; Budget No. 649**  
**January 10<sup>th</sup>, 2019**

- **MISSION**

- To provide an adequate supply of Foundation Seed to the seed producers of North Dakota
- Provide support to the NDSU Main Station scientists
- Support research and outreach efforts that focus on the evaluation and development of new crop varieties

- **FINANCES**

- Completely self-supportive through seed sales and crop revenues
- No general fund money is used

- **PERSONNEL**

- Three FTE's

- **LAND USE**

- Approximately 1300 acres of seed production and research land maintained by the seed farm
- Provides assistance to NDSU research projects at Casselton, Prosper and Fargo

- **COOPERATIVE EFFORTS**

- NDSU Foundation Seedstocks Project
- NDSU Plant Sciences Department
- ND State Seed Department
- ND Crop Improvement & Seed Association

- **SEED PRODUCTION**

- Wheat, barley, oat and soybean varieties
- Typically grow between 25-35 varieties per year
- Maintain inventory of an additional 15 varieties from previous years
- Directly involved with the initial increase of new public varieties

- **2019-21 BUDGET**

- Continue operating as in the past within our appropriated budget
- Replace aging equipment as needed



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Legislative Testimony-Agronomy Seed Farm

Good morning, Chairman Monson, members of the committee. My name is Brian Otteson, I am the Director of the Agronomy Seed Farm at Casselton ND. As many of you know, the Agronomy Seed Farm is part of the ND Ag Experiment Station network at NDSU. The seed farm began operating in 1950 after a fund drive was set up by the Crop Improvement Association to start a seed farm for the benefit of the seed producers and farmers in ND.

The Agronomy Seed Farm produces Foundation grade seed of public varieties of winter wheat, spring wheat, barley, oat and soybean. We typically grow between 25-35 varieties per year, but also carry over seed of an additional 15 or more varieties. Annual seed sales average approximately 32,000 bushels per year. Our land base includes approximately 1300 acres spread out between three locations, which are Casselton, Prosper and Fargo. This past year, we grew 34 varieties for seed, including 12 wheat, 9 barley, 5 oat, and 8 soybean varieties. Many of these were small seed increases of experimental lines that could possibly be released as new varieties.

Although our primary mission is to produce an adequate supply of high-quality Foundation grade seed to the seedsmen of ND, we have other duties as well. Due to the close proximity of the Agronomy Seed Farm to the NDSU main campus, we provide support the main station scientists at NDSU who carry out Ag Research on numerous crops that are grown in the state. We share much of the same land with these research projects, especially the crop breeding projects since we are reliant on them to release new varieties that can be grown in the state by our farmers. The Agronomy Seed Farm supports research and outreach efforts that focus on the evaluation and development of new crop varieties. The seed farm is directly involved with the initial increase of new public varieties of wheat, barley, oat and soybeans. We work closely with the ND State Seed Department, NDSU Foundation Seedstocks, Plant Sciences and the ND Crop Improvement and Seed Association on the release of these new varieties in order to get these new varieties out to producers at the county crop improvement level.

The Agronomy Seed Farm has three FTE's. This number has been constant for many years, probably since nearly the beginning of the seed farm. Our budget remains mostly unchanged with no major changes expected in the near future. Any increases usually come from pay increases or health insurance premium increases. We continue to operate well within our appropriations. Beyond our normal operating expenses each year, we continue to replace aging farm equipment along with seed cleaning equipment as our budget allows. We currently have the original stationary seed plant which was built in 1957. Also, we were able to utilize a portable seed cleaning plant that was built in 1996. We have typically been sharing this with the CREC. However, with Carrington recently completing their new seed cleaning facilities, we were able to keep the portable seed plant all fall which helped us to get all our larger seed lots cleaned in a timely manner.

We have been fortunate to have some good crops lately, so our income has been relatively consistent. This has allowed the seed farm to remain on good financial ground and I hopefully this will not change. We will continue to operate in a responsible manner within our appropriations.

Again, I am not asking for any general fund appropriations, just your support in approving our budget allowing us to continue operating as we have in the past.

That is all I have, thank you for your time and I'd be happy to answer any questions you may have?

Chairman Monson, committee members:

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My name is Mark Birdsall. I am a farmer in the Ward and Mountrail County areas. I am also Vice Chair for (SBARE) State Board of Agriculture Research and Education.

As a producer we have a tremendous amount of information available to use everyday. Many different companies tout their research results on a host of different agronomy products, seed varieties, seed treatments, crop protection, and biologicals. Some are great products and offer great returns on investments. Some do not. We depend on research and trial work at NDSU to guide us through the decision making with independent unbiased information to help make sure our return on our investment is the best it can be. There really isn't anyone else out there that can do that for producers.

North Dakota has an environment that is conducive to many different crops. Some are major crops, but many are considered minor crops. This helps with diversity and gives producers crop choices to help with profitability potential, especially when major crop prices are struggling. This has also created an opportunity for smaller local processing facilities to show up in North Dakota to process and package these crops. This has been great for our main streets and our state. In order for this to happen, producers have needed and have utilized public breeding programs at NDSU to develop varieties that work in North Dakota. These minor crops aren't big enough for large private breeding companies to ever consider. We then rely on NDSU agronomic research to give the producers production information on new crops that allow them to have the confidence to produce a new or minor crop.

In closing, I hope to leave you with an understanding of the importance the #1 industry in our state puts on ag research and education. The return on investment in agricultural research has been well documented and proven. Ag dollars for the most part stay in North Dakota and are spent on main street. I am a crop farmer and my comments are related to crop production. If I raised livestock, the importance would be the same. We as crop and livestock producers don't have a substitute for the independent information we depend on from NDSU. I cannot stress enough its importance. Thank You! Mark Birdsall

**Written Testimony of Chad Anderson**  
**NDCISA Executive Director**  
**in Support of HB 1020**

1-10-2019

Chairman Monson and committee members:

My name is Chad Anderson. I serve as the Executive Director for the North Dakota Crop Improvement and Seed Association (NDCISA). Our organization represents the interests of seed producers from across North Dakota.

As a representative of NDCISA I am writing this letter in support of HB 1020. Our organization recognizes the significant impacts that NDSU Agricultural Research and Extension has not only for our seed producers in the state, but for all producers in North Dakota. They provide new crop varieties, conduct cutting edge research on a host of topics including invasive weed management, plant diseases, and insects affecting producers crops across the state to name a few. They also provide an excellent mechanism for disseminating this work, and sharing research results with producers in the state through the extension education system. All of their work is vitally important to the producers of North Dakota.

NDCISA also supports the one-time funding for a new seed cleaning facility at the Williston Research Extension Center (WREC). The work that the WREC does in conditioning seed is very important. This new seed plant will provide the essential link between the plant breeders on campus who are releasing new varieties, and the producers of North Dakota who need these varieties to be profitable. The WREC has begun a capitol campaign for construction of this seed plant and our organization has pledged financial support to help with its completion. It is also important to note that this seed plant is an income generator for the WREC through the sale of foundation seed. Funds generated from seed sales help offset center operating costs and also help fund other research efforts at WREC.

The NDCISA also supports funding of a new building to replace to Waldron Hall. Waldron Hall has served for well over 50 years as the home for plant breeders, weed scientists, and diagnostic technicians to do their research work on a daily basis. This building is old and cannot provide the necessary space for the researchers to safely do their work that is vitally important to the producers on our state.

NDCISA understands both the past and current budget issues that our state is facing. But we also know that the agriculture industry is the foundation of our state's economy. We as citizens of North Dakota all benefit if agriculture is successful in our state. And that begins with ag research.

NDCISA appreciates your past support of ag research and extension, and encourages your continued support of HB 1020 in this 2019 legislative session.

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Chairman Monson and Members of the House Appropriations-Education and Environment Division Committee,

I am Jerry Bergman, Director of the NDSU Williston Research Extension Center. I support the SBARE Recommendations for the North Dakota Ag Experiment Station (NDAES) and NDSU Extension Budgets and SBARE's priority capital improvement one-time funding request of \$750,000 for the seed cleaning facilities at the Williston Research Extension Center.

Our current seed cleaning facility built in 1954 is antiquated and outdated with low seed cleaning capacity and not designed to condition pulse crops and other crops requiring gentle handling and conditioning. Our land base and yield potential for pure seed production was dramatically increased in 2012 through a land lease with North Dakota Game and Fish Department of 1,184 acres of bottom land rich in organic matter and having high water holding capacity.

A new seed cleaning facility with innovative optical sorting technology will not only improve our seed cleaning efficiency but allow us to handle and condition pulse crops and other specialty crop varieties of high economic importance to western North Dakota.

Dr. Audrey Kalil, our new WREC Plant Pathologist, initiated a new plant pathology program to evaluate the efficacy of fungicides, crop rotations, tillage practices and other IPM management techniques on reducing disease and pathogen populations. One area of her focus is the effect of different management practices on the naturally occurring beneficial organisms and the use of advanced molecular techniques to precisely quantify populations of soil-borne pathogens.

Audrey has been successful in obtaining grant funding for a pulse crop pest scout to serve northwest North Dakota, has assembled a new WREC plant pathology laboratory, and established collaborations with pathologists at the USDA-ARS, Montana State University, NDSU, and other REC's.

The Nesson Valley Irrigation Research Program continues to identify best soil and crop management options to enhance irrigated crop production, improve water use efficiencies, soil health, water quality, and best integrated pest management practices and cropping systems to manage crop diseases.

The WREC Horticultural Research Program has initiated research on hops production and in the use of season extending high tunnels to expand local specialty crop opportunities for vegetables and cut flowers.

Other new projects include (1) a long-term pipeline reclamation project on WREC land to assess the economic input of the disturbed soils on crop performance and to demonstrate best reclamation treatments to restore crop yields and soil health in the disturbed soils and (2) a saline seep reclamation project in collaboration with the Montana Salinity Control Association to identify the recharge area and utilize salt tolerant grass mixes and alfalfa to reclaim the saline seep area.

WREC also established a one of a kind cooperative partnership with the Williams County Soil Conservation District (WCSCD) to construct a 60 x 100 cold storage/ equipment building at WREC for storing and distributing tree and nursery stock for spring plantings completed (in July 2017). WREC has

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been offered the opportunity to use the 20 x 40 ft. cooler for vegetable storage studies during the off season months.

Our WREC Extension Specialist, Dr. Clair Keene, conducted trainings with northwest county extension agents to build their agronomic knowledge of crop varieties and organized and assisted with outreach programming opportunities in the region: National Hard Red Spring Wheat Show, Pulse Day, offstation trials and tours, and field day events.

I thank you for your long term funding for the Ag Experiment Station, the Extension Service and the Research Extension Centers and your consideration of SBARE Requests.

Kind Regards,  
Jerald Bergman  
WREC Director

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January 10<sup>th</sup>, 2019

Testimony

Mr. Chairman and Members of the Committee:

For the record, my name is Keith Peltier. I am the General Manager of Proseed Inc. and an Ag Coalition appointee to the State Board of Agricultural Research and Education (SBARE). I currently serve as the Chairman of SBARE. The North Dakota Agricultural Experiment Station and NDSU Extension are critical to enhancing the Agricultural industries in the state and improving the lives of all North Dakotans. Thanks for the opportunity to testify to this committee.

I spoke to you earlier about The North Dakota Agricultural Experiment Station. I stand before you now to talk about NDSU Extension. The roles and responsibilities for SBARE are the same for NDSU Extension as they are for research.

Let me share with you an example that exemplifies the bang for your buck that you get when NDSU Extension delivers the message of Ag Research. In the early 90's there were 6.5 million acres of summer fallow in North Dakota most of it in the western 1/3 of the state. Most of it coupled with wheat for a wheat/summer fallow monoculture rotation. Keith Brown an extension agent from NW ND and Dick Roland a farmer from the same area decided to do some studies on replacing summer fallow with pulses. That research was picked up by Blaine Schatz at the Carrington Research Extension Center and Kent McKay at the North Central Research Extension Center and expanded to include no till applications, sunflowers, canola, corn, soybean, minor oil seeds, and barley. They found that they could produce a vibrant, diverse ecosystem by rotating on other crops and systems on the summer fallow. Extension got involved and the transformation information was spread. By the late 90's there were less than 300,000 acres of summer fallow in North Dakota. If you use a conservative number of \$200 dollars an acre that is a staggering sum of money that has been added to the North Dakota Economy. Two hundred times six million is over **1 BILLION dollars**. If you take that times 20 that is over **TWENTY BILLION** over the last twenty years. That is only one example of the money that Ag Research has plowed back into the economy of ND.

If you can use transformational information to influence just a \$10/ acre

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improvement that would me about **\$200 Million** a year for the crop acres in ND and about **\$400 million** a year for all the agriculture acres in ND.

About 15,000 farmers attended Farm Bill Education meetings in 2014. Ninety percent of those respondents use the Extension developed farm bill decision aid tool using it to make their decisions with FSA. Farm Bill benefits that flowed through to North Dakota farmers in 2018 totaled over **1.1 BILLION dollars.**

About 3000 cyst nematode samples were given out to farmers by extension to test for cyst in their soils. The value when planting a variety that is resistant to cyst nematode is about a 40% yield increase.

4-H part of extension can be viewed as the feeder system for agriculture, much like successful sports teams it is imperative to have a good feeder system to have long term success. A 4-H participant is twice as likely to be civically active. I bet if you asked the people here willing to testify if they had participated in 4-H it would be about all of them.

Also, 4-Hers are four times likely to give back to their communities making it a great investment as they give more than they get.

**One out of every 4 people work in Agriculture and are affected by this research. Agriculture is in every county in ND.**

Thanks again for your past and future support.

Sincerely,

Keith Peltier  
SBARE Chair

EXT Testimony

Good afternoon members of the House Education and Environment Division. Thank you for your support of our budgets during what was a very difficult session in 2017. As I mentioned this morning, my name is Greg Lardy and I am a native of Sentinel Butte, ND where I grew up on a ranch and small grain operation. I have been at NDSU since 1997, first serving as the beef cattle extension specialist and then as department head in Animal Sciences.

Since 2015, I have served in a part time role as the Associate Vice President for Ag Affairs. In July, I ~~was appointed to~~ <sup>took on</sup> the role of interim director, NDSU Extension. In August, when Dr. Grafton was named interim Provost, I ~~was appointed to an~~ <sup>stepped into an</sup> additional role as Acting Director of the ND Agricultural Experiment Station.

This afternoon it is my pleasure to appear before you as the interim director of NDSU Extension. As you know, NDSU Extension has a local presence in each of the 53 counties in North Dakota through our partnerships with county governments. <sup>We couple this with a team of specialist, both on and off campus that help us deliver the high quality</sup> In late 2016, the State Board of Agricultural Research and Education began <sup>transformational education</sup> the work of initiating a comprehensive review of extension. The 65<sup>th</sup> Legislative Assembly concurred and formally asked for the review as part of our budget bill. The review work was completed in 2018 and a final report submitted to the budget section in March of that year. Over 30 different recommendations were included for Extension, many of the recommendation are either completed or in the process of being completed.

NDSU Extension reached every corner of the state with transformational education programs. Our network of local county offices and specialists at the RECs and NDSU develop programs that help people make decisions which are informed by science.

As part of our reporting requirements from SB2020 we are required to report one time funding from the 65<sup>th</sup> Legislative Assembly. In that session we received \$15,000 to support the junior master gardener program. Those funds have been allocated and programs have been conducted.



We received a letter from Allen Knudson, Legislative Budget Analyst and asking for our testimony to address certain items. These items are found on pages 71-88. Some of these topics will be covered in the testimony that follows. As we proceed, feel free to ask for any clarifications or detail you may need.

Mission Statement:

Empower North Dakotans to improve their lives and communities through science-based education

NDSU Extension believes:

- In lifelong learning through transformational education
- That all people belong and deserve respect
- In stakeholder input to guide program development
- In science-based, locally relevant information
- In the value of partners and collaboration

**As Chairman Peltier mentioned, SBARE has listened carefully to the needs of agriculture and these needs can be found on pages 19-21 of the budget book. I will briefly touch on each of these initiatives.**

**The top ranked initiative is 'Web and Digital Delivery'. This initiative is included in the Governor's Executive Budget recommendations. The SBARE review of NDSU Extension recommended that Extension optimize the use of technology and enhance the effectiveness and efficiency of delivery methods. Each of you likely has a smart phone or tablet device. More and more people are accessing information and decision making tools on these devices. This initiative would improve the accessibility of NDSU Extension materials on these devices and provide funds for our specialists and agents to continue to develop phone and tablet based applications that can be used anywhere. The request for this initiative is \$345,000.**

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**The second ranked initiative is Extension Operational Support. The SBARE review of Extension indicated strong support for the local Extension presence that citizens have come to expect from their local county offices. The local agents are supported through a network of specialists who are located at our REC's and in departments on campus in Fargo. This initiative would provide funds to enhance our partnerships with county-based programming and it would also provide additional operating support to enhance program delivery by our specialists. The total request for this initiative is \$870,000.**

I would also be remiss if I failed to mention the importance of a compensation package for our NDSU Extension employees. We believe that a compensation package will allow us to continue to retain and recruit the caliber of extension specialists, agents, and other personnel that the citizens of North Dakota have come to expect from our agency. We ask for your consideration of a compensation package for our employees as you consider this budget.

NDSU Extension operates in three program areas designed to serve the needs of our citizenry across the state. These program areas include:

- Agriculture and Natural Resources
- Family and Community Wellness
- 4-H Youth Development

Here are a few program highlights which demonstrate the impacts of NDSU Extension:

- Nearly 7,000 people have downloaded the NDSU Extension Pest Management App since it was developed. The app combines the Plant Disease Management, Insect Control, and Weed Control Guides into one handy digital format.
- During the 2017 drought, NDSU Extension agents and specialists conducted forage testing and follow consultation services which prevented 16,000 cattle from being exposed to toxic forages during the drought.

Keith X Extension specialists developed a farm bill decision tool which allowed farmers to make better informed decisions on how to enroll in

specific FSA programs. Over 15,000 farmers attended these educational meetings.

- NDSU Extension Food and Nutrition programs reached over 154,000 people in 2017. These programs focus on education which encourages people to eat healthier and reduce the risk of obesity and other diet related health issues such as diabetes. Diabetes is estimated to cost ND over \$700 million annually.
- Lead Local programming has helped over 300 people feel more confident in their ability to serve on local councils, boards, and committees. This translates into more effective local governments and improved decision making at the local level.
- ND 4-H programs impact over 6,400 youth across the state. This afternoon you will hear from one of our 4-H ambassadors from Adams County. Enrollment in 4H has grown 19% over the past five years. Over 1,600 youth participated in a 4-H camping experience this past year.

Keith

- Compared with their peers, 4-H youth are
  - Twice as likely to participate in STEM activities
  - Twice as likely to be civically active
  - Twice as likely to make healthy choices
  - Four times more likely to give back to their communities

We also have a number of individuals who wish to testify on behalf of our NDSU Extension. At this point I will conclude my testimony and answer any questions you may have.

Thank you for your questions and consideration of our request. At this point ~~Kayla Pulvermacher from North Dakota Farmers Union~~ will provide testimony.

*some of these individuals represent our partner organizations including county government and the state soil conservation committee*  
*Donnell Preskey Hushka with the ND Assoc. of Counties*

soil conservation committee

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Testimony Prepared for the  
**House Appropriations**  
January 10, 2019  
By: Donnell Preskey, NDACo



**RE: HB 1020 Extension Service Funding**

Good Afternoon, Chairman Monson and Committee members. I'm Donnell Preskey with the North Dakota Association of Counties. We are here today to stand in support of House Bill 1020 and the funding of NDSU Extension Services.

The restoration of funding for NDSU County Extension services is a top priority for North Dakota Counties. Both the North Dakota Association of Counties and the North Dakota County Commissioners Association (NDCCA) have passed resolutions in support of the restoration of funding.

Here's some background on the state-county funding model.

The NDCCA board worked with Extension in 1998 to establish a uniform state/county funding split. The "base policy" was reviewed and updated in 2004 and in 2011. Up until last year, the counties paid 50% of professional salaries, and 100% of operating and support staff with the Extension budget supporting 50% of professional salaries and 100% of professional staff benefits.

Early in 2018, Extension met with a group of commissioners looking for options on how to best proceed given the state budget reduction. Recognizing the urgency, commissioners made a commitment to step up but also acknowledged this adjustment would be short-term. In March, the NDCCA Board of Directors voted to revise the extension base funding policy for calendar year 2019 only.

	Cost Share	Cost Share
	Prior to 2017	2019 - Calendar Yr
County	50% Extension Agent Salary 100% Office & Support Staff Expenses	40% Extension Salary+Benefits Combined 100% Office & Support Staff Expenses
State	50% Extension Agent Salary 100% Fringe Benefits	60% Extension Salary+Benefits Combined

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Mr. Chairman, it is important to note that the state budget reduction shifted approximately \$420,000 in Extension support to county property taxes by putting 40% of professional salaries and benefits on the county side of the cost share and leaving counties with 100% of the operating and support staff.

Prior to this temporary funding shift in funding, \$5.5 million in dedicated property tax levies as well as significant county general funds in support of indirect costs were used to fund the county portion of Extension.

Every year NDACo and NDCCA Presidents along with staff take a listen tour to a dozen counties. The funding of extension was a top concern at every county we visited. We heard about the important public service extension provides and also how counties were forced to make cuts to extension due to the pressure of this funding shift on top of their own tight budget constraints.

It is essential the state-county partnership in funding be returned to a more equitable balance to reduce the impact to our state's property taxpayers and preserve quality services in every county in the future.

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Testimony for:  
House Appropriations  
January 10, 2019  
By: Charlie Adams, Bottineau County Commissioner

RE: HB 1020 Extension Service Funding

As a Bottineau County Commissioner, I am eager to provide this testimony in support of funding for the NDSU Extension service. The temporary funding that was put in place last year forced us to choose not to fund the family and community wellness agent. NDSU Extension was not be able to fund the position and we were left in a situation where we needed to leave the position open because our county couldn't afford to fund it 100%. This left a gap in service for our county and put more on the shoulders of our Ag agent, Sara Clemens.

A fully staffed Extension program for Counties offers the maximum service package to the people. 4-H is delivered by extension and the county's participation has been a wonderful thing. Keeping young people educated through programs like 4-H/NDSU Extension is crucial in investing in our future. Other benefits of the Extension program for our County's citizens are their role in new research, chemical spray drift mitigation, knowledge on farm program choices, expertise on nutrition and several other points that support the well-being of the public.

In addition to my County Commissioner duties, I am also the manager of an Ag retail facility in Mohall. I know that our customers rely on the NDSU Extension's agricultural research. The competition between many seed and chemical companies is intense and NDSU Extension's unbiased research is a valuable tool for farmers and ranchers.

Charlie Adams  
Commissioner, Bottineau County

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**Bruce Strinden-Morton County Commissioner**

**Testimony to House Appropriations-Education & Environment Division**

**Regarding NDSU Extension Service**

**Thursday, January 10, 2019**

Mr. Chairman and members of the committee, my name is Bruce Strinden. I am a Morton County Commissioner and hold the Extension portfolio for Morton County. I also serve on the Board of Directors of the North Dakota County Commissioners Association.

In late 2017 and early 2018, the State Board of Agricultural Research and Education solicited citizen input on legislative priorities for this 66<sup>th</sup> legislative session. The board received a significant amount of testimony emphasizing the importance of Extension to North Dakota citizens and our agricultural sector economy. The great value of the local presence of Extension services was stressed by communities throughout the state. The value of these Extension services is also stressed by our county commissions statewide.

Because NDSU Extension funding was reduced in the 2017-2019 biennium, Extension and the North Dakota County Commissioner's Association collaborated on a new cost share agreement to fund Extension Agents. Under that new agreement, counties agreed to increase their support by approximately \$820,000 on a statewide basis for the biennium. This is an additional expense that counties assumed at a time when counties themselves were seeing tighter budgets. It's important to point out it is an additional property tax burden pushed to the citizens due to state budget cuts. The willingness of county commissions to agree to the temporary formula change is a demonstration of how strongly counties support Extension and our agricultural sector.

The many services and collaborations of Extension are critical to the future of agriculture in North Dakota. The counties feel that because of the vital importance of agriculture to our state, the legislature should adjust the funding of Extension Agents upward to again reflect a more equal financial partnership with counties.

Thank You.

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### Testimony in support of HB1020

This written testimony is provided by Daryl Dukart, rancher and county commissioner in Dunn County

Empower North Dakotans to improve their lives and communities through science-based education. This is the mission statement of NDSU Extension.

I hope in this supportive testimony I can provide to you the reason the NDSU Extension Service and NDSU Research Center are so important to North Dakota and especially to rural North Dakota. From my experiences in growing up in an era of highly used NDSU extension and research to living the life of a rancher raising his family in western North Dakota. NDSU has provided us with the best agriculture education that we can apply for greater sustainability to our operations.

Agriculture is the corner stone of our state's revenue and yes as our Governor said Energy and Agriculture must co-exist together and they do as both are the main drivers of our economical basis for Dunn County and across most of our state.

NDSU Extension and research is so vital to so many of us in North Dakota as users of the extension educational and research programs. Their programs provide benefits to agriculture and to the lives of many North Dakotans today.

NDSU Extension reached 1,087,442 people face-to-face during direct contacts in 2017 through extension education programs. Two hundred eighty-nine thousand people participated in 4-H youth programs, 150,000 plus people took part in Nutrition, Food Safety and Health programs, 47,000 plus participated in Human Development and Family Science and another 112,799 participated in livestock management programs and the list goes on as their many focused programs reached out and served over 1 million state residents.

NDSU Extension extends education to North Dakota residents of all ages and walks of life.

From my own personal experience working with NDSU extension during my 8 years as a 4-H member, serving as a 4-H club leader for 25 years and participating in many of the educational programs they have to offer over a time frame of now totally more than fifty years. Annually I attend at least three or more NDSU



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educational programs organized by our extension agent in our community or region. Every time I attend, I am amazed about the level of education we in agriculture have available to us. A few years ago, my family was lucky enough to celebrate the 100 years of leadership service award to 4-H in North Dakota. Our father and mother through guidance encouraged their 3 daughters and 3 sons to take this tradition and care it on to the next generation. Today all six of us siblings are retired from the 4-H leadership role, now the third and fourth generation has stepped up and fulfilled the role to keep tradition strong! Thanks to the guiding leadership of NDSU Extension these traditions have not been lost.

Providing educational assistance in nutrition and health wellness to North Dakota families has had a direct impact to some Dunn County families and individuals at risk because of food insecurities, diabetes, obesity, eye disease and other health issues.

These programs have improved the nutrition of families, increase wise choices of money spent on food, increased physical activity, and improved safe food-handling practices. Every dollar invested in nutritional education in North Dakota helps to reduce limited-resource families' health care costs by \$8.82. This is a big number when I as a commissioner think of it in social service cost to the state and our local government.

I ask you to continue to strongly fund the NDSU extension and research program for the next two years and help to continue to cultivate extension and research into the future. Restoration of financing to this program is so important to our local counties and states economy. Agriculture is one of the main drivers of revenue in our state and the future of our state will remain dependent on extension and research from the past, during the present and well into the future. Tools available through the NDSU extension service help our agriculture producers stay successful in providing the world with the highest quality and quantity of abundant consumable foods.

Thanks to NDSU Extension and Research employees past and present for your work with producers and production in agriculture.

Because of the efforts of our state leadership, NDSU and our producers, the world's supply of safe and plentiful food for the future is much brighter.

Thank you!



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**Testimony of  
Kayla Pulvermacher  
North Dakota Farmers Union  
Before the  
House Appropriations' Education & Environment Session On HB 1020  
January 10, 2019**

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My name is Kayla Pulvermacher and I'm here representing the members of North Dakota Farmers Union. I'm here to support funding for North Dakota State University extension priorities.

Extension is vital to family farmers. Not only do they provide information on crop and livestock management, they provide lifelong learning opportunities in both rural and urban parts of North Dakota. NDFU has currently been working with Extension on getting Mental Health information and training for North Dakota farmers. With Extension's expertise on this issue, the organization is hopeful to make progress on this timely issue.

The State Board of Agricultural Research and Extension (SBARE), the budget and policy making body for the North Dakota Agricultural Experiment Station and for Extension, spends a substantial amount of time gathering data, asking for producer feedback, and providing advisement on budgets. We support their work and their prioritized budget request for the biennium.

Thank you for your time. I can stand for any questions.



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You Raise. We Represent. [www.ndgga.com](http://www.ndgga.com)

## **North Dakota Grain Growers Association Testimony on HB 1020 House Appropriations - Education and Environment Division**

Chairman Monson, members of the House Appropriations Education and Environment Division, for the record my name is Dennis Haugen; I am a diversified family farmer from Hannaford, North Dakota and 1<sup>st</sup> Vice President of the North Dakota Grain Growers Association (NDGGA). I appear before you today on behalf of the North Dakota Grain Growers Association in support of HB 1020.

Some background; for over 50 years the North Dakota Grain Growers Association has, through its contracts with the North Dakota Wheat Commission and the North Dakota Barley Council, represented North Dakota wheat and barley farmers on domestic policy issues on the state and federal levels. Ag research and extension is the lifeblood of North Dakota agriculture; NDGGA is proud to support the budget that is presented to you today.

The State Board of Ag Research and Education does an excellent job of prioritizing the research and extension needs in North Dakota agriculture. As you are all well aware, for every \$1.00 expended in agricultural research \$40 is returned to the state. That return on investment reaps huge benefits for the North Dakota economy. Prioritizing those dollars is a formidable task; as in every budget there are unlimited wants but limited means to meet the needs.

Additionally, you can have all the research in the world but if you don't have the capacity to share that information what is the use? To disseminate the information, you need to have a strong delivery system that meets the needs of today's agriculture. The NDSU Extension system does an excellent job of making sure the research and extension information that is necessary for the success of North Dakota agriculture is provided to its constituency, the agriculture industry of the state.

*NDGGA provides a voice for wheat and barley producers on domestic policy issues – such as crop insurance, disaster assistance and the Farm Bill – while serving as a source for agronomic and crop marketing education for its members.*

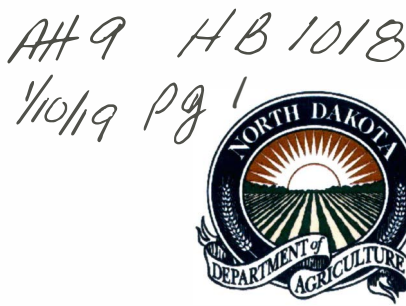
Chairman Monson, members of the House Appropriations Education and Environment Division, as you can see the needs here are broad in scope. That said, the budget you have before you sets an excellent guideline for your deliberations.

Some specifics:

- Extension operational support; NDSU does arguably the best ag research anywhere. However, it takes a strong delivery system to get that research out to farmers and ranchers. Providing County Extension Agents the means necessary to carry out this vital agricultural mission is paramount in importance to the success of North Dakota agriculture.
- Web and digital delivery; the web is the informational highway of today. Enhancing Extension's web opportunities proves even better access to agricultural information and access to a wider demographic than ever before.
- Agribiome Initiative; the harnessing of microbiomes in plants, animals and soils is revolutionizing agriculture and agricultural products. North Dakota is a leader in agricultural research; to keep pace with Agribiome research it is critical to put the people in place to take advantage of this technology and to provide North Dakota agriculture the advantages this technology provides.
- Precision agriculture; this isn't the future of agriculture it is the now of agriculture. Enhancing precision agriculture pays immediate and future dividends to the North Dakota ag industry.
- Operations support; enhancements at all levels are great but you need the funding necessary to maintain those enhancements. Operations support is a normal cost of business; falling behind in operations support cannot and should not be an option.

In closing, this Committee is very well aware of the dividends returned to North Dakota agriculture and the North Dakota economy by the investments made in the research and extension priorities that have been outlined by the State Board of Ag Research and Education. Agriculture drives the bus in the North Dakota economy; it is essential that we provide the necessary research and extension "fuel" to keep the bus going. Therefore, it is with great pride that the North Dakota Grain Growers Association support HB 1020 and would respectfully request the Committee's concurrence.

COMMISSIONER  
DOUG GOEHRING



ndda@nd.gov  
www.nd.gov/ndda

**Testimony of Tom Bodine  
Deputy Agriculture Commissioner  
North Dakota Department of Agriculture  
House Bill 1020  
House Appropriations - Education and Environment Committee  
Roughrider Room  
January 10, 2019**

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Chairman Monson and members of the House Appropriations - Education and Environment Committee, I am Tom Bodine, Deputy Agriculture Commissioner, and I am representing Agriculture Commissioner Doug Goehring. I am here today in support of House Bill 1020.

It has been a pleasure for the Agriculture Commissioner to serve on SBARE, and work with NDSU extension and research to move agriculture forward, and address issues when they arise. We have several great examples of how our agencies have worked together over the last biennium, including; the industrial hemp program, palmer amaranth, the local foods program, pesticides, the 2017 drought, and many other programs.

As a department, we recognize not only the importance of agriculture research, but the importance of extension's role as being the local, trusted expert for producers. This is why I am proud to stand here today in support of HB 1020 and would be happy to answer any questions you may have.

**LEGISLATIVE BUDGET HEARING – NDSU EXTENSION**

**JANUARY 10<sup>TH</sup> 1:30 PM STATE CAPITAL BISMARCK, ND**

**Dear Legislators and Friends:**

**Good afternoon, I am Dave Miller a Farmer/Businessman from Donnybrook, ND. My wife Sharon and I raised our family of 2 girls and 4 boys on a cattle and grain farm. We took over my father's farm in 1970 and in 1975 I started a seed conditioning business to compliment my farming operation. You might say that the NDSU Extension has taken my family farm and seed conditioning business full circle. Full circle meaning that NDSU Extension has made a difference in the lives of my family, has made a difference in my farming career and has made a difference in my seed conditioning business from their inception in my generation to the passing on to the next generation. And I would like to tell you how extension has done this by highlighting a few of the programs that it has provided for my family. After graduating from NDSU with an Agricultural Engineering degree I brought my new bride to Donnybrook to take over my Fathers Farm. Being new to the area my wife chose to join a "Homemakers Club" to make new friends. These clubs were promoted and guided by the Extension. Through this club Sharon and I met some of our best and lifelong friends. Thank you extension!**

**In my farming business I have participated in the "Chemical Certification Program". This program instructs a farmer how to handle and use farm production chemicals safely. I have also participated in the "Crop Improvement Association". This program guides you in the production on new seed varieties and helps to distribute the seed to other seed producers. This program worked so well on my farm that I began to raise more and more Registered and certified seed on my farm. Thank you Extension!**

**When I was planning to start my seed conditioning business, I needed to build plant that would clean the main crops grown in the**

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*area and I wanted it to be portable. I contacted my county extension agent, and discussed my plans with him. He was knowledgeable in the main crops that I would be working with and what type of cleaning equipment that I would need. I built my first seed plant in the fall and Winter months to have it ready for spring seed cleaning. Since Extension is the outlet for the NDSU research center data, I was able to obtain critical information to build the seed cleaning plant from my county agent. For instance: I needed to know the degree of slope needed for different grains to move easily from one point to another. Thank you Extension!*

*Our 2 girls and 4 boys participated in the 4-H youth program from the age of 8 as a Clover Bud till they graduated from high school. As I reflect back on the many 4-H projects and programs they completed it makes feel good. Good that I took the time to encourage them and help them. From sewing to welding, from raising vegetables in a garden to raising calves and sheep, from building a cutting board to building a welding table, these 4-H projects have built character and a sense of pride and accomplishment in our children. This program is as much an urban program as it is a rural program, it's for kids everywhere! And it's one of the few programs that I know of that has parents working with their children, side by side, to complete a project or program. How valuable is that, parents working with their children. Thank You Extension!*

*Now I'm at the time of my life where my wife and I just want to put business worries away and enjoy family and friends. But many of you know it takes planning and strategy to pass a farm onto the next generation. One of our Sons had come home and was helping to operate the farming and seed conditioning business, so the process of passing on to the next generation was at hand. My wife and I had attended at least two or three seminars addressing farm transfer to the next generation, giving us some ideas but not a clear plan. Then we got a bulletin from the extension saying they were offering a "Design your Succession Plan" workshop. My wife and I have been to*

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***the workshop twice now and have come away with a plan that I describe as a "roadmap" guiding you through the steps, one at a time, on how to transfer the farm business to the next generation. Thank you Extension!***

***I consider myself blessed. I have a wife of 48 years that I love very much, and we both are healthy. My six children are happily married and successful in their vocations. Seven of them are involved in agriculture, 3 in the medical field and 2 in business. And to top it off I have 19 grand children to enjoy in all of their activities. So if you ask me, "Did the NDSU Extension have an effect on your life as a father or as a farmer or as a business man?" I would probably say "Have you got time for a cup of coffee? I'd like to tell about that."***

***Keep Extension strong! North Dakota is an agricultural state and the programs that Extension has to offer keeps our families healthy and keeps our youth at home!***

***Thank you for listening to my story. Do you have any questions?***

***Dave Miller, 32400 380<sup>th</sup> St. NW, Donnybrook, ND 5734 Phone 701-721-4414***

*Chemicals red and guided*



## Northeast North Dakota Extension Soil Health Program NDSU Langdon Research Extension Center (Since 2012) House Appropriations E and E Division - January 10, 2019

### Critical Soil Health Issues

- High Levels of salinity, sodicity and fluctuating groundwater depths.
- Loss of topsoil through wind and water erosion.

### Impacts on Farm Profitability

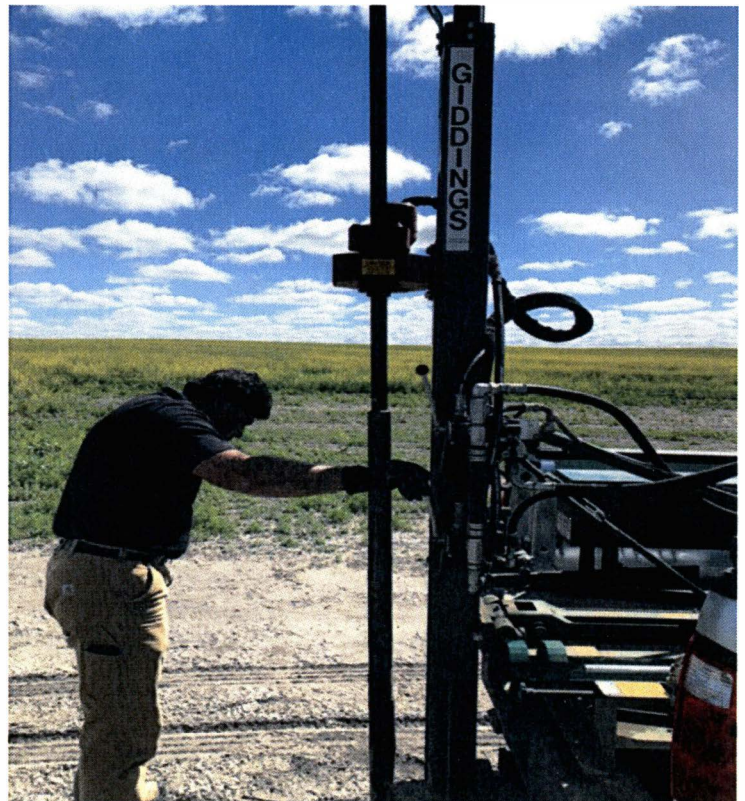
- Average 2018 direct cost of planting soybean, spring-wheat, canola and corn in NE North Dakota were \$82.27, \$93.46, \$139.48 and \$169.33 per acre.
- These investments were a net loss on saline-sodic areas and cost North Dakota farmers millions of dollars.

### Extension Focus on Soil Health Activities

- Helping landowners determine what is causing barren spots or marginal stands.
- Suggest suitable salt-tolerant annual crops and perennial grasses to establish vegetation on unproductive areas.
- Suggest practices, which minimize loss of topsoil.
- Update all stakeholders of the key observations of the Langdon REC Groundwater Management Research Project.

### Helping Landowners with Soil Sampling

- Landowners call Extension Agents with questions.
- Extension Agents coordinate a meeting with Extension Soil Health Specialist on the phone or in-person and setup a date to help landowners with sampling the unproductive areas.



## Northeast North Dakota Extension Soil Health Program NDSU Langdon Research Extension Center (Since 2012) House Appropriations E and E Division - January 10, 2019

- Once samples are taken, landowners are given information on what to get tested by a soil lab of their choice.
- Upon receiving the soil results, a thorough explanation along with the recommendations are provided to rehabilitate saline-sodic areas back to planting annual cash crops.
- In 2018, 39 landowners were helped with sampling 130 unproductive sites in nine Counties.



### Key Observations of the Langdon REC Groundwater Management Research Project

- Under drier weather, tiling may not be necessary as the average annual growing season groundwater depths may lower naturally.
- Tiling alone under drier weather will not lower salinity as moving the excess salts out of the topsoil will also require decent amount of rain.
- Under drier weather, despite tiling salinity levels can increase due to the increased evapotranspiration and resulting capillary rise of soil water.
- Tiling alone will not remediate soil sodicity as sodicity remediation will require application of amendments that add calcium to the soil.
- If sodicity is established, soil amendments should always be applied first before tiling as amendments will convert sodicity into salinity.



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Good afternoon, Chairman Monson, members of the committee,

My name is Wesley Frederick. I am a farmer/rancher from Flasher in Grant County. I represent Area IV on the State Soil Conservation Committee (State Committee) and serve as the State Committee's Vice Chairman.

I am here today to testify in support of continuing the current funding level for the State Committee's District Assistance Program.

The State Committee plays a vital role in insuring our local Soil Conservation District's ability to deliver critical conservation programs; ensuring the best technical assistance is available when designing and implementing conservation plans with landowners; and most importantly, provide for the continued availability of the conservation practices that ensure clean water, healthy soils, and other benefits on which the public relies.

I would like highlight two of the numerous changes that have occurred over the last year in regards to NDSU Extension's support and the function of the State Committee.

First, Bruce Schmidt was hired as our new Extension Soil Conservation Program Leader in November 2017. Funding for the position is shared with NDSU Extension and a US EPA 319 grant for Leadership Development. Bruce has brought a new perspective and energy to the State Committee and its fifty-four (54) local Soil Conservation Districts.

Second, a training program called Soil and Water Conservation Leadership Academy was developed in partnership with NDSU Extension, the Department of Health and the State Committee. The conservation leadership training is targeted to soil conservation district supervisors and staff, with over 160 attendees having taken the training to date.

As you can see, the Soil Conservation Districts rely on the State Committee and the Extension Soil Conservation Program Leader to provide needed outreach, facilitation and education.

However, the critical factor that impacts the day to day operations of the soil conservation districts is the District Assistance Program. For some Districts, the funding has insured the ability of maintaining one employee, without whom the district would become non-operational. The loss of funding has the potential to severely limit the capacity to provide technical assistance to local farmers and ranchers and facilitate efficient and effective grassroots conservation across the state.

This past year the State Committee was the focus of an Agriculture Committee legislative review. On November 15<sup>th</sup> 2018, Senator Joan Heckaman, Vice Chairperson of the Agriculture Committee, presented the committee report. The committee focused their review on the duties, responsibilities, and related costs and efficiencies of the State Soil Conservation Committee and related North Dakota State University Extension staff, and the needs of the soil conservation districts. It concluded, it was a necessity to continue the State Soil Conservation Committee. The report and its conclusion were accepted on a roll call vote with no votes in opposition.

In closing, I encourage you to continue funding the District Assistance Program at its current level.

Thank you for the opportunity to testify and I would welcome any questions.

Agriculture Committee Report - <https://www.legis.nd.gov/files/resource/committee-memorandum/ag-2017-final-report.pdf>

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## North Dakota Soil Conservation District Activities

### **DISTRICT PARTNERS**

#### **Dept. of Health**

EPA 319 Watershed Projects

Number of projects - 20

EPA 319 Grant for Soil and Water Conservation Leadership Level One  
Academy Training

95 Attendees in 2018

10 Sessions - 5 Sites planned 2019

#### **NDASCD Farm Bill Specialist Program**

37 District Participation - Local SCD's provide office space  
for 10 Farm Bill Specialist and producers to promote

Farm Program sign-ups FY 18 results -

CRP Total Acres 10,414

EQUIP Total Acres 127,116

CSP Total Acres 301,041

WBP Total Acres 9,872

WRE 1,288 Total Acres

TOTAL CONSERVATION ACRES 449,733 FY18

#### **NRCS**

SCD Districts provide Administrative help for NRCS Staff in the 54 Districts  
Three year Grant to SSCC / Ext. for Leadership Academy Training

#### **NDSU Extension**

Leadership Academy Facilitators - Planning and Training

SCD Supervisor Handbook & Accreditation Program Development

SCDAP administration and management

51 Districts approximately \$1.1 million last Biennium

124 District / Seasonal Employees assisted with wages

### **MARKETING CONSERVATION PROGRAMS**

District Newsletters

Websites

YouTube Videos

Facebook

Booths at County Fairs

Radio Talk Show

Direct Mailings

Newspaper articles

TV ads

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**EDUCATION  
PROGRAMS**

Stewardship Material Handouts  
Landowners Workshop  
Ladies Night Out  
School Programs for Grades K-12  
ND Clean Poster Contest  
Sam Ting Presenter  
Tom Gibson Presenter  
Ag in the Classroom Booth  
Arboretum Presentation  
Soil Tunnel at Public Library  
Tree Building Tours  
Pencil and Bookmarkers with Conservation message  
Eco-Ed Tours

**RANGELAND  
PROGRAMS**

Grazing Management Plans  
Seven Districts reported NutBal Sampling  
254 samples submitted  
29 producers  
Rangeland seeded with District no-till grass drill  
Manure Management Plans  
Hay Testing  
Range Tours  
Range Camp with NDSU Ext  
District Fence and pipeline cost sharing.

**SOIL  
HEALTH  
PROGRAMS**

Soil Health Tours / National Speakers  
Dr. Jonathan Lundgren  
Dr. Allen Savory  
Women Caring for the Land  
Cover Crop Tour  
Grassland Symposium  
Soil Health Summit

**TREE  
PROGRAMS  
Other than  
Plantings**

Windbreak Technology Training  
Tree Enhancement Program  
Tree Pruning Workshops  
School Tree Handouts / Arbor Day  
Shelterbelt Renovation

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From: Taya Spelhaug

Date: 1/10/19

Subject: Support for HB1020

Good afternoon, my name is Taya Spelhaug. I'm a resident of Fargo, a member of the NDSU Extension Citizens Advisory Council and the TechSpark Manager of North Dakota at Microsoft. Thank you for the opportunity to share my personal story about 4-H and my support of house bill 1020.

When you Bing the word "4-H", a simple explanation of the organization pops up. "*4-H hands-on learning and education programs for kids build skills like responsibility, resiliency and hard work, which help them succeed in life.*"

I grew up on a farm outside Kindred, ND. 4-H was a prominent part of my community. My mother had served as a 4-H camp nurse and my older brother was a 4-H member as well. When I turned 8 years old, I was thrilled to join our local 4-H club and I stayed involved through High School. Looking back on my childhood, those 10 years in 4-H played a big role in shaping who I am today, and instilled in me those three skills that have helped me succeed in life – *responsibility, resiliency, and hard work.*

Let me give you examples of how 4-H helped me develop those critical skills:

- Responsibility: Whether it's volunteering to clean the highway ditch by my hometown town, preparing for a meeting because I had been elected the president of their club, or having to run out to the barn in the dead of night in my pjs because I forgot to feed the sheep... all these experiences taught me to take responsibility not only for my wellbeing, but for those of others.
- Resiliency: This in another word is grit... which is a huge buzz words these days. If a child can learn to overcome obstacles, whether it's in a leadership activity at a 4-H camp or simply learning how to deal with getting a red ribbon on their cookies at the fair like I did, they will carry that girt far into their adulthood.
- Hard work: 4-H is all about learning by doing and most of the time the doing isn't easy. I saw the value of my hard work when I volunteer in my community, lead a local club or won Grand Champion Junior Showman at Achievements days. 4-H'ers work... and they work hard.

These are just 3 of the many life lessons kids develop throughout their time in 4-H, but as you can see these three are extremely important to the overall growth of a child and will lead to a successful future.

As a Microsoft employee I have seen the value of 4-H on another level. A few years ago, Microsoft and National 4-H partnered to develop the Change Makers program. A program designed to empowers the responsible, resilient, and hard-working 4-Hers to address the rural digital divide in the US. Here in North Dakota we have a group of Change Makers in Fargo that are working with a low-income youth from an after-school program put on by the nonprofit Charism. They teach these kids how to code which increases the digital skills of these kids. It's an exciting peer to peer program that no only helps the students in the afterschool program but has a lasing impact on those 4-H Change Makers.

With the state's financial shortfall in 2017, NDSU Extension funding (██████████) was reduced by over 14%. I hope you will support the "needs based budget" before you today and help 4-H grow its programs and continue to shape future generations of North Dakotans.

Thank you for your time and consideration.

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Testimony for NDSU Budget Hearing

Appropriations Committee

January 10, 2019

Nora Larson

2408 8th Ave NE

Lemmon, SD, 57638

Good afternoon Appropriations Committee members. My name is Nora Larson and I am a high school senior and a member of the East Adams Roughriders 4-H club, as well as a North Dakota State 4-H Ambassador.

Today I would like to tell you why NDSU Extension is important to me:

My Hogwarts letter never came, but my 4-H letter came when I was 8 years old and my local club leader invited me to join. For the past nine years, 4-H has given me so many amazing opportunities to grow as a person and as a citizen.

One of the things 4-H has taught me is to not be afraid of public speaking. 4-H is the reason I stand before you today. In 4-H we develop public speaking skills through club demonstrations, communication arts contests, and running business meetings. According to a Chapman University survey, the number one fear for Americans is public speaking. Just think about that, what people fear most is something 4-Hers do for FUN!

4-H gives youth the opportunity to explore their creative interests, encourages lifelong learning and community involvement for all its members. If I have an interest in something whether it be baking,

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theater, agriculture, or video production, 4-H is a support system for my endeavors and a way to display my hard work. For example, last year I used my video production skills to document my family's four generations of 4-H history.

4-H has also taught me about the importance of giving back to the community. Each December, my club shops for presents for Santa's workshop. This is our way of giving back and also a consumer choices lesson. I love this service project because we are providing what may be the only present these kids will get for Christmas.

In November of 2017, I was accepted into the ND 4-H Ambassador Program and have spent the past year on various committees, working at the ND State Fair, as well as traveling around the state to help out at 4-H events. I was on the planning committee for Mini Extension Youth Conference, an off-shoot of the 5-day 4-H conference held at NDSU in June. I was super excited to have been a part of the first ever Mini EYC bringing leadership training to youth on the western side of the state. I am also excited that Leadership Awareness Weekend, or LAW, will be held in Bismarck this February. This program teaches youth from across the state about parliamentary procedure, leadership, team building, as well as giving youth the chance to learn about our state government and spend a day at the capitol with their local legislators.

4-H has taught me about public speaking, life skills, and the importance of community. Because of 4-H, I have connections to people across the country and many lifelong friends. My wish is that more people discover the great opportunities 4-H has to offer! Our motto is "To Make the Best Better". Expanding the impact of NDSU Extension can help more youth become the best version of themselves.

Thank you for your time and consideration, are there any questions?

-Nora Larson



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HB 1020

1/10/19 – 1:30 to 3:30 PM

Good afternoon Chairman Monson and members of the House Appropriations – Education and Environment Division committee. It is an honor and pleasure to share with you my support for NDSU Extension.

My name is Vawnita Best. Along with my husband, Pete and our ten year old son, Kyle we ranch southeast of Watford City where we raise registered Angus cattle and Quarter Horses. We do so on the ranch I grew up on. In 1993 I left there bound for NDSU. I had grants, loans, and saving account monies generated by my eight 4-H market steers. My goal was to attain a Bachelors Degree in Animal and Range Sciences. At that time the brain drain was in full swing, but the dream was to one day be able to return home to the McKenzie County badlands and Elkhorn Creek Ranch.

After participating in many different 4-H youth programs and knowing and understanding the positive impacts those experiences had on our lives, we now have the opportunity to support Kyle in his own 4-H journey. Last year he was a first year 4-H member of the Young Guns 4-H club. His highlights at the McKenzie County fair were showing his market steer, Beefy, earning a Grand Champion on his Horsemanship Interview, and at the state level receiving an Award of Excellence for his Communication Arts video titled Putting the Freeze in Branding. 4-H transforms the life experiences of youth participating in its programs and activities.

The adult leadership program, Rural Leadership North Dakota is another that I have personal experience with. As a member

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of Class V of RLND, I can speak to the program's effectiveness in building leadership and networking capacities in and between North Dakotans and their communities. It has inspired many to enter the arena of public service and to lead in their communities with a servant heart.

Along with highlighting programs where benefits may be statistically hard to numerate, but that truly empower North Dakotans to improve their lives and their communities, I also wanted to share with you an observation I made in overall organization priority.

A commonly known statistic in American is that 1.5% of the US population is engaged in production agriculture and efficiently produces food and fiber for our country and much of the world. In December of 2018, NDSU Extension interviewed for the McKenzie County Extension Agent position. Part of that interview process was to prepare a five-minute presentation on the following:

"With the growing disconnect between the general public and agriculture, what would you do as the McKenzie County Extension Agent to help bridge that gap?"

Considering the issues that this disconnect has created with policy and lawmakers nationally and in the arena of public opinion, more than ever, we need an organization with grass roots placement on the community level able to work toward bridging this gap. NDSU Extension has identified and prioritized the need to bridge the rural and urban gap and they are well equipped to do so.

Thank you again for the opportunity to share my support for NDSU Extension with you. Are there any questions?

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Natural Resources  
Conservation Service

Bismarck State  
Office  
PO Box 1458  
Bismarck, ND  
58502-1458

Voice 701.530.2000  
Fax 855-813-7556

To Whom This May Concern;

According to the 2017 USDA Farm Service Agency North Dakota Acreage Summary Report (<https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/State-Offices/North-Dakota/pdfs/2017AcreageReportingSummary.pdf>) 12.5 million acres of native grassland, seeded mixed forage crops, and planted alfalfa is used to support the livestock industry here in North Dakota. There exists a tremendous amount of technical support to help producers manage these lands for future generations to enjoy and profit from. The mission of the USDA Natural Resources Conservation Service (NRCS) is to help people to help the land. ND NRCS provides technical and financial assistance to producers, including the livestock sector, that is authorized via each Farm Bill. For NRCS to accomplish our mission we must partner with various organizations for technical, education and outreach, and demonstration activities.

North Dakota State University (NDSU) Extension Service has proved to be an excellent and reliable partner helping ND NRCS to provide high quality assistance to our livestock producers in the areas of grazing management, providing hayyard management strategies, developing and publishing extension publications aimed at improving land stewardship and livestock production, and holding outreach and educational events. There are too many examples to list in this letter of how NDSU Extension has helped ND NRCS and livestock producers, however here are a few examples of how ND NRCS and NDSU Extension have partnered to provide direct assistance to our livestock producers:

- Extension Publications. NRCS co-authored and incorporated the publication "Strategies for Managing Drought in the Northern Plains", NDSU extension publication R1819. This publication has been incorporated into ND NRCS Conservation Practice Standard 528 Prescribed Grazing, where it is required to include a drought management plan for each grazing plan ND NRCS designs. The publication and technical information has been specifically designed for livestock producers in the Northern Plains.
- Education and Outreach. NDSU Extension and ND NRCS has partnered to support in-service programs. These in-service programs provide opportunity to educate extension agents, producers, agency personnel, and non-governmental organizations. The past couple of years we have focused these programs on how estimate forage production, determining carrying capacities, and drought management.
- Technical Assistance. ND NRCS relies upon NDSU Extension with technical assistance in many areas: Riparian Ecological Site Descriptions, advisory to ND NRCS Plant Materials Center program, sharing native and tame grassland survey data, and reviewing technical documents prior to being published.

ND NRCS' mission would be directly impacted if this partnership were to be diminished in any fashion. Without NDSU Extension the 12.5 million acres of land that is supporting our livestock industry as well as the producers who rely on education and technical support to manage these lands would be diminished. NDSU Extension continues to have a vital and key role in helping our producers become the best

*Helping People Help the Land*

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NDSU Letter of Support  
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stewards of the land they can be.

Sincerely,

**MARK HAYEK** Digitally signed by MARK HAYEK  
Date: 2019.01.03 11:22:45 -06'00'

Mark Hayek  
ND NRCS State Rangeland Management Specialist  
202 E Rosser Ave  
Bismarck, ND 58501  
701-528-2080



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**Remarks to House Education and Environment Division  
Representative David Monson, Chairman  
January 11, 2019  
Mark Jirik, Director, Northern Crops Institute**

The Northern Crops Institute was founded to promote the crops grown in North Dakota, Minnesota, Montana and South Dakota. For over thirty-five years, NCI has had remarkable success and evolved into a first class facility that is recognized worldwide and has earned a high level of trust for quality educational and technical expertise.

NCI is governed by the Northern Crops Council, consisting of producers from all four states as well as members of the industry. The Northern Crops Institute continues to look toward the future and endeavors to be on the leading edge of market innovation and market development. There is a strong belief among our stakeholders that we can be a significant agent of change for the region.

The Northern Crops Institute finds itself at a critical time of change within the organization, as well as within both the domestic and international market. As with any changes, we can shrink from the challenge, or we can choose to face the change head on to create a positive change for our organization, for our region, and for agriculture.

Internally, due to retirements and departures, we have seen close to 50% staff turnover in the last two years. State budget challenges have caused us to look closer at our activities and our thinking has evolved to less about we cut costs, and more about how we add value to the farmers, communities, states, and industries we serve to earn the right to grow.

We have also been challenged with some of our traditional approaches to how we conduct our courses and the structure of our organization. Getting participants from overseas continues to be a challenge due to visa concerns as well as cultural changes globally. Our use of technology and alternative educational methods have been limited to this point.

Over the last year, we have changed both the structure and positions within the organization to allow us to both expand our educational offerings as well as change some of those delivery methods. In addition, we are changing the roles to be more outward focused to increase our marketing efforts for our educational and technical service capabilities.

We are working to expand our programs for both international and domestic focused educational efforts on food, feed, and fuel. There is an increasing focus on a need for greater asset utilization and seeing the investments made by the region being put to the best use.

NCI has been fortunate to have invested in our facilities and equipment over our history, and have done so in a prudent and economic minded manner. We've utilized space, repurposed, reused, and consolidated wherever possible. However, changing food safety rules, changing industry needs, and the age of our equipment and facilities will require significant investment in the future.

Both international and domestic markets continue to present many challenges and opportunities. Recent developments in international relationships continue to highlight the need for continued education and continued focused on developing markets. While some might look at the overall situation and be disheartened, we can't lose sight of the fact that the world economy continues to grow, as does the GDP per capita.

UN projections expect total global population will grow from today's 7.6 billion people to 8.6 billion by 2050 and 11.2 billion by 2100. Recently, much of that growth has come from Asia, but it is expected that this growth will shift west to the Middle East and Africa over the coming years.

On the back of this population growth will be rising middle class incomes and demand for more protein and better diets. The traditional progression of consumer diets has seen a shift from the basic necessities to a more complex diet that includes meat, snacks, and more convenience items.

Domestically and in other developed economies, we are seeing increasing focus on foods that are seen to be healthier and in some cases more traditional. Concepts like gut health, healthy fats, plant proteins, fermented foods, ancient grains, and heritage foods continue to gain popularity and scientific study. In addition, consumer trends around eating local, heritage foods, transparent supply chains, and 'foods with a story' are driving what the consumer is purchasing, and in some cases how they purchase their food.

Biofuel consumption also continues to grow internationally. 2018 will be the biggest year on record for ethanol exports as other countries look to find an oxygenate that will serve their environmental and economic goals.

NCI has an important place to play in all of these markets as we focus on our mission of growing both domestic and international markets for northern grown crops and expanding value added processing.

NCI has historically been successful due to the partnerships we have developed, and that cooperation will be key to any future success. These partnerships have been focused on state level commodity groups and their national check off partners. In addition, NCI has partnered with our land grant university partners in the four respective states. Our success wouldn't be possible without the support of NDSU's Plant Science and Food Science program, NDSU's Department of Agribusiness and Applied Economics, NDSU's extension programs and a host of other programs at North Dakota State University, South Dakota State University, University of Minnesota, and Montana State University.

From an international standpoint, farmers have relied on national commodity check off groups along with matching Foreign Agriculture Service funds to promote crops in overseas markets. In light of recent trade disputes, our national partners have indicated that they are expecting one time funding for new and innovative international marketing programs and they are counting on NCI to be a key part of those programs.

A#1 HB 1020  
Pg 3 1/11/19

Domestically, we continue to build relationships with organizations that help drive domestic consumption and should allow us to expand our knowledge of current trends, and increase awareness of our capability leading us to more educational efforts and technical services.

The Northern Crops Institute is committed to our mission of growing both domestic and overseas markets for northern grown crops, as well as expanding value added agriculture. The current market environment is filled with opportunities masked as challenges. We look forward to meeting these challenges in cooperation with our partners and adding value back to the farmers, communities, businesses, and the states we serve.

We were specifically asked to address five specific items in this hearing:

- 1) Audit findings - There were no audit findings directly related to the Northern Crops Institute.
- 2) Use of base level funding - Our base level funding is used for staff salary and day-to-day operations.
- 3) Proposed budget cuts - While we would prefer not to face the proposed budget reductions, our intent is to grow through them, delivering more value to the industries that we serve.
- 4) Budget changes - We are asking for no additional budget changes at this time.
- 5) Potential changes in federal funding - NCI receives very little direct federal funding. We are always seeking ways to increase value to agriculture and will work with our state and national collaborators as much as possible in the current trade situation and explore any opportunities that become available.

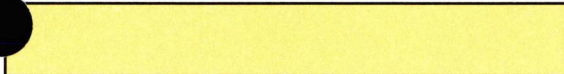
In closing, we deeply appreciate all of the support you have given the Northern Crops Institute over the years. Thank you for this opportunity.

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# NCI

## Northern Crops Institute

## NORTH DAKOTA STATE UNIVERSITY

# 2019-2021 BIENNIAL BUDGET

### ND HOUSE APPROPRIATIONS COMMITTEE

Representative David Monson, Chairman  
House Education and Environment Division

8:30 a.m., Friday, January 11, 2019

### HB 1020

## NORTHERN CROPS INSTITUTE

Budget No. 638

- Mark Jirik, Director  
Northern Crops Institute
- Greg Kessel, Chairman  
Northern Crops Council
- Dean L. Bresciani, Ph.D., President  
North Dakota State University
- Greg Lardy, Ph.D., Associate VP for Agricultural Affairs  
North Dakota State University



[www.ndsu.edu/legislators](http://www.ndsu.edu/legislators)



# Northern Crops Institute

Northern Crops Institute (NCI) is an international meeting and learning center that brings together customers, commodity traders, technical experts, agricultural producers, and food and industrial processors for education, discussion and technical services. A cooperative effort between North Dakota, Minnesota, Montana and South Dakota, we work to support the promotion, market development and expanded sales of crops grown in this four state region.

Some of our accomplishments are highlighted in this material. NCI continues to focus on education and technical services as mandated in the NDCC.

The Northern Crops Institute has undergone a tremendous amount of change in the last two years with over 50% of the staff being new as a result of retirements and departures. This has resulted in us closely examining our strategy, operations, and outreach.

NCI did not request or receive any new general fund initiatives in the 2017 legislative session, and is not requesting any new initiatives for 2019-2021. Our focus has been, and continues to be on growing our revenue to cover costs by adding value to the industry. We do this by providing relevant and worthwhile courses as well as generate more fee income from the industry for our processing, baking, and analytical laboratory services.

The environment that we are operating in is significantly different than in prior years due to ongoing trade concerns and disruptions as well as changing trends in the domestic market. The mission and role of NCI is as critical today as likely any time in our history. NCI will be adding more employees funded by a combination of other state support, support from our industry partners, and fee based income. In short, as long as we are adding value for the farmers, communities, states and industries we serve, we will endeavor to earn our right to grow.

At the conclusion of this biennium ending June 30, 2019, it is anticipated that NCI will have a zero ending balance in general appropriations. The majority of general appropriations covers 10 FTE's with the remaining two FTE's covered from other funds.

HB 1020 includes a general fund budget reduction of \$94,345 from the 2017-19 biennium appropriation and recommended base increase of \$113,221 resulting in total appropriations of \$1,905,767.

For the 2019-21 biennium we are not seeking any one-time initiatives. Under a 5% budget cut as proposed by the Governor, NCI will intent to grow through the cuts by adding value to the industry and the region.

NCI continues to receive regional funding, however, without the support of the North Dakota Legislature, we would not be able to continue the level of work documented here. We appreciate your continued interest and support of the Northern Crops Institute.

Submitted by,  
Mark Jirik, Director  
Northern Crops Institute  
www.northern-crops.com  
701-231-7736

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## Northern Crops Institute

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### **AGENCY STATUTORY AUTHORITY**

North Dakota Century Code Chapter 4-14.2.

### **AGENCY DESCRIPTION**

The Northern Crops Institute (NCI) is a cooperative effort between North Dakota, Minnesota, Montana and South Dakota to support the promotion and market development of crops grown in this four-state region. NCI brings together customers, commodity traders, technical experts, agricultural producers, and food and industrial processors for education, discussion and technical services. NCI provides technical and marketing assistance through specialized training courses and technical services that facilitate domestic and international market development and expanded sales of northern grown crops. Representatives from more than 135 countries have visited NCI since its inception. Northern Crops Institute is located on the campus of North Dakota State University.

### **AGENCY MISSION STATEMENT**

Northern Crops Institute supports regional agriculture and value-added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern-grown crops.

### **AGENCY VISION STATEMENT**

Northern Crops Institute will be the international meeting and learning center to promote the northern-grown crops of the United States.

### **AGENCY PERFORMANCE MEASURES**

NCI provides status reports to the Northern Crops Council three times annually at Council meetings (per NDCC Section 4-14.2-02 and 4-14.2-03).

Minutes and financial reports of the following meetings of the Northern Crops Council for the 2017-2019 biennium are on file at the NCI office and with NCC members. The dates of the meetings are as follows:

June 15, 2017

November 14, 2017

March 16, 2018

June 26, 2018

November 13, 2018

Next scheduled meeting is tentatively set for late February or early March 2019

Staff reports on educational courses, technical support of industry, future strategic plans, funding situation, and collaborative efforts with NCI's partners are given at each meeting.

The NCI also provides regular status reports on NCI accomplishments to other agencies and regional commodity groups that provide special (other) funds when requested. Those groups include: South Dakota and Minnesota Legislatures, Minnesota Department of Agriculture, and the commodity groups from the four-state region.

  **Northern Crops Institute**

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**FINANCIAL AUDIT FINDINGS**

NCI had no audit findings.



## Northern Crops Institute

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### PROPOSED BUDGET REDUCTIONS

In this critical stage in agriculture with a shifting international trade landscape and changing domestic consumer, ideally, we would not be facing a budget cut. We are faced with the difficult choice of cutting the important work that we are doing to support the agricultural industry, or to endure and grow through the budget cuts. Our work and our mission at this time is too critical not to move forward. Our focus has shifted from how can we cut, to how can we grow through the cuts with our other region support and technical services.

## Northern Crops Institute

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### AGENCY FUTURE CRITICAL ISSUES

The Northern Crops Institute was founded to promote the crops grown in North Dakota, Minnesota, Montana and South Dakota. For almost forty years, NCI has had remarkable success and evolved into a first class facility that is recognized worldwide and has earned a high level of trust for quality educational and technical expertise.

NCI is governed by the Northern Crops Council, consisting of producers from all four states as well as members of the industry. The Northern Crops Institute continues to look toward the future and endeavors to be on the leading edge of market innovation and market development. There is a belief among our stakeholders that we can be a significant agent of change for the region.

The Northern Crops Institute finds itself at a critical time of change within the organization, as well as within both the domestic and international market.

Internally, due to retirements and departures, we have seen close to 50% staff turnover in the last two years. State budget challenges have caused us to look closer at our activities and our thinking has evolved to less about we cut costs, and more about how we add value to the farmers, communities, states, and industries we serve to earn the right to grow.

We have also been challenged with some of our traditional approaches to how we conduct our courses and the structure of our organization. Getting participants from overseas continues to be a challenge due to visa concerns as well as cultural changes globally. Our use of technology and alternative educational methods have been limited to this point.

Over the last year, we have changed both the structure and positions within the organization to allow us to both expand our educational offerings as well as change some of those delivery methods. In addition, we are changing the roles to be more outward focused to increase our marketing efforts for our educational and technical service capabilities.

We are working to expand our programs for both international and domestic focused educational efforts on food, feed, and fuel. There is an increasing focus on a need for greater asset utilization and seeing the investments made by the region being put to the best use.

NCI has been fortunate to have invested in our facilities and equipment over our history, and have done so in a prudent and economic minded manner. We've utilized space, repurposed, reused, and consolidated wherever possible. However, changing food safety rules, changing industry needs, and the age of our equipment and facilities will require significant investment in the future.

Both international and domestic markets continue to present many challenges and opportunities. Recent developments in international relationships continue to highlight the need for continued education and continued focused on developing markets. While some might look at the overall situation and be disheartened, we can't lose sight of the fact that the world economy continues to grow, as does the GDP per capita.

UN projections expect total global population will grow from today's 7.6 billion people to 8.6 billion by 2050 and 11.2 billion by 2100. Recently, much of that growth has come from Asia, but it is expected that this growth will shift west to the Middle East and Africa over the coming years.

## Northern Crops Institute

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### **AGENCY FUTURE CRITICAL ISSUES (continued)**

On the back of this population growth will be rising middle class incomes and demand for more protein and better diets. The traditional progression of consumer diets has seen a shift from the basic necessities to a more complex diet that includes meat, snacks, and more convenience items.

Domestically and in other developed economies, we are seeing increasing focus on foods that are seen to be healthier and in some cases more traditional. Concepts like gut health, healthy fats, plant proteins, fermented foods, ancient grains, and heritage foods continue to gain popularity and scientific study while consumer trends around eating local, heritage foods, transparent supply chains, and foods with a story are driving what the consumer is purchasing, and in some cases how they purchase their food.

Biofuel consumption also continues to grow internationally. 2018 will be the biggest year on record for ethanol exports as other countries look to find an oxygenate that will serve their environmental and economic goals.

NCI has an important place to play in all of these markets as we focus on our mission of growing both domestic and international markets for northern grown crops and expanding value added processing.

NCI has historically been successful due to the partnerships we have developed, and that cooperation will be key to any future success. These partnerships have been focused on state level commodity groups and their national check off partners. In addition, NCI has partnered with our land grant university partners in the four respective states. Our success wouldn't be possible without the support of NDSU's Plant Science (which also encompasses the Food Science program), NDSU's Department of Agribusiness and Applied Economics, NDSU's extension programs and a host of other programs at North Dakota State University, South Dakota State University, University of Minnesota, and Montana State University.

From an international standpoint, farmers have relied on national commodity check off groups along with matching Foreign Agriculture Service funds to promote crops in overseas markets. In light of recent trade disputes, our national partners have indicated that they are expecting one time funding for new and innovative international marketing programs and they are counting on NCI to be a key part of those programs.

Domestically, we continue to build relationships with organizations that help drive domestic consumption and should allow us to expand our knowledge of current trends, and increase awareness of our capability leading us to more educational efforts and technical services.

The Northern Crops Institute is committed to our mission of growing both domestic and overseas markets for northern grown crops, as well as expanding value added agriculture. The current market environment is filled with opportunities masked as challenges. We look forward to meeting these challenges in cooperation with our partners and adding value back to the farmers, communities, businesses, and the states we serve.



**Northern Crops Institute**

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**UPDATE ON NCI INITIATIVES IN 2017-2019**

NCI did not seek any new initiatives in 2017-2019.

 Northern Crops Institute

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**COMPARISON OF 2017-2019 APPROPRIATION AND ESTIMATED SPENDING**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
Total General Fund Appropriation	\$1,886,891	\$1,117,179	\$769,712	Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds of federal grants.




**Northern Crops Institute**


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**NORTH DAKOTA UNIVERSITY SYSTEM  
 NORTHERN CROPS INSTITUTE  
 MAJOR COMPONENTS OF CURRENT BASE LEVEL**

Salaries	\$2,645,286
Operating	\$747,435
Equipment	\$250,000
Capital Projects	-
<b>Total Budget</b>	<b>\$3,642,721</b>

Funding:	
Federal Fund	-
General Fund	\$1,886,891
Special Fund	\$1,755,830
<b>Total Funding</b>	<b>\$3,642,721</b>

Source: IBARS 2017-19, Agency Submitted

## Northern Crops Institute

### 2019-2021 Needs-Based Budget

Reconciliation of 2017-19 Original General Fund Appropriation to  
2019-21 HB 1020

	<u>NCI</u>
<b>General Fund:</b>	
2017-19 Original General Fund Appropriation(5/31/18 Approp.)	\$ 1,886,891
<b>Base Adjustments:</b>	
Less 2017-19 One-time Appropriations	-
Less 2017-19 Capital Projects	-
<u>Total Base Adjustments</u>	<u>-</u>
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>1,886,891</b>
<b>Executive Recommendation Base Increases (Decreases):</b>	
4%/2% salary/benefit increase and health insurance increases	113,221
Base Budget Reduction	(94,345)
<b>2019-21 Recommended Base General Fund Increases(Decreases)</b>	<b><u>18,876</u></b>
<b>2019-21 Total Executive Recommendation - General Fund</b>	<b><u>1,905,767</u></b>
<b>Increase (Decrease) From 2017-19 Base General Fund Budget</b>	<b><u>18,876</u></b>
<b>Other Funds:</b>	
2017-19 Original Other Fund Appropriation	\$ 1,755,830
Remove Capital Project & One Time funds	
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b><u>\$ 1,755,830</u></b>
<b>Executive Recommendation Base Increases (Decreases):</b>	
4%/2% salary/benefit increase and health insurance increases	47,678
5%/10 net reduction/increase	94,345
<b>Total Executive Recommendation Increases</b>	<b><u>142,023</u></b>
<b>2019-21 Total Executive Recommendation - Other Funds</b>	<b><u>\$ 1,897,853</u></b>
<b>Increase (Decrease) From 2017-19 Base Other Funds Appropriation</b>	<b><u>142,023</u></b>



## Northern Crops Institute

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### IMPACT

The Northern Crops Institute has endeavored to tell the global consumer about the quality characteristics of the crops grown in the Northern Great Plains of the United States via education and technical services. We believe that crops grown in the northern-tier of the U.S. are valued by discriminating worldwide customers and will stand the test of quality against competitors.

NCI is the prime source of technical education about the regions food grains, feed grains, oilseeds, and pulses and their value added products. We are seeing strong demand growth for our educational programs and technical services and we are exploring new and innovative ways to achieve our mission and reach an even wider audience. This is a reflection of the success of our programs to date and the credibility of the information provided through our programs.

Results from educational programs are long-term. We provide information on marketing and technical utilization of northern-grown commodities for both domestic and export markets. This service increases the possibilities of buyers using northern-grown commodities in the future. Often purchases occur several years after educational efforts when conditions become optimal for the buyers.

One of our national partners had this to say about our programs, "I'm not sure we can directly link their purchases to course attendance but it certainly has contributed to the ongoing success of their business. They not only attend the trainings themselves, but send their customers as well. We use NCI courses to support the development of African businesses."

Crops grown in the northern tier of the U.S. are valued by discriminating customers around the globe. Since 1983, NCI has hosted crop buyers, technical experts, commodity traders, processors and producers from more than 132 nations. They come to learn more about crop quality and availability. NCI does not buy or sell crops. We teach people how to use our crops in their food and feed products and how to buy them through the U.S. grain marketing system.

In 2017 and 2018, NCI trained more than 374 professionals from 43 countries in our educational programs, with 24 scheduled short courses and customized courses. Another important part of our educational program is our activity with trade teams. In the last two years, NCI hosted 102 international visitors from 11 countries representing trade missions. In addition, NCI's staff often participates in domestic and overseas programs reaching more than 1,000 buyers and processors in the last two years alone. Our website ([www.northern-crops.com](http://www.northern-crops.com)) lists information and photos on our recent programs and trade teams, and the 2018 Annual Update is included at the end of this report.

### STATE AND REGIONAL IMPACT

Agriculture is the economic backbone in the states of North Dakota, Minnesota, Montana and South Dakota. NCI conducts programs that focus on building relationships and developing markets for our high quality crops and value added products. Agricultural exports are extremely important to the North Dakota economy with \$4.5 billion exported in 2017 (USDA ERS). Agricultural related jobs continue to be an important share of employment in all four states. The combined value of the four-state exports of agricultural products in 2017 was \$16.2 billion, accounting for 12% of the total U.S. exports. (<http://www.ers.usda.gov/Data-products/state-export-data>).



## Northern Crops Institute

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### MAJOR ACCOMPLISHMENTS

- **International business depends on personal relationships.** Offering courses at NCI remains the best means of connecting potential customers to our state and region. The hospitality displayed in our region by NCI staff, course lecturers, regional farmers and hosts for field trips to hotel, restaurant and retail personnel create positive connections to our state and region. For many international buyers of crops, developing a relationship with the producers and visiting their farms is essential.
- **Overseas seminars and service:** In 2017 and 2018, NCI staff attended twelve international seminars, events or provided technical support in Brazil, Cambodia, China, England, Indonesia, Japan, Myanmar, Peru, Philippines, South Korea, Taiwan, Thailand and Vietnam.
- **Wheat and soybean procurement training:** In 2017 and 2018, NCI educated 67 crop buyers from 22 countries at four procurement courses. These courses teach grain merchandisers how to make more effective U.S. crop purchases while managing their risk. The procurement courses continue to utilize the NDSU electronic Commodity Trading Room (CTR), which is a high-technology room with live information feeds for financial information including equities and credit, plus commodity market information such as agriculture, energy and biofuels.
- **“Barley to Beer” was a course developed in response from barley growers, who wanted a greater understanding of the malting and brewing process.** Growers and others in the industry are often the first source of knowledge for customers and consumers, especially those that represent the industry at both domestic and international marketing events. Giving them greater knowledge allows these growers to better educate and discuss the value of the crops grown in this region.
- **“Wheat to Bread” was a course developed at the request of wheat growers who wanted a greater understanding of the quality characteristics of wheat, and what determines the value of their wheat.** It was designed for those in the industry that deal with consumers, but also those involved in variety development.
- **Technical services to processors and users of regional commodities:** Food companies, small to large, regional to multinational, use NCI’s processing capabilities to develop new or modified food products and to evaluate ingredients and processing parameters under proprietary conditions. In 2018, NCI conducted in-house processing, baking investigations, and analytical testing projects for approximately 40 entities.
- **Continued demand for pasta courses:** NCI’s pasta manufacturing courses are very unique. In fact, there are no other U.S. organizations that offer pasta processing courses. Pasta courses remain in demand by U.S. and international pasta companies. In 2018, our pasta course attracted 32 participants from 3 countries and we are looking at expanding our courses as the frozen, refrigerated and fresh pasta markets continue to expand.
- **NCI Feed Center activities:** In fiscal year 2017, the NCI Feed Center made 1,487 tons of feed – 1,235 tons for teaching animals and 252 tons for research animals. In fiscal year 2018, the center made 1,388 tons – 1,180 tons for teaching animals and 208 tons for research animals.

## Northern Crops Institute

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### MAJOR ACCOMPLISHMENTS (continued)

- **Food and feed safety education:** Feed Production Center Manager Kim Koch, Ph.D., is a Trainer of Trainers and a Lead Instructor for Human and Animal Food Preventive Controls and serves on several national committees of the Food Safety Preventive Controls Alliance – the organization charged with the implementation of the training programs in support of the current Good Manufacturing Practice, Hazard Analysis and Risk Based Preventive Controls for Human Food 21 CFR 117 and Animal Food 21 CFR 507 set forward in the Food Safety Modernization Act. Trainings began in 2016 and Koch has provided training for one human food course and five animal food courses.
- **In 2018, NCI hosted two feed manufacturing courses.** One was designed with the U.S. Grains Council and Iowa State University and utilized both online content as well as in person training held at the NCI Feed Center. The second course was held in conjunction with World Initiative on Soy in Human Health (part of the American Soybean Association) for participants from Nigeria and Cambodia and was held at both the NCI Feed Production center as well as at South Dakota State Swine Production Center and traveled through southern Minnesota.
- **In 2017, NCI successfully carried out its first INT-SOY program.** The INT-SOY (International Soybean) course was held at the University of Illinois until changes at the state level caused the course to be discontinued. With the support of the regional soy groups, the course was successfully moved to NCI. Over the last two years, 51 participants from 13 countries learned about the versatility of soybeans from feed, food, to industrial uses.
- **NCI has partnered with the NDSU Experiment Station Pilot plant to utilize their Hexane Extraction unit.** In order for new varieties of oilseeds to enter production, feeding trials of the meal are generally recommended. Outside of NDSU, there are only two other hexane extraction units in operation in North America, both with long wait times. NCI has been working closely with NDSU to market and utilize this valuable piece of equipment.
- **Teaching the value of Northern Grown Wheat:** Fourteen foreign flour millers and bakers from six countries have attended the two contracting for wheat value courses at NCI in 2017-18. At the NCI's Baking Laboratory they test their own flours procured from other countries against this regions wheat varieties in breads, cakes and other baked goods for functionality and quality. In side by side comparison, baking trials from this region win every time.
- **Pulses:** dry beans, peas, and lentils. Production of these crops has seen tremendous growth. To promote these markets, NCI offered three courses in 2017-18 which addressed their utilization, functionality, and quality characteristics. NCI staff has also been featured speakers for the pulse crops at national and international seminars. Bean and lentil production continues to expand significantly in western North Dakota and eastern Montana. NCI is also actively engaged in the "Protein Highway" project, stretching across southern Canada and the Northern Plains region of the U.S..

## Northern Crops Institute

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### MAJOR ACCOMPLISHMENTS (continued)

- **Barley craft malting initiatives:** According to the Brewers Association website, the growing U.S. craft brewing industry accounted for 25% of the total malt production in 2014 and contributed almost \$3 billion to the four state economy in 2016. NCI collaborated with NDSU Plant Sciences and the Institute of Barley and Malt Sciences on three courses teaching farmers and brewers to understand malt processing and effectively interpreting barley and malt analyses. There were a total of 78 participants that attended the courses in the past two years.
- **NCI has been actively engaging with a number of organizations that have complimentary missions such as the North Dakota Livestock Alliance.** We hosted FFA alumni leaders for leadership training and a session for resiliency and stress management for agricultural education teachers in 2018. We hosted several tours for FFA members with the hope of inspiring interest in food science, innovation, and entrepreneurship.
- **In late November through mid-December, the Northern Crops Institute hosted Dennis Hoiberg of Lessons Learnt Consulting, Melbourne, Australia.** Dennis is an expert in resiliency, stress management, and dealing with change in rural and farm economies. Dennis has over thirty years working in rural environments in Australia, New Zealand and South Africa, places that are no strangers to extreme weather, market, and financial risks. Building resilient communities with the ability to manage change is an important component of building strong agricultural communities with a value added mindset. Dennis had the chance to visit with over 1,000 individuals over twenty different presentations in the region.

## Northern Crops Institute

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### PARTNERSHIPS AND LEADERSHIP

- Northern Crops Institute provides leadership in North Dakota and the nation, and in return receives collaborative assistance from many companies, regional universities, organizations and individuals. Without these partnerships, NCI could not do its work.
- Educational courses are offered in partnership with American Association of Cereal Chemists (AACC), American Feed Industry Association (AFIA), American Society for Brewing Chemists (ASBC), American Soybean Association International Marketing (ASAIM), Ameriflax, Association of Oil Chemists Society (AOCS), International Association of Operative Millers (IAOM), National Grain and Feed Association (NGFA), NDSU Extension Service, U.S. Grains Council (USGC), U.S. Soybean Export Council (USSEC), World Initiative for Soy in Human Health (WISHH), U.S. Wheat Associates (USW), USA Dry Pea and Lentil Council (USADPLC), U.S. Dry Bean Council (USDDB), the USDA/FAS Cochran Program, and others. These groups assist in identifying possible participants and often provide other resources.
- Regional universities, particularly North Dakota State University, South Dakota State University, University of Minnesota, and Montana State University, make important contributions to NCI's programs through technical, scientific, and practical applications for the use of crops in food and feed processing. Significant contributions by the NDSU Departments of Agribusiness and Applied Economics, Agricultural and Biosystems Engineering, Cereal and Food Sciences, Plant Sciences, and the use of the electronic Commodity Trading Room in NDSU's Barry Hall allow NCI to offer programs with the most sophisticated information and research.
- Commodity check-off groups and their producer members in North Dakota, South Dakota, Minnesota, and Montana continue to be major partners and supporters of Northern Crops Institute. NCI staff identify new market opportunities for regional producers and design courses to focus on wheat, soybeans, corn, barley, pulses and other specialty crops.
- The Northern Crops Council, NCI's governing board of directors, continues to provide regional four-state leadership for NCI's programs and strategic planning. NCI's Industry Advisory Board, drawn from the four-state agricultural supply and processing industries and the grain trade, provides advice, lecturers, tours, and resources for NCI programs and initiatives.

### 43 Nations Learn More About Northern-Grown Crops

In 2017 and 2018, NCI staff taught short course participants, hosted trade teams and visitors, and consulted with companies from the following countries:

Algeria	El Salvador	Mexico	Spain
Argentina	Ethiopia	Morocco	Sri Lanka
Australia	Ghana	Myanmar	Sweden
Bangladesh	Guatemala	Nigeria	Taiwan
Cambodia	Honduras	Panama	Thailand
Canada	India	Peru	The Netherlands
China	Indonesia	Philippines	Tunisia
Costa Rica	Israel	Senegal	UAE
Dominican Republic	Italy	Singapore	USA
Ecuador	Japan	South Africa	Vietnam
Egypt	Kenya	South Korea	

19.0208.01000

Sixty-sixth  
Legislative Assembly  
of North Dakota

**HOUSE BILL NO. 1020**

Introduced by

Appropriations Committee

1 A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota  
2 state university extension service, northern crops institute, upper great plains transportation  
3 institute, main research center, branch research centers, and agronomy seed farm.

4 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

5 **SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds  
6 as may be necessary, are appropriated out of any moneys in the general fund in the state  
7 treasury, not otherwise appropriated, and from special funds derived from federal funds and  
8 other income, to the North Dakota state university extension service, the northern crops  
9 institute, the upper great plains transportation institute, the main research center, branch  
10 research centers, and agronomy seed farm, for the purpose of defraying the expenses of the  
11 North Dakota state university extension service, the northern crops institute, the upper great  
12 plains transportation institute, the main research center, branch research centers, and  
13 agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as  
14 follows:

15 Subdivision 1.

16 NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE

Governor's

	<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
18 Extension service	\$51,188,489	\$53,124,252	\$51,188,489
20 Soil conservation committee	<u>1,091,520</u>	<u>1,091,520</u>	<u>1,091,520</u>
21 Total all funds	\$52,280,009	\$54,215,772	\$52,280,009
22 Less estimated income	<u>26,646,689</u>	<u>27,886,984</u>	<u>26,646,689</u>
23 Total general fund	\$25,633,320	\$26,328,788	\$25,633,320
24 Full-time equivalent positions	252.98	242.51	252.98



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Legislative Assembly

1 Subdivision 2.

2 NORTHERN CROPS INSTITUTE

3 Governor's

	<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
4 Northern crops institute	\$3,642,721	\$3,803,620	\$3,642,721
5 Total all funds	\$3,642,721	\$3,803,620	\$3,642,721
6 Less estimated income	<u>1,755,830</u>	<u>1,897,853</u>	<u>1,755,830</u>
7 Total general fund	\$1,886,891	\$1,905,767	\$1,886,891
8 Full-time equivalent positions	11.80	12.80	11.80

10 Subdivision 3.

11 UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

12 Governor's

	<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
13 Upper great plains transportation	\$22,060,242	\$22,421,422	\$22,060,242
14 institute			
15 Total all funds	\$22,060,242	\$22,421,422	\$22,060,242
16 Less estimated income	<u>18,617,068</u>	<u>18,957,222</u>	<u>18,617,068</u>
17 Total general fund	\$3,443,174	\$3,464,200	\$3,443,174
18 Full-time equivalent positions	43.88	43.88	43.88

20 Subdivision 4.

21 MAIN RESEARCH CENTER

22 Governor's

	<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
23 Main research center	\$108,642,243	\$107,032,049	\$108,642,243
24 Total all funds	\$108,642,243	\$107,032,049	\$108,642,243
25 Less estimated income	<u>59,084,828</u>	<u>58,053,640</u>	<u>59,084,828</u>
26 Total general fund	\$49,557,415	\$48,978,409	\$49,557,415
27 Full-time equivalent positions	336.12	340.05	336.12

29 Subdivision 5.

30 BRANCH RESEARCH CENTERS

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Legislative Assembly

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
1				
2				
3	Dickinson research center	\$6,825,551	\$6,707,017	\$6,825,551
4	Central grasslands research center	3,423,624	3,389,685	3,423,624
5	Hettinger research center	4,975,133	4,984,698	4,975,133
6	Langdon research center	2,964,607	2,968,417	2,964,607
7	North central research center	4,953,652	4,989,503	4,953,652
8	Williston research center	5,118,890	5,117,619	5,118,890
9	Carrington research center	<u>9,175,491</u>	<u>9,445,861</u>	<u>9,175,491</u>
10	Total all funds	\$37,436,948	\$37,602,800	\$37,436,948
11	Less estimated income	<u>20,281,691</u>	<u>20,807,242</u>	<u>20,281,691</u>
12	Total general fund	\$17,155,257	\$16,795,558	\$17,155,257
13	Full-time equivalent positions	110.29	109.81	110.29

Subdivision 6.

AGRONOMY SEED FARM

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
16				
17				
18	Agronomy seed farm	<u>\$1,536,129</u>	<u>\$1,571,648</u>	<u>\$1,536,129</u>
19	Total special funds	\$1,536,129	\$1,571,648	\$1,536,129
20	Full-time equivalent positions	3.00	3.00	3.00

Subdivision 7.

BILL TOTAL

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
23				
24				
25	Grand total general fund	\$97,676,057	\$97,472,722	\$97,676,057
26	Grand total other funds	<u>127,922,235</u>	<u>129,174,589</u>	<u>127,922,235</u>
27	Grand total all funds	\$225,598,292	\$226,647,311	\$225,598,292

**SECTION 2. ONE-TIME FUNDING.** The following amounts reflect the one-time funding items approved by the sixty-fifth legislative assembly as adjusted for the 2017-19 biennium.

	<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
30			
31	Seed cleaning plants	\$1,500,000	\$0

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Legislative Assembly

1	Junior master gardener program	15,000	0
2	Road and bridge asset management system	<u>300,000</u>	<u>0</u>
3	Total all funds	\$1,815,000	\$0
4	Total other funds	<u>1,700,000</u>	<u>0</u>
5	Total general fund	\$115,000	\$0

6       **SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount  
7 included in the grand total other funds appropriation line item in section 1 of this Act, any other  
8 income, including funds from federal acts, private grants, gifts, and donations, or from other  
9 sources received by the North Dakota state university extension service, the northern crops  
10 institute, the upper great plains transportation institute, the main research center, branch  
11 research centers, and agronomy seed farm, except as otherwise provided by law, is  
12 appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium  
13 beginning July 1, 2019, and ending June 30, 2021.

14       **SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
15 **INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues  
16 received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing  
17 operational expenses. Any revenues received in excess of \$755,000 may be spent only for  
18 one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

19       **SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
20 **INCOME - REPORT.** The Williston research extension center shall report to the sixty-seventh  
21 legislative assembly on amounts received and spent from mineral royalties, leases, or  
22 easements in the biennium beginning July 1, 2017, and ending June 30, 2019, and the  
23 biennium beginning July 1, 2019, and ending June 30, 2021.

24       **SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural  
25 research and education and appropriate branch research center directors, the director of the  
26 office of management and budget shall transfer appropriation authority within subdivisions 1, 2,  
27 4, and 5 of section 1 of this Act.

28       **SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The state board of  
29 higher education may adjust or increase full-time equivalent positions as needed for the entities  
30 in section 1 of this Act, subject to availability of funds. All full-time or part-time positions must be  
31 separate from North Dakota state university. Annually, the board shall report to the office of

Sixty-sixth  
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1 management and budget and to the budget section any adjustments made pursuant to this  
2 section.

3 **SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended  
4 general fund appropriation authority to and any excess income received by entities listed in  
5 section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any  
6 unexpended funds from these appropriations or revenues are available and may be expended  
7 by those entities, during the biennium beginning July 1, 2021, and ending June 30, 2023.

# Northern Crops Institute Annual Update

2018

Northern Crops Institute supports regional agriculture and value-added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern-grown crops.



# Leadership

## Director Report | Mark Jirik

2018 was a year of tremendous change both within the region, as well as within the Northern Crops Institute.

John Crabtree and Linda Briggs both retired during the course of the year. Betsy Armour departed NCI to work with Northarvest Bean Growers. All of them are missed, but this has also allowed us to look at our structure to more quickly adapt to changes in the future.



Jirik

The need for both more, and better educational efforts continues to expand. Brian Sorenson and Jena Bjertness were hired as program managers to lead and grow our educational programs and offerings. In 2018, we added several new courses and already several other new courses are in the works for 2019.

Grant Christian was brought on as Communications and Marketing Manager, a role that was changed to place greater emphasis on the marketing component – making sure people know who we are and what we can do on both education and technical services.

There are also many things that didn't change. Our mission to support regional agriculture and value added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern grown crops has not changed. Our commitment to the region we serve, the growers, and our collaborators is as strong as ever. Our passion for the success of our regions growers and communities and the impact we can have locally, regionally, and internationally continues to drive us.

## Connect with us!

Did you know you can connect with NCI in more places than just [northern-crops.com](http://northern-crops.com)? Keep current with what is happening by following, liking and sharing NCI on Facebook, Twitter, YouTube and LinkedIn.



## NCC Chair Report | Greg Kessel

Greg Kessel, a producer from Belfield, North Dakota, was re-elected as chair of the Northern Crops Council at the reorganizational meeting on June 26, 2018. Tregg Cronin, a producer from Gettysburg, South Dakota, was re-elected as the vice chair of the NCC.



Kessel

In March, the NCC heard from Kimberly Atkins, the Vice President and COO of the US Grains Council who reviewed the strategic plan and forward projections on feed grains exports, ethanol, and DDGS and program highlights for the next year. Atkins toured the NCI building, Feed Production Center, and the NDSU Commodity Trading Room at the conclusion of the meeting.

In June, US Wheat Director of Programs, Erica Oakley joined the Northern Crops Council to review US Wheat's outlook for the future and US Wheat's focus on building relationships, and markets through education, training, and demonstrating value. Oakley also highlighted the long term relationship that US Wheat and NCI have shared.

"Hearing from our partner's and their vision of the future growth of the industry helps us form the NCI's future as well and helps us understand where our future directions will be headed." Stated Kessel. "As the industry changes and with the changing trading situation, we have to be willing and able to change as well."

The Northern Crops Council, made up of producers, industry representatives, and administrators from the four state region to guide the path of the Northern Crops Institute and ensures it is carrying out its mission to support regional agriculture and value added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern grown crops.

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## Retirements

John Crabtree retired in June after a thirty-three year career as the assistant director. John was responsible for NCI's short courses and also ended up being our international participant's main point of contact while they were here in Fargo. This ranged from airport pick up to handling any emergencies that happened along the way (of which there were a quite a few).

Linda Briggs retired in October after sixteen years as administrative assistant and office manager. Helping with the day-to-day running of the institute as well as making arrangements for the courses – she was the first point of contact for many at NCI.

We miss them both, but wish them well in retirement!



Assistant Director John Crabtree with a personalized gift for his retirement.

# 2019 COURSE SCHEDULE

**January 22-24**

Preventive Controls for Animal Food

**April 30 - May 2**

Pasta Production and Technology

**May 14-17**

Baking with Hard Red Spring Wheat

**May 20-24**

Soy Based Texturized Protein and Meat Analog

**July 30 - August 2**

Baking with Whole Wheat & Whole Grains

**August 12-16**

NCI-INTSOY

**September 9-18**

Grain Procurement Management for Importers

**September 30 - October 3**

Barley and Malt Quality:

**October 7-11**

Soybean Procurement  
Management for Importers

Other courses will be added to our schedule as the year progresses. Please check our website [www.northern-crops.com](http://www.northern-crops.com) for the most up-to-date information.

## 2018-19 Northern Crops Council (NCC)

**Greg Kessel, Chair**  
Belfield, ND  
ND Barley Council

**Tregg Cronin, Vice Chair**  
Gettysburg, SD  
SD Wheat Commission

**Dean Bresciani, Ph.D.**  
Fargo, ND  
President  
North Dakota State University

**Anthony Chavez**  
Minneapolis, MN  
Buhler Inc.

**Kris Folland**  
Halma, MN  
MN Soybean R&P Council

**Doug Goehring**  
Bismarck, ND  
Commissioner of Agriculture  
ND Department of Agriculture

**Ken Grafton, Ph.D.**  
Fargo, ND  
VP Agricultural Affairs  
North Dakota State University

**Justin Halvorson**  
Sheldon, ND  
ND Corn Growers Association

**Randy Hinebauch**  
Chinook, MT  
MT Wheat & Barley  
Committee

**Dave Katzke**  
Minneapolis, MN  
General Mills

**Mark Martinson**  
Rolette, ND  
U.S. Durum Growers  
Association

**John Swanson**  
Mentor, MN  
MN Corn R & P Council

**Todd Sinner**  
Casselton, ND  
SB&B Foods

**Greg Svenningsen**  
Valley City, ND  
ND Wheat Commission

**Vance Taylor**  
Grand Forks, ND  
North Dakota Mill

**Troy Uglem**  
Northwood, ND  
ND Soybean Council

**Ben Vig**  
Sharon, ND  
ND Oilseed Council

**Chris Westergard**  
Dagmar, MT  
Northern Pulse Growers  
Association

**Chris Wiegert**  
Watertown, SD  
Healthy Food Ingredients

*Thank You*

**Thank You to All Who Supported NCI Programs and Activities in 2018**

- |   |                                     |  |
|---|-------------------------------------|--|
| North Dakota State University           | Anita Florido                       | Kevin Haas                                     |
| Agribusiness and Applied Economics      | Justin Friesz                       | Lindeman Farm, Brownton, MN                    |
| Frayne Olson, Ph.D.                     | Mike Klein                          | Maple River Grain & Agronomy, LLC              |
| William Wilson, Ph.D.                   | Greg Oberle                         | Terry Johnson                                  |
| David Bullock, Ph.D.                    | Colfax Farmers Elevator Inc.        | Jeremy Rolf                                    |
| Agricultural and Biosystems Engineering | Paul Sanderson                      | Minneapolis Grain Exchange                     |
| Kenneth Hellevang, Ph.D.                | Columbia Grain                      | Joe Albrecht                                   |
| Cereal and Food Sciences                | Darren Bjornson                     | Mark Bagan                                     |
| Clifford Hall, Ph.D.                    | Mike Brinda                         | Minnesota Barley Council                       |
| Plant Sciences                          | Ron DeJongh                         | Marvin Zutz                                    |
| John Barr                               | CW Valley Coop                      | Minnesota Corn Growers Association             |
| Paul Schwarz                            | Curt Bjertness                      | Adam Birr                                      |
| Elias Elias, Ph.D.                      | Dakota Global                       | Minnesota Corn Research & Promotion Council    |
| Rich Horsley, Ph.D.                     | Travis Maddock                      | Dwight Mork                                    |
| Frank Manthey, Ph.D.                    | Dakota Growers Pasta Company Inc.   | Minnesota Department of Agriculture            |
| Senay Simsek, Ph.D.                     | Alexis Freier-Johnson               | Ben Thomas                                     |
| DeLane Olsen                            | David Hahn                          | Minnesota Soybean Growers Association          |
| Kristin Whitney                         | Dakota Specialty Milling Inc.       | Kyle Raguse                                    |
| Adam's Family Farm, Grand Forks, ND     | Robert Meyer                        | Minnesota Soybean Research & Promotion Council |
| ADM                                     | De Mari Pasta Dies USA              | Kim Nill                                       |
| Ross Wyatt                              | Gabriele Cannata                    | Drew Parsley                                   |
| AGT Foods U.S.A.                        | Demaco                              | Tom Sluneka                                    |
| Eric Bartsch                            | Leonard De Francisci                | Minnesota Wheat Research & Promotion Council   |
| Alton Grain Terminal                    | Joseph De Francisci                 | Dave Torgerson                                 |
| Scott Altoff                            | Al Lucia                            | Montana Department of Agriculture              |
| Mark Wild                               | Duluth Seaway Port Authority        | Ben Thomas                                     |
| AmeriFlax                               | Kate Ferguson                       | Montana Wheat and Barley Committee             |
| Sheri Coleman                           | Adele Yorde                         | Randy Hinebauch                                |
| Amity Technology LLC                    | Dupont                              | Collin Watters                                 |
| Howard Dahl                             | David Sabbagh                       | National Sunflower Association                 |
| Ardent Mills                            | Grace Arney                         | John Sandbakken                                |
| Kurt Becker                             | Fargo Brewing Company               | Natural Products Inc.                          |
| Askegaard Organic Farm, Fargo, ND       | Chris Anderson                      | Paul Lang                                      |
| Benson-Quinn Co.                        | Frontier Futures Inc.               | Jon Stratford                                  |
| Thomas Lahey                            | Adam Knosalla                       | North Dakota Agricultural Weather Network      |
| BNSF Railway Inc.                       | General Mills                       | Daryl Ritchison                                |
| Jennie Hubert                           | Dave Katzke                         | North Dakota Barley Council                    |
| Darrell Faircloth                       | Genesis Feed Technologies           | Steve Edwardson                                |
| Brandon Mortenson                       | Peter Schott                        | Greg Kessel                                    |
| Briess Malt and Ingredients             | Gillespie Family Farms, Johnson, MN | North Dakota Corn Growers Association          |
| Cassie Poirier                          | Global Innovative Solutions         | Justin Halvorson                               |
| Brushvale Seed Inc.                     | Gene Griffin                        | North Dakota Corn Utilization Council          |
| Travis Meyer                            | Grain Millers Inc.                  | Dale Ihry                                      |
| Buhler, Inc.                            | Roger Mortenson                     | North Dakota Department of Agriculture         |
| Anthony Chavez                          | HC International, Inc.              | Doug Goehring                                  |
| Eugene Dust                             | Curt Petrich                        | North Dakota Farm Bureau                       |
| Michael Ehr                             | Healthy Food Ingredients            | Jeff Missling                                  |
| Aidin Milani                            | Jennifer Tesch                      | North Dakota Farmers Union                     |
| Rene Steiner                            | Chris Weigart                       | Mark Watne                                     |
| Busch Agricultural Resources            | Hunter Grain Company                | North Dakota Grain Dealers Association         |
| Alan Slater                             | Scott Murch                         | Stuart Letcher                                 |
| Canadian Northern Railway               | Insta-Pro International             | North Dakota Grain Growers Association         |
| Bryan Paskewicz                         | Dave Albin                          | Dan Wogsland                                   |
| Cargill, Inc.                           | Katie Mayo                          | North Dakota Grain Inspection Service          |
| Katie Jorgenson                         | Intelligent Malt                    | Mark Adams                                     |
| April Morgan                            | Chris Anderson                      | North Dakota Mill & Elevator                   |
| Teresa Kurkowski                        | Katrina Christiansen, Ph.D.         | Vance Taylor                                   |
| Central Farm Service Elevator           | Kansas State University             | North Dakota Oilseed Council                   |
| Jim Schulz                              | Grain Science and Industry          | Donna Ellison                                  |
| CHS, Inc.                               | Shawn Thiele                        | Benjamin Vig                                   |
| Brian Bleyl                             | Kelley Bean                         | North Dakota Soybean Council                   |
| Taylor Smalley                          | John Bartsch                        | Derik Pulvermacher                             |
| Yuxi Weng                               | Land O'Lakes                        | Stephanie Sinner                               |
| Ryan Caffrey                            | Scott Waldner                       | Harrison Weber                                 |
| Dick Carlson                            | Legume Matrix                       | Nancy Johnson                                  |



*Thank You*

North Dakota Wheat Commission  
Neal Fisher  
Erica Olson  
Jim Peterson  
Greg Svenningsen

Northarvest Bean Growers Association  
Tim Courneya

Northern Canola Growers  
Barry Coleman

Northern Plains Potato Growers Association  
Charles Gunnerson

Northern Pulse Growers Association  
Shannon Berndt  
Chris Westergard

O'Leary Farm, Danvers, MN  
Osborn Barr  
Greta Bierbaum

Prairie Aquatech  
Dennis Harstad

ProSeed  
Keith Peltier

Rahr Malting Co.  
Jesse Theis  
Curt Jacobson  
Aaron Eernisse  
Xiang Yin

Red River Commodities  
Robert Majkrzak

Red River Valley Sugarbeet Growers Association  
Duane Maatz

Richland IFC Inc.  
Rick Brandenburger

Verbend Malting  
Brent Manning

SB&B Foods  
Robert Sinner  
Todd Sinner

South Dakota Corn Utilization Council  
Lisa Richardson

South Dakota Department of Agriculture  
Mike Jaspers

South Dakota Soybean Processors Inc.  
Thomas Kersting

South Dakota State University  
Dairy & Food Science Dept.  
John Haberkorn  
Dept. of Animal Science  
Keith Underwood

Dept. of Biology & Microbiology  
Bill Gibbons

Dept. of Economics  
Lisa Elliott, Ph.D.

South Dakota Wheat Commission  
Reid Christopherson  
Tregg Cronin

Stone Arch Commodities  
Hunter Kaestner

Swenson Farms, Walcott, ND  
The Money Farm, Fargo, ND  
Mike Krueger

The Scoular Company  
Walter Lanza

The Soyfoods Council  
Linda Funk

USDA/GIPSA/ FGIS  
Noah Brook

U.S. Durum Growers Association  
Mark Martinson  
Deana Wiese

U.S. Wheat Associates  
Steve Wirsching

University of Illinois  
Dept. of Agricultural & Consumer Economics  
Craig Gundersen, Ph.D.

University of Minnesota  
Dept. of Agronomy & Plant Genetics  
Seth Naeve, Ph.D.  
Jochum Wiersma, Ph.D.

Valley Malt  
Andrea Stanley

Wenger Manufacturing Inc.  
Brian Plattner

*Thank You*  
**2018 Agribusiness Sponsors!**

AgCountry Farm Credit Services  
AGT Foods  
AmeriFlax  
Arrow K Farms  
Arthur Companies Inc.  
Bay State Milling Co  
Becky and Kim Koch  
Buhler Inc.  
Colfax Farmers Elevator Inc.  
Columbia Grain International Inc.  
Dakota Growers Pasta Company EO/AA  
Healthy Food Ingredients  
Iowa Corn  
Minnesota Corn Growers Association  
ND Corn Growers Association  
ND Farmers Union Mutual Insurance  
ND Grain Dealers Association  
ND Grain Growers Association  
ND Soybean Growers Association  
North Dakota Trade Office Inc.  
Northern Canola Growers Association  
Northern Plains Potato Growers Association  
Northern Pulse Growers Association  
ProSeed  
Red River Commodities  
Richland IFC Inc.  
RRV Sugarbeet Growers Association  
Sinner Brothers & Bresnahan Farm  
Sue and David Katzke  
US Durum Growers

## NCI Thanks Outgoing NCC Members for Their Service

The Northern Crops Council is the governing body for the Northern Crops Institute. They dedicate their time and talent to making sure NCI is focused on our mission and properly utilizing the time and resources of the institute.

We would like to thank the following outgoing council members for their service: Keith Peltier, ProSeed, who served as industry representative from West Fargo, ND. Dwight Mork, producer from Bellingham, MN who represented Minnesota Corn Research and Promotion Council; and Drew Parsley, producer from Warroad, MN who represented the Minnesota Soybean Research and Promotion Council.



**Former NCI Director Mark Weber presents Keith Peltier, ProSeed, who served as industry representative from West Fargo, ND, a gavel plaque for his service.**

## A Special Thank You to Our 2018-2019 Funding Partners

Minnesota Department of Agriculture  
Minnesota Soybean Research and Promotion Council  
Minnesota Wheat Research and Promotion Council  
Montana Wheat and Barley Council  
State of North Dakota  
North Dakota Soybean Council  
Northarvest Bean Growers  
North Dakota Wheat Commission  
South Dakota Department of Agriculture  
South Dakota Soybean Research and Promotion Council  
South Dakota Wheat Commission

## Highlights

### 2018 Brings New Faces and Directions to NCI's Educational Efforts

NCI's 2018 educational programming got off to a great start in April with the "Pasta Production and Technology" course, and finished with the "Barley to Beer" and "Wheat to Bread" courses in November, for a total of 12 courses.

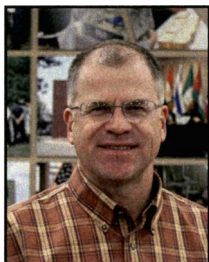
After 34 years at NCI, Assistant Director John Crabtree began a well-deserved retirement on June 29, 2018. In his role, John ran all of the educational courses at NCI, in addition to assisting in many of the day to day responsibilities under five directors.

In place of an assistant director, two program managers were hired to focus on increasing the number of educational programs that NCI offers, for both overseas as well as domestic markets, and increase the presence of NCI in the industry.

NCI welcomed Jena Bjertness and Brian Sorenson to the NCI team in July; Bjertness joined NCI from the Nutrition Lab in the Animal Science department at NDSU, and has an M.S. degree in Animal Science and a strong background in animal nutrition. NCI welcomed back Brian Sorenson who returns to NCI after seven years at Dakota Specialty Milling. He has an M.S. degree in Cereal Chemistry and a career focused



Bjertness



Sorenson

on grain quality and food processing. Brian and Jena jumped right in to our busy course calendar in July, and completed the year in November.

At the request of industries, we added several new course offerings over the last year, most notably the Soybean Meal Procurement course directed to Southeast Asian buyers. In the process of organizing a number of procurement courses, NCI has looked at how we can consolidate some of our content and deliver it more effectively. In 2019, instead of having a soy procurement, food grade soy procurement, and soybean meal procurement, we will be having a general soy procurement with multiple tracks for embedded into the course for more specific requirements.

Several of our partner organizations asked that we conduct training for those farmers and partners that talk directly to customers and policy both domestically and worldwide. As one of them said, "Most people know barley goes into beer, but most don't know how it got there." As a result, we added two new courses, targeted towards our farmer board members and industry partners called, "Barley to Beer" and "Wheat to Bread."

The fast changing trade relationships highlight the need for NCI to be nimble and adjust with the needs of the industry. NCI will continue to work with our international partners such as USSEC, WISHH, US Wheat Associates, and USGC to ensure we are working hand in hand with them helping grow markets and value for our crops beyond our borders.

A key part of our mission is focusing on the domestic markets and growing value added agriculture. Going forward, we will be developing courses and programs designed for our region and serving our domestic consumers.

Part of that will be in evaluating how we can be in front of emerging trends in the market place, part of that will be working with our partners on bringing new value added products to the marketplace. An example of this is in 2019 we will be holding our first high oleic soybean oil course.

NCI will continue to leverage the strengths that we have at our disposal including a food and animal food safety experts, pilot scale processing equipment, training feed mill, and regional expertise.

### NCI Hosts Resiliency Expert Dennis Hoiberg

In late November through Mid-December, the Northern Crops Institute hosted Dennis Hoiberg of Lessons Learnt Consulting, Melbourne, Australia. Dennis is an expert in resiliency, stress management, and dealing with change in rural and farm economies. Dennis has over thirty years working in rural environments in Australia, New Zealand and South Africa, places that are no strangers to extreme weather, market, and financial risks. Building resilient communities with the ability to manage change is an important component of building strong agricultural communities with a value added mindset.



Hoiberg

Dennis had the chance to visit with over one thousand individuals and conducted over twenty different presentations; spreading his message of HOPE (Habits, Optimism, Planning, Enacting) with a blend of science, humor, and real life experience.

In early 2019, NCI will be releasing short video clips on social media highlighting the key messages that Dennis shared with the audiences.

"The receptiveness of the people, the willingness of people to listen to my message, and the willingness of people to share their experience, highlighted the need for the message." Said Hoiberg.

Dennis' trip was made possible with financial help from AgCountry Farm Credit Services, Minnesota Wheat, Minnesota Corn, and the Minnesota Department of Agriculture.

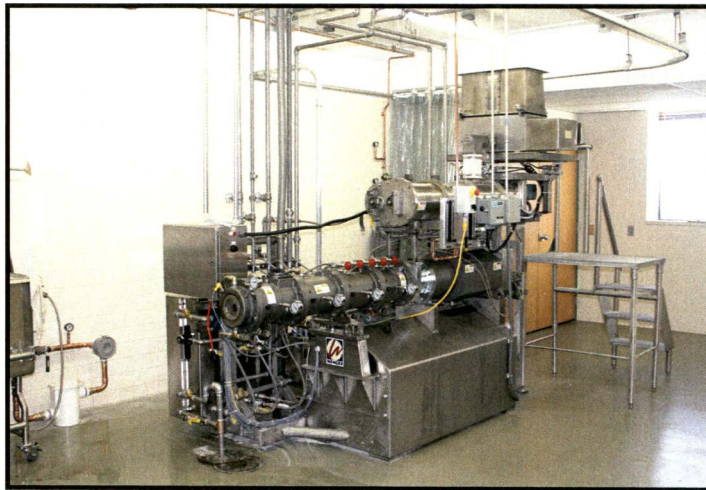
## NCI's Wenger TX-52 Twin-Screw Extruder Capabilities

The four-state region that the Northern Crops Institute serves produces a wide range of grain, pulse, and oilseed crops. Most of those crops can be utilized either solely or in combination to produce an array of food, feed, and industrial products through the use of extrusion technology. The Northern Crops Institute utilizes a Wenger Model TX-52 twin-screw, co-rotating extruder to convert northern crops into useful and nutritious food and feed as well as interesting industrial products. The Northern Crops Institute hosts visitors from around the globe to view Wenger Model TX-52 twin-screw demonstrations, attend educational courses and training seminars, and conduct product development to improve existing products or develop new products.

In recent years, twin screw extruders have seen increased utilization for new products with intricate shapes, novel ingredients, and unique sizes, which are beyond the capabilities of single-screw extrusion systems. Twin-screw extruders can fill many of these food, feed, and industrial needs. The term "twin-screw" applies to extruders with two screws of equal length, placed next to each other inside an extrusion barrel. Twin-screw extruders are much more complex than single-screw extruders, however, twin-screw extruders provide much more flexibility and better control.

The Northern Crops Institute has three extrusion experts on staff. The three staff members compliment each other in their respective areas of expertise so that a broad range of extrusion-related expertise can be provided to industry clients. Dr. Kim Koch, Feed Production Center Manager, has experience in feed and food extrusion technology theory and application throughout his career. Mr. Rilie Morgan, Process Manager, has over a dozen years of experience operating the Institute's Wenger TX-52 twin-screw extruder and has utilized many of the crops produced in the four-state region. Dr. Zach Liu, Food Scientist, has expertise in understanding chemical and physical interactions of ingredients that are processed with twin-screw extrusion technology.

The Northern Crops Institute staff employs twin-screw technology to provide client-



Wenger TX-52 Twin-Screw Extruder  
Products Range

- \* Expanded Snacks (Baked/Fried)
- \* Breakfast Cereals
- \* Snack Pellets (Half Products)
- \* Pasta

- \* Pet food
- \* Animal Feed - Specialty
- \* Texturized Vegetable Protein
- \* Meat Analogs
- \* Pregelatinized Flours and Meal
- \* Industrial Ingredients and more

based product development services and to provide instructional demonstrations for the Institute's educational courses. The food industry is continuously demanding new innovations and new products. Twin-screw extruders were adopted by the food industry about 30 years ago to provide new products for the food industry. Originally developed for the plastics industry, twin-screw extruders were first used by candy manufacturers for hard to extrude soft candies, but have become very popular with food, feed, and industrial products manufacturers to produce many highly specialized products.

The Institute's Wenger TX-52 twin-screw extruder system consists of several sub-components that include a live bin, a feeding screw, a preconditioning chamber, an extruder barrel, jacketed heads, rotating screws, and a cutting die head. The Institute's twin-screw has three primary processing zones: feeding, kneading, and final processing zone involving the device's twin-screws. The Institute's Wenger twin-screw extruder has greater ability and flexibility for controlling both product and process parameters than conventional single screw extruders. The twin-screw's design, allows for easy cleaning and rapid product changeover. The twin-screw extruder has more control over process and product variability due to the ability to more closely match desired shear during extruder operation. Products produced on

the Wenger TX-52 twin-screw extruder can be dried by either the Institute's Buhler OTW-50 Fluid Bed Dryer or Lincoln Air Impingement Oven/Toaster.

The Institute's Wenger TX-52 twin-screw extruder has such flexibility that it allows the production of a wide variety of high-value products at low processing volumes. Product and process parameters derived from the twin-screw extruder can closely match large scale production extruders. This fact encourages food and feed manufacturers to undergo process and product development with confidence at the Northern Crops Institute and obtain real-world information on their quest to develop new products, introduce innovation, optimize processes, introduce new ingredients in exiting products, or simply fine-tune exiting products.

The Northern Crops Institute's Wenger TX-52 Twin-screw Extruder provides an opportunity to educate food industry professionals on twin-screw extrusion technologies, to explore new ideas, to develop new processing methods, and to produce new experimental products. The Northern Crops Institute's staff has expertise to educate interested parties on twin-screw processing, to analyze unique twin-screw extrusion industry needs and apply the most pertinent and effective twin-screw technology to satisfy those needs.

## Educational Courses

### Pasta Production and Technology

Ecuador, Canada, USA • April 17-19, 2018



This course provided participants with good basic knowledge of Durum wheat, from breeding to production and quality, as well as the milling of Durum into semolina and quality analysis. Industry professionals lectured on all aspects of the equipment and commercial production of pasta from Durum and non-traditional crops. The participants received hands-on experience in the production and quality testing of pasta in NCI's pilot-scale processing and analytical laboratories.

### Tunisian Feed Manufacturing

Tunisia • July 16-20, 2018



In conjunction with the U.S. Grains Council, NCI, along with Iowa State University hosted a group of 15 feed millers for a "train the trainer" course. These individuals were tasked with managing feed milling operations installed in Tunisia with the help of the U.S. Grains Council. The group started with one week of coursework in Iowa, where they covered basic nutritional needs of animals and some feed milling techniques, along with feed mill tours. They traveled to Fargo to spend a week at the NCI feed mill with Dr. Kim Koch to cover in depth feed mill management, and enjoyed visiting a farm in Hillsboro with the help of the ND Corn Growers Association.

The course was sponsored by:

- U.S. Grains Council

### Southeast Asia Contracting for Wheat Value

Indonesia, Philippines, Vietnam • August 8-10, 2018



Quality control and purchasing personnel from South Asia attended the course. At the course, wheat buyers learned how to better manage supply chains and how to write contracts that accurately specify the wheat they want to purchase. The participants learned about wheat quality testing and procurement through lectures and end-product evaluations.

The course was sponsored by:

- U.S. Wheat Associates

## Commodity Soybean Meal Procurement Mgmt. for Importers

Myanmar, Cambodia, China • August 13-17, 2018

Participants from Myanmar, Cambodia, and China arrived at NCI in Fargo to learn about risk management in procuring U.S. soybean meal. We worked with the United States Soybean Export Council and World Initiative for Soy in Human Health to recruit participants for this course. The group started with classroom work in Fargo, and traveled to Minneapolis with a farm tour in Danvers, MN along the way; MN Soybean Research and Promotion Council assisted in arranging this farm tour. In Minneapolis, participants were able to meet with traders to discuss trade relationships, and visit a transloader and container yard to learn more about how the soybean meal gets from the field to their countries. Thanks to the North Dakota Soybean Council, the Minnesota Soybean Research and Promotion Council, and the South Dakota Soybean Research and Promotion Council for sponsoring this course.

The course was sponsored by:

- North Dakota Soybean Council
- Minnesota Soybean Research and Promotion Council
- South Dakota Soybean Research and Promotion Council



## NCI-INTSOY

Ghana, Indonesia, Myanmar, Philippines, Senegal, Sri Lanka, Japan, USA • August 19-25, 2018

NCI brought in many experts from across the grain and food industry to educate participants with a fundamental knowledge on the production and quality of soybeans, and the processing of many different food and feed products made from soy. The team assembled in Minneapolis for an opening reception, and toured Buhler's plant in Plymouth and Gillespie Farms near Johnson, MN on their way to Fargo for one day of lectures and laboratory demonstrations before traveling to South Dakota State University for additional lectures and demonstrations related to the food and feed uses of soy, including Prairie Aquatech's pilot-scale feed processing plant and fish farm. The team traveled to Mankato to visit the CHS soybean crush plant, followed by the graduation dinner with producers and staff with the Minnesota Soybean Research and Promotion Council. The team also visited the Central Farm Service shuttle-train loading facility in Randolph, MN before the conclusion of the course in Minneapolis.

The course was sponsored by:

- American Soybean Association (WISHH Program)
- Minnesota Soybean Research and Promotion Council
- North Dakota Soybean Council
- Northern Food Grade Soybean Association
- U.S. Soybean Export Council



## Grain Procurement Management for Importers

UAE, Algeria, Costa Rica, Italy, Japan, Morocco, Netherlands, Panama, Philippines, Spain, USA • September 10-19, 2018

This year's course was a wonderful opportunity to bring together 19 people from 11 countries to learn about the production, quality, storage and handling of grains produced in the four-state region that NCI represents. Professors from NDSU Department of Agribusiness and Applied Economics and industry consultants covered topics related to grain procurement and risk management, including hedging, futures, and options. Industry experts gave presentations on rail transportation, grain sampling and inspection, as well as the economic opportunities caused by weather. NCI led the class on tours at Hunter Grain Cooperative; Richtsmeier Farm (near Hunter, ND), Alton Grain Terminal Elevator, CHS Terminal Elevator in Superior, WI, and the CHS Barge Loading Facility in Savage, MN. The participants met with the Duluth Seaway Port Authority, and nine representatives of the grain trade at the Minneapolis Grain Exchange in Minneapolis. The team also enjoyed time at Itasca State Park (MN) and a charter-boat tour of the Duluth Harbor.

The course was sponsored by:

- U.S. Wheat Associates
- U.S. Grains Council



## Educational Courses

### Soy Feed Course

Nigeria, Cambodia • September 24-28, 2018



In conjunction with the World Initiative for Soy in Human Health sector of the American Soybean Association, NCI hosted eight participants from Nigeria and Cambodia to come to the Midwest and learn more about how soybean products can be used in livestock feeds. The group had some risk management and economics coursework at NCI, and then spent a few days at the feed mill with Dr. Kim Koch for some hands-on training. The group then traveled to Brookings, SD to tour their hog facility and discuss swine nutrition, they also delved in to aquaculture feeds and toured Prairie Aquatech to learn more about their process and soy product. The group then traveled to Minneapolis, with a stop in New Ulm to hear from a poultry nutritionist and a farm tour in Brownton, MN arranged by MN Soybean Research and Promotion Council. In Minneapolis, the group met with traders to discuss trade relationships, and toured the International Feed and Grain container loading facility to see how the product reaches their country.

The course was sponsored by:

- World Initiative for Soy in Human Health, American Soybean Association

### Barley & Malt Quality: Field to Brewhouse Perspective

USA • October 1-4, 2018



This year's course was held at NCI. NDSU Plant Sciences and the Institute of Barley and Malt Sciences coordinated the course. There were lectures, discussion sessions and laboratory demonstrations that provided participants with knowledge to understand malt processing and to effectively interpret barley and malt analysis.

### Food Grade Soybean Procurement Management for Importers

South Korea, Thailand, Myanmar, China, India • October 8-12, 2018



Northern Food Grade Soybean Association sponsored a Food Grade Soybean Procurement course for eight participants at NCI this fall. The participants spent most of their time learning about risk management practices, and were able to meet with food grade soybean suppliers to discuss issues that are important to both suppliers and buyers. The participants also got to tour a food grade soybean processing facility, see a demonstration on how to make soymilk, and tour American grocery stores to see what food grade soy products are available to American consumers. Finally, both suppliers and buyers of food grade soybeans presented information about their companies to help foster future trade relationships.

The course was sponsored by:

- North Dakota Soybean Council
- Minnesota Soybean Research and Promotion Council
- Northern Food Grade Soybean Association

## Barley to Beer

USA • November 14, 2018

NCI hosted an inaugural course showing farmers and people involved in various sectors of the barley industry how barley becomes beer. The group learned some basics about barley and malt production, and spent the better part of a day with a local brewer learning about the brewing industry. This course facilitated thought-provoking and productive conversations between people from all segments of the barley industry – from farmers, to elevator personnel, to industry people charged with producing beer as the end product for consumption.

The course was sponsored by:

- MN Barley
- MT Wheat and Barley
- ND Barley Council



## Wheat to Bread

USA • November 15, 2018

With the help of many commodity groups in the four state region (MN Barley, MT Wheat and Barley, ND Barley Council, MN Wheat, ND Wheat Commission, and SD Wheat), NCI hosted an inaugural set of courses showing farmers and people involved in the agriculture industry how the commodity they work with becomes a consumable – in this case, how barley becomes beer and how wheat becomes bread. The barley to beer group learned some basics about barley and malt production, and spent the better part of a day with a local brewer learning about the brewing industry. The wheat to bread group discussed wheat production basics, and spent the rest of their day working with several bakers both from industry and NCI to learn the basics of bread making and dough quality. These courses facilitated thought-provoking and productive conversations between people from all segments of their industries – from farmers, to elevator personnel, to industry people charged with producing an end product for consumption.

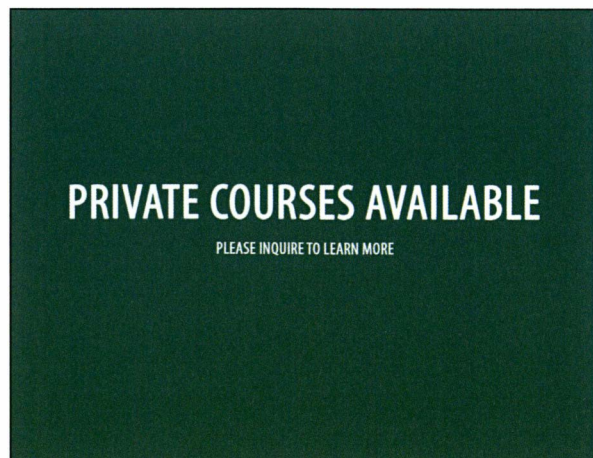
The course was sponsored by:

- MN Wheat
- MT Wheat and Barley
- ND Wheat Commission
- SD Wheat



## Private Courses

In addition to doing technical services, NCI hosts privately sponsored courses for companies and individuals that want to gain both the technical and scientific knowledge and the hands on processing experience. The courses can be customized to fit the needs and desires of the customers for as few as one or two people, and as many as forty. For cost of these programs, please reach out to NCI staff.



## Global Marketing

Algeria...Cambodia...Canada...China

Costa Rica...Ecuador...Ghana

India...Indonesia...Italy...Japan

Morocco...Myanmar...Netherlands...Nigeria

### Buyers from 27 Nations Educated by NCI in 2018

Panama...Philippines...Senegal...Singapore

South Korea...Spain...Sri Lanka...Thailand

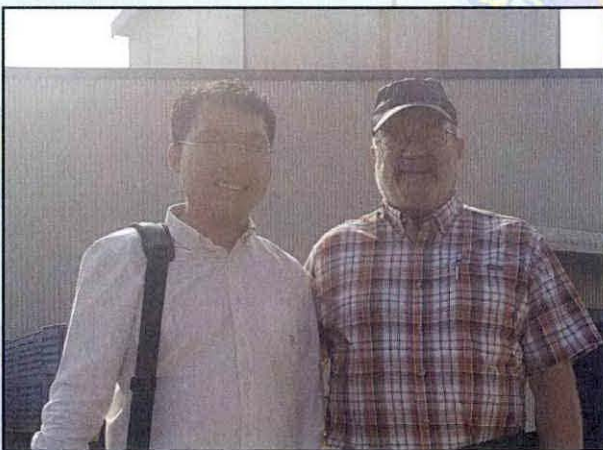
Tunisia...United Arab Emirates...

United States of America...Vietnam



### Prior Lake, MN USA | March 5-7

MN Grain and Feed held a Preventive Controls for Animal Food Safety, PCQI, course. Feed Production Center Manager Kim Koch, David Fairfield of National Grain and Feed Association (NGFA), and Doug Mancini of the MN Dept. Ag, were the instructors.



### Cambodia | April 2-11

Feed Production Center Manager Kim Koch attended the International Food Technology Program in Cambodia. The event was sponsored by World Initiative for Soy in Human Health (WISHH) which is a subsidiary of the U.S. Soybean Export Council (USSEC) as they branch out into animal food production. He had meetings with representatives of five animal food companies, visited three production sites and delivered a two day seminar to Agri-Master Ltd., the largest animal food producer in Cambodia.



### China | April 12-14

Food Scientist, Zhisheng (Zach) Liu, attended the China International Soyfood Processing Technology and Equipment Exhibition. NCI had an exhibit during the meeting. Zach was also invited by the North Dakota Trade Office to deliver a presentation titled "Introduction of North Dakota IP Soybeans" to attendees.





## 2018 AOCs Annual Meeting & Expo

May 6-9

Minneapolis, Minnesota, USA



### Hutchinson, MN USA | April 28

Feed Production Center Manager Kim Koch, attended a one day seminar sponsored by Form-A-Feed for their personnel to share with them the latest developments in pelleting equipment, production techniques, and to allow them to ask questions. He and Alan Vering of California Pellet Mill were the presenters.

### Minneapolis, MN USA | May 6-9

Neil, Zach and Kim attended the American Association of Oil Chemists Annual Meeting & Expo. The expo is a premier international science and business forum on fats, oils, surfactants, proteins and related materials. It was also a good opportunity to learn and connect with other professionals in industry and academia.



### Cambodia, Myanmar | June 11-23

Food Scientist, Zhisheng (Zach) Liu, was invited by ASA WISHH to take a trip to Cambodia and Myanmar. This trip was funded by the North Dakota Soybean Council. During the trip, Zach visited 8 soy foods companies in three cities. These companies received US food grade soybean samples and are interested in buying US soybeans because of quality and price. Through each technical problem/question Zach always validated the necessity of using/purchasing US food grade identity preserved soybeans.



### Ecuador, Chili | June 29

Northern Crops Institute welcomed trade teams from Ecuador and Chili. The North Dakota Wheat Commission hosted the team.

# Global Marketing



## Ames, IA USA | July 9-20

Feed Production Center Manager Kim Koch attended a program that was sponsored by U.S. Grains Council (USGC) using funding from a USDA grant to prepare a group of Tunisia feed industry professionals to become instructors in the "new" feed technology training center that is being created in Tunis. The program was split between Iowa State University and Northern Crops Institute; with ISU doing theory of feed technology and NCI doing practical application using the NCI feed center for "hands-on" training.



## Mexico | July 10

Northern Crops Institute welcomed the trade team from Mexico. The North Dakota Barley Council hosted the team.



## Las Vegas, NV USA | July 13-18

Food Scientist, Zhisheng (Zach) Liu, attended the IFT Annual Meeting & Expo. This event showcases products like food ingredients, equipment, processing, and packaging suppliers etc. in the food & beverage industry. It was a good opportunity to learn and connect with other professionals in industry and academia.



## Japan | July 27

Northern Crops Institute welcomed the trade team from Japan. The North Dakota Wheat Commission hosted the team.



### Kansas City, MO USA | August 28-30

Neil, Zach and Brian attended the 2018 U.S. Soy Global Trade Exchange & Midwest Specialty Grains Conference & Tradeshow. NCI was an exhibitor at the Expo, allowing us to make new connections and re-connect with many of the key people in the various industries. Of special note, the team of ten Indonesian participants of the NCI-INTSOY course also attended the GTE, and NCI held an award ceremony to mark their completion of a two-week collaborative program by NCI and Midwest Shippers Association that was sponsored by the USDA-Cochran Fellowship program (August 19-25).



### New Ulm, MN USA | September 24-29

Feed Production Center Manager Kim Koch, presented at a WISHH/USSEC animal food technology and nutrition program with participants from Cambodia and West Africa. Participants did "hands-on" exercises using the NCI feed center and traveled to SDSU for presentations on swine and aquaculture nutrition and a visit to Prairie Aquatech and poultry nutrition in New Ulm, MN.



### Philippines, Vietnam | Aug 31-Sept 9

Feed Production Center Manager Kim Koch, presented on the current status of animal food manufacturing processes and trends (including the production and use of "fullfat" soybean meal) at a Feed Technology and Nutrition program in Manila, Tagbilaran and Ho Chi Minh.



### St. Louis, MO USA | October 12-18

Natsuki Barber, Food Scientist, assisted the US Dry Bean Council to put together a roasting and frying bean snack course along with Buhler Inc. and Heat and Control. 24 participants from Southeast Asia learned how to make roasted and fried snacks with the US dry beans.

## Global Marketing



### Indonesia | October 18-19

Director Mark Jirik attended the International Conference on Science, Technology, and Humanities hosted by Udayana University in Badung, Bali, Indonesia. The focus of the conference was on global partnerships for advancing innovation. His presentation was focused on the collaboration done at NCI in both showing the value of the commodities grown in northern region of the US, as well as helping educate global consumers in how they can use those commodities to improve lives around the world.



### England | October 21-23

Kim, Natsuki and Rachael attended the Cereal and Grains Association meeting. Kim presented on the importance of cereal and grains in animal nutrition (pet and food animal) and a "crystal ball" look at how the demand for animal food products (meat, milk and eggs) will continue to grow and how cereal and grains production must increase to meet the challenge. He is also the chair of the Scientific Advisory Committee which helps guide association planning.



### Minneapolis, MN USA | Oct 22-24

Program Manager, Jena Bjertness, attended the U.S. Grains Council's Global Trade Exchange in Minneapolis. This event provided an opportunity for global customers to network with suppliers, and for trade relationships to be established. Current U.S. trade policies were addressed in detail, along with issues facing the various corn and coarse grains markets.



### Tampa, FL USA | Oct 31 - Nov 2

Mark Jirik and Brian Sorenson attended the USW/NAWG Joint Fall Meeting, in Tampa, Florida. Jirik gave a presentation to the USWA Grain Quality Subcommittee, updating them on the personnel changes and NCI's commitment to wheat-based educational programs.



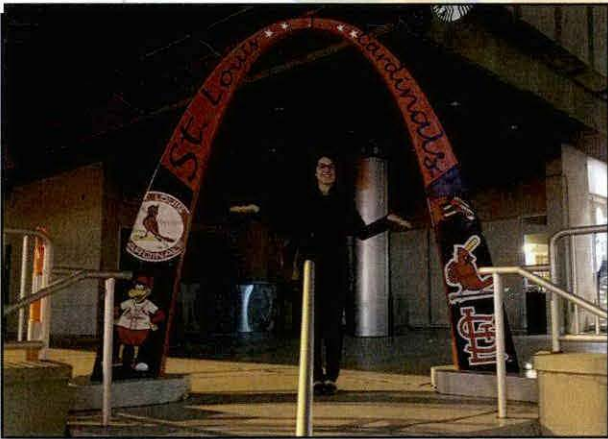
**Taiwan, China, Japan | Nov 12-20**

Program Manager, Brian Sorenson, participated in the 2018 USW Crop Quality Seminars in Taiwan, China and Japan in November, presenting the quality data on the 2018 Hard Red Spring wheat crop to grain buyers, millers, bakers and government officials. Greg Svenningsen, representing the North Dakota Wheat Commission on the Northern Crops Council, also participated in the USW CQ Tour, with a presentation highlighting his family farm and passion for producing wheat.



**Brazil | Nov 30 - Dec 7**

Feed Production Center Manager Kim Koch, presented at a Preventive Controls for Animal Food course, delivered for Inter-American Institute for Cooperation on Agriculture (IICA) in Campinas, Brazil. This was a three day PCQI course followed by a two day Lead Instructor course for those who qualified.



**St. Louis, MO USA | December 4-6**

Program Managers Brian Sorenson and Jena Bjertness attended meetings for the various national soy groups: United States Soybean Export Council (USSEC), American Soybean Association (ASA), and United Soybean Board (USB). These meetings highlighted the missions and areas of concentration for the groups in the coming year, and progress that has been made on the missions of the past year. Areas of concentration included soy foods and oils, soybean meal, and sustainability for the future.

**NCI Product and Process Development**

NCI's technical staff has worked with food processors and ingredient suppliers, large to small, established to start-up from all over the globe.

Our technical staff has experience in extrusion, post-extrusion, pasta manufacturing, milling and baking. We can assist in developing fresh/pre-cooked/frozen pasta, noodles, couscous, expanded snacks, texturized foods, imitation extruded foods, ready-to-eat cereals (expanded and flaked), expanded snack foods, and industrial products from food grade materials.

**We offer:**

- Cost effective service fees
- Confidentiality
- Complete services, including purchase of ingredients (specialty ingredients are supplied by client — other ingredients provided at cost)
- Laboratory for proprietary use (upon approval).

For more information about our technical services, go to: <http://bit.ly/NCIProductDevelopment>

Att 2 1-11-19  
HB 1020



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2018 Annual Update

### *Offering Technical Services and Educational Opportunities*

#### **Educational Courses:**

- Value-enhanced uses
- Grain standards and inspection
- Procurement, risk management
- Quality, processing and milling
- Extrusion technology
- Pasta processing
- Feed milling and manufacturing
- Customized seminars
- Soyfoods

#### **Technical Services:**

- Pilot-Scale Processing
- Milling
- Baking
- Pasta processing
- Oilseed cold pressing
- Extrusion
- Post-extrusion
- Feed
- Industrial

#### **NCI Provides:**

- Skilled staff
- Up-to-date information
- Fully-equipped labs
- Hands-on experience
- Extrusion
- Confidential environment
- Network of resources

#### **NCI Staff**

Mark Jirik, director  
 Brian Sorenson, program manager  
 Jena Bjertness, program manager  
 Grant Christian, communications & marketing manager  
 Janel Brooks, account technician  
 Neil C. Doty, Ph.D., technical director (consultant)  
 Kim Koch, Ph.D., feed production center manager  
 Natsuki Barber, food scientist  
 Rachel Carlson, food technologist  
 Rilie Morgan, process project manager  
 Zhisheng (Zach) Liu, Ph.D., CFS, food scientist  
 Vanessa Johansen, processing technologist

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 This publication will be made available in alternative formats for people with disabilities upon request, 701-231-6538.

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HB 1020  
1/11/19

## Upper Great Plains Transportation Institute 2019-2021 Budget Request

Presented to  
the Education and Environment Division  
of the House Appropriations Committee  
by Denver Tolliver, Director

NDSU UPPER GREAT PLAINS  
TRANSPORTATION INSTITUTE

UGPTI

### Contents

- Major components comprising the "base level" amounts of UGPTI's budget
- Proposed budget reductions identified to meet the Governor's 95% budget request guideline
- 2019-21 budget changes recommended by the Governor to the "base level"
- Any known or potential changes in the level of federal funding to be received by UGPTI
- SBHE and Advisory Council recommendations
  - Restoration of cut in Executive Recommendation
  - Optional requests

NDSU UPPER GREAT PLAINS  
TRANSPORTATION INSTITUTE

## UGPTI's 2017-2019 Base Level Budget

Line	Item	Amount	Percent
1.	General funds	\$3,443,174	15.5%
2.	Special funds	\$6,338,850	28.5%
3.	Federal funds	\$12,478,218	56.0%
4.	<b>All funding sources</b>	<b>\$22,260,242</b>	<b>100.0%</b>

pg:3

NDSU UPPER GREAT PLAINS  
 TRANSPORTATION INSTITUTE

## Executive Recommendation: 2019-21 General Fund

Line	Item	Amount
1.	General fund appropriation 2017-2019	\$3,543,174
2.	One-time (asset management) funds	(\$100,000)
3.	Base level general fund appropriation	\$3,443,174
4.	5% reduction under budget limit	(\$172,159)
5.	Adjusted budget base	\$3,271,015
6.	Compensation package	\$193,185
7.	<b>2019-21 Exec. Recommendation</b>	<b>\$3,464,200</b>

pg:4

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### Executive Recommendation Special Funds

Line	Item	Amount
1.	2017-2019 appropriation	\$6,338,850
2.	Removal of one-time appropriation	(\$200,000)
3.	Special funds base level	\$6,138,850
4.	10% reduction in special funds	(\$613,885)
5.	Adjusted base level: special funds	\$5,524,965
6.	Restoration of 10% cut	\$6,138,850
7.	Compensation package	\$32,752
8.	<b>2019-2021 Exec. Recommendation</b>	<b>\$6,171,602</b>

### Executive Recommendation by Funding Source

Line	Item	Amount
1.	General funds	\$3,464,200
2.	Special funds	\$6,171,602
3.	Federal funds	\$12,785,620
4.	<b>All funding sources</b>	<b>\$22,421,422</b>

## Recommendation from SBHE and UGPTI Advisory Council for General Fund Budget

Line	Item	Amount
1.	Adjusted budget base from Table 2	\$3,271,015
2.	Restoration of 5% cut	\$172,159
3.	Base budget recommendation	\$3,443,174
<b>Optional requests</b>		
4.	County road & bridge planning center	\$975,000
5.	Transformative technologies program	\$500,000
6.	<b>Total budget request</b>	<b>\$4,918,174</b>

## Executive Recommendation for Federal Funds

Line	Item	Amount
1.	2017-2019 appropriation	\$12,478,218
2.	<i>Compensation package</i>	\$307,402
3.	<b>2019-21 Exec. Recommendation</b>	<b>\$12,785,620</b>

## Restoration of 5% Cut in Exec. Recom.

- **Impact:** erode UGPTI's ability to meet demands of state and local agencies and match federal grants
- UGPTI receives many requests from agencies without funds to provide contracts
- Much of the rail/freight analysis supported by GF
- Restoration would allow UGPTI to work with PSC, FRA, and short line railroads
  - Mining/pattern recognition of track inspection data
  - Annual railroad traffic report (all commodities)
  - Critical software upgrades

## Additional Budget Requests

***Recommended by Advisory Council and SBHE***

### **1. County/Local Road & Bridge Planning**

**Center: \$975,000**

- *Biennial Investment Needs Report* [paved roads, unpaved roads, bridges]
- *Road & Bridge Asset Management System*

### **2. Transformative Technologies: \$500,000**

- Automated and connected vehicles
- Effects on transportation planning and operations

## Economic Importance of County and Local Roads

- County & township roads are heavily utilized for
  - Movements from farms to storage/transfer facilities
  - Crude oil movements from wells to pipeline and rail transfer facilities by truck
  - Inputs for oil and ag. production: often delivered by truck to dispersed production sites located off the state highway system
- County and township roads are essential to the state's rural economy

## Benefits of Road Investments

- According to FHWA, average benefit/cost ratio from highway and bridge investment (considering all benefits) > 5.0
- B/C ratio > 2 for resurfacing low volume rural roads
- Broader benefits to the economy are much greater
  - Reduction in total industry logistics costs
  - Multiplier effects from lower input prices

### Effect of Road Condition on Trucking Cost

Road Condition	Present Serviceability Rating (PSR)	Cost Index
Excellent	5	0.91
Good	4	0.93
<b>Fair</b>	<b>3</b>	<b>1.00</b>
Poor	2	1.14
Very Poor	1	1.26

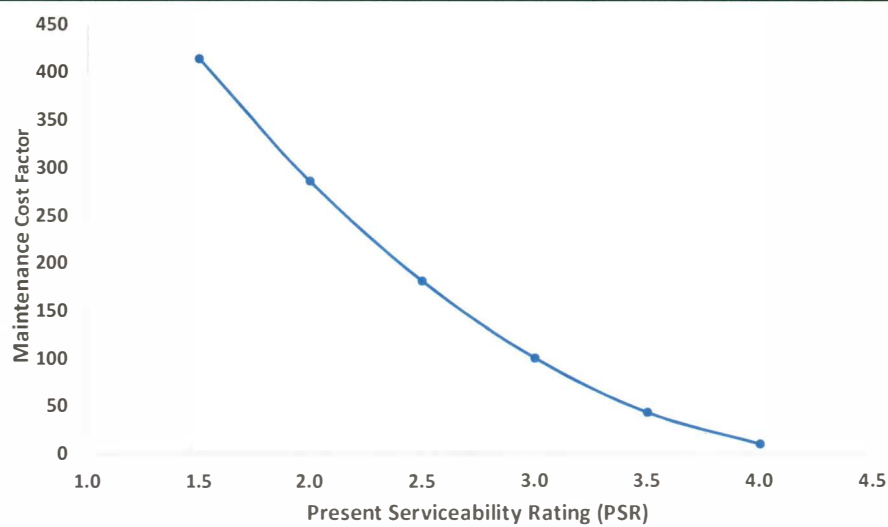
Note: Exclusive of fuel costs.

Source: TRB Special Report 227

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### Effect of Road Condition on Maintenance Cost



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## Impact of Deferring Road Investment

Improvement	Thickness (inches)	PSR Threshold	Cost per Mile (\$000)
Thin Overlay	2	2.5	\$200
Structural Overlay	4	2.0	\$375
Rehabilitation		1.8	\$600-\$1,000
Reconstruction		< 1.8	\$1,250

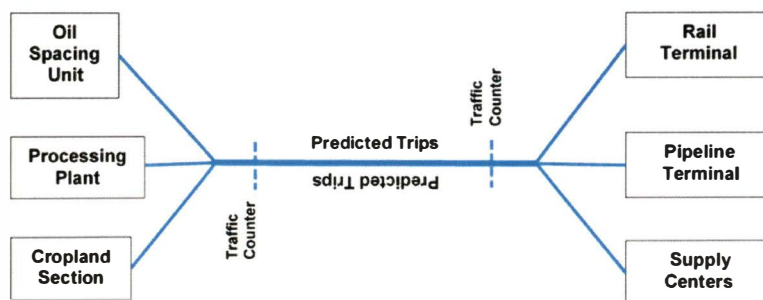
## Biennial Condition/Needs Report

- UGPTI will collect traffic data in partnership with NDDOT > 1,000 locations on county/local roads
- Develop current estimates of surface conditions
- Forecast truck traffic levels from economic activity in the state: specifically
  - Oil, produced water, drilling inputs
  - Crop production
  - Processing/manufacturing
- Inputs used to predict resurfacing, rehabilitation, graveling and other maintenance needs

## History of UGPTI Studies

- In 2012, 2014, and 2016 UGPTI provided the Legislature with reports of needed investments in county, township, tribal roads
- Studies were financed with one-time appropriations
- No funding was provided for a 2017-19 study
- Latest traffic, road condition, and investment needs estimates are three years old

## UGPTI's Traffic Model



Truck trips predicted from and to each oil spacing unit, cropland section, and major processing plant → Predicted trips accumulated for road segments → Predicted trips compared to observed truck volumes on principal road segments → Model is calibrated against observed traffic levels in the base year

## Road Asset Management

- Holistic approach that minimizes long-term cost and makes roads last longer under heavy traffic
- Preserve road condition by applying the best treatment at the proper time
- \$1 spent on maintenance at the right time could save \$4 to \$5 in the future
- Ultimate vision: all counties use same system
  - Generate consistent condition/performance measures
  - Ensure consistency/compatibility across counties
  - Avoid duplication of efforts and minimize cost

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## Level 1 Asset Management Basic Inventory

Length of segment	Road name
Number of lanes	Owner
Roadway width	Classification (e.g., CMC)
Surface type	Geo-coordinates
Shoulder type/width	Public grade crossings
Structures	Traffic control devices

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## Level 2 Asset Management Road Condition and Quality

Paved Surfaces	Aggregate Surfaces
Surface condition	Aggregate class
Structural rating	Gravel depth
Improvements made	Date of last graveling
Improvements dates	Blading frequency
Improvement costs	Cost per mile

## Automation of Data Collection

- Low-cost vehicle sensors
  - Roughness of road approximated by monitoring motion, acceleration, and responses of vehicles as they travel the road each day
  - Continuous updating of ride quality
  - Reduction in data collection costs
- Road images captured from cameras

### Level 3 Asset Management Traffic and Operations

AADT – all vehicles	Speed limit
Truck AADT (by class)	Directional traffic
Weekday ADT	Peak hour factor
Annual ESALs	No passing zones

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### Level 4 Asset Management Decision Tools

Function	Decision Information
Surface selection	Paved versus aggregate surface
Condition forecasting	Deterioration of condition with time and traffic
Remaining life	Remaining ESALs or equivalent truck trips
Preservation treatments	Type and timing of treatment

pg. 24

## Decision Support Tools

- Surface selection (paved vs. aggregate surface)
- Preservation treatment selection
  - Select from improvement types: thin overlay, structural overlay, rehabilitation, shoulder improvements, etc.
  - Maintenance treatments: e.g., chip seal, crack sealing, patching, microsurfacing
  - Unpaved roads: frequencies of blading, graveling, dust control, gravel depth

## Transformative Technologies

- Connected-vehicle technologies
  - Communication among vehicles, infrastructure, traffic centers, roadside facilities
  - Real-time traffic information
- Automated and autonomous vehicles
- Benefits
  - Safety
  - Mobility
  - Efficiency

## Levels of Future Vehicle Automation

1	Automation of acceleration, braking, and vehicle spacing. The driver is responsible for all other aspects of driving.
2	An additional task is automated (e.g., steering). All other driving tasks remain under human control.
3	Vehicles operate fully under automated controls. However, drivers must be ready to intervene to perform certain tasks as requested by the control system.
4	The autonomous driving system continues to function under most conditions even if the driver does not respond to a request to intervene.
5	The fully autonomous (driverless) system functions under all operating conditions without human intervention.

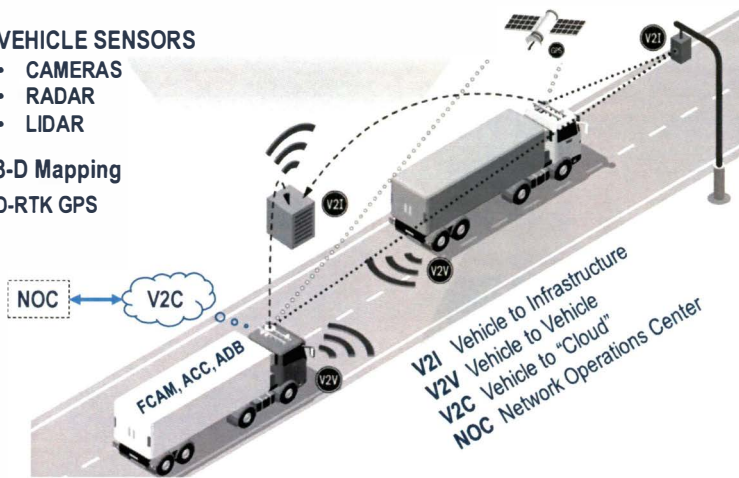
Based on Society of Automotive Engineers Classifications

### Full Range of Technologies in Vehicle Automation

#### VEHICLE SENSORS

- CAMERAS
- RADAR
- LIDAR

3-D Mapping  
 D-RTK GPS

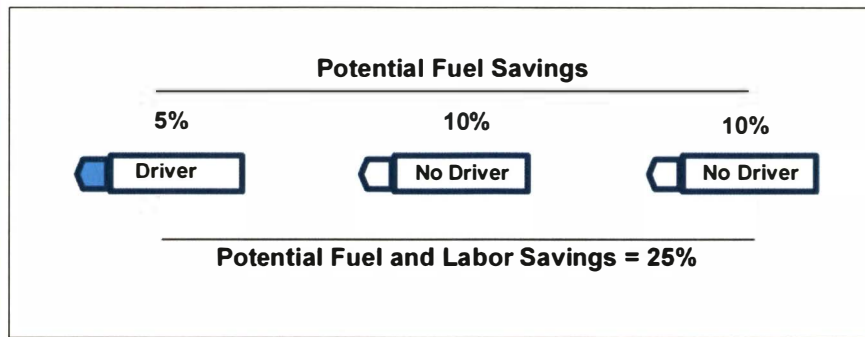


V2I Vehicle to Infrastructure  
 V2V Vehicle to Vehicle  
 V2C Vehicle to "Cloud"  
 NOC Network Operations Center

Adapted from: National Academies of Sciences. NCHRP Web Document 31, 2017

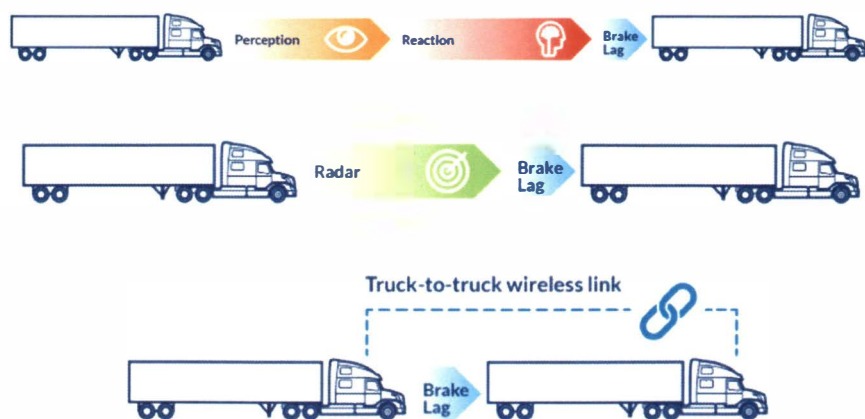
## Truck Platooning

- Potential efficiency gains



- Safety: connected braking (next slide)

## Truck Platooning/Connected Braking



Courtesy of Peloton Technology

## Vision for Technology Program

- **Goals** – harness/channel technologies to achieve growth and prosperity
- **Need** – an **objective entity** is to analyze
  - Benefits of various technologies
  - Potential impacts on transportation planning
- Confidential data repository and analytical center
- Modest amount of state funding can have high leveraging effect
  - OEMs, technology providers, adopters

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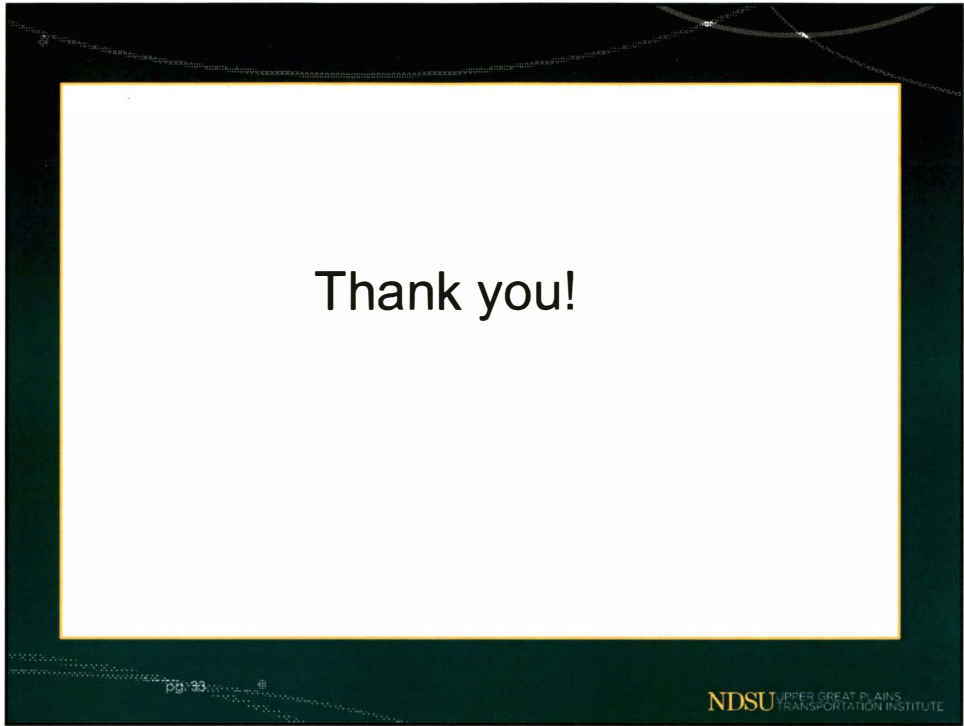
## UGPTI's 2019-21 General Fund Request

Line	Item	Amount*
1	Base level budget	\$3,443,174
2	County road & bridge planning center	\$975,000
3	Transformative technologies program	\$500,000
<b>4</b>	<b>Total general fund budget request</b>	<b>\$4,918,174</b>

\*Exclusive of compensation package

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## LEARNING IS EASY

Go to the Upper Great Plains Transportation Institute website, [www.ugpti.org](http://www.ugpti.org) and click on "Asset Inventory Toolkit" under the "Resources Tab." The direct link is: <http://www.ugpti.org/resources/asset-inventory/>

This page provides links to an overview of the toolkit and how to navigate as well as information on each of the available layers.



## A LOW COST OPTION

There is no cost for local governments in North Dakota as development of GRIT was funded by the North Dakota Legislature.

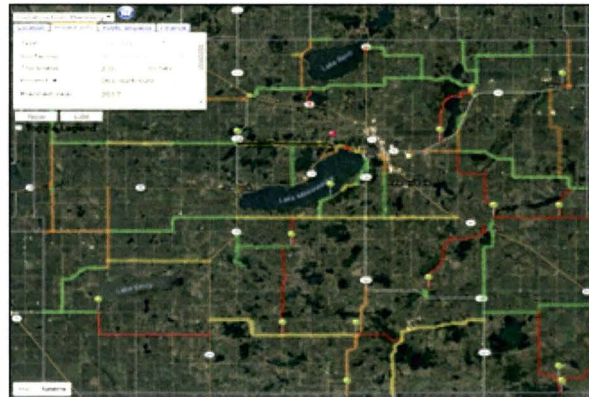
GRIT is currently being expanded to Minnesota, South Dakota, and Montana. The Upper Great Plains Transportation Institute has developed an annual maintenance and support agreement to allow data entry for registered counties.

## FOR MORE INFORMATION CONTACT:

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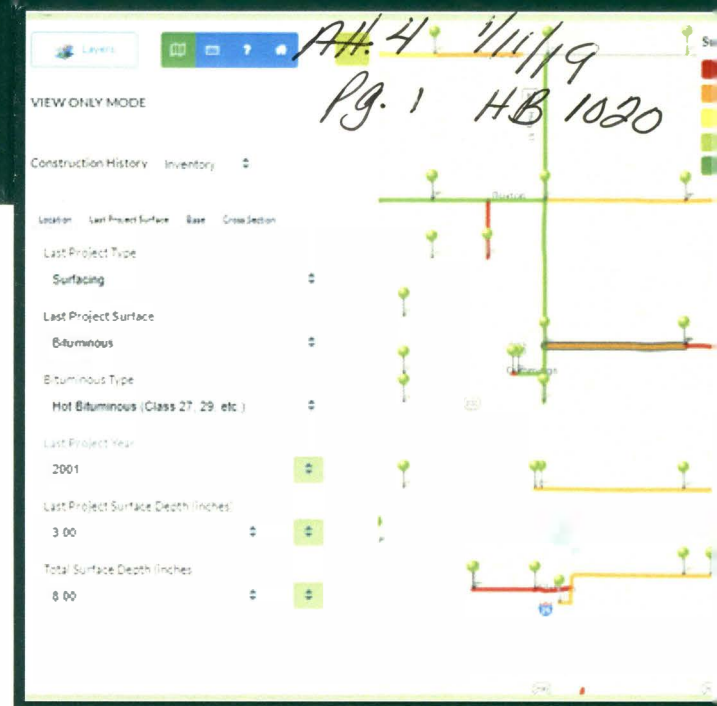
Leanna Emmer, circuit rider with UGPTI's North Dakota Local Technical Assistance program, provides on-site help with GRIT to North Dakota counties.



**NDSU**

UPPER GREAT PLAINS TRANSPORTATION INSTITUTE  
DEPARTMENT OF TRANSPORTATION SUPPORT CENTER

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# GRIT: Geographic Roadway Inventory Tool

An asset inventory tool helping local governments preserve and maintain roads and bridges

Created by the Upper Great Plains Transportation Institute at North Dakota State University

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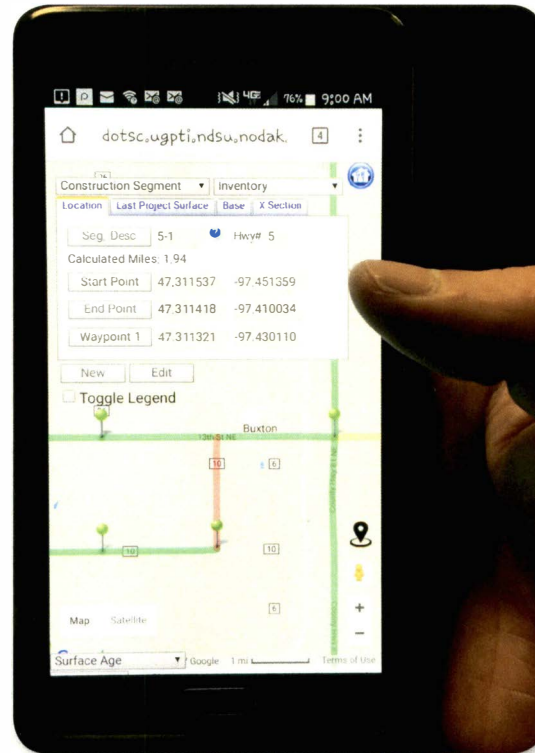


## ASSET MANAGEMENT AT YOUR FINGERTIPS

## KEY INFORMATION LAYERS

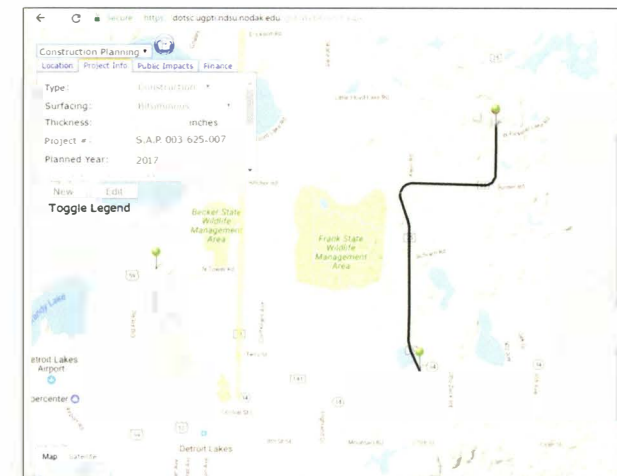
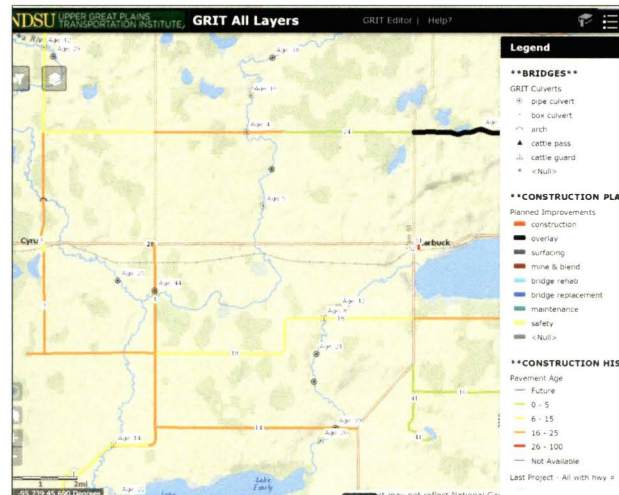
GRIT is a browser-based tool, accessible on laptops, tablets and smartphones. It is easy to use and intuitive, using Google Maps as a familiar base.

- **Easy-to-use software.** Intuitive with simple tools such as snapping and copy attributes. Linear roadway data is easily maintained with just the beginning and ending GPS locations.
- **Map based.** Leverages readily available GPS data and accurate road networks available via Google Maps, greatly simplifying the geographic referencing process and increasing the comprehension and usefulness of data.
- **Web-based interface.** Works on any platform. Seamless to users with minimal training required. Updates to the software is instant for all users.
- **Compatible with other interactive maps.** Works with Web map viewers and GIS services used for reviewing analysis. Compatible with other web map applications such as GIS programs used by counties.
- **Independent data editing by participating counties.** Allows local governments to maintain and use their own data, all within the same application.
- **Data items to support most functions of a typical county highway department.** Includes information to support planning and investment decisions, design recommendations, construction and public impacts information, and maintenance activities on all types of roads.



Currently, four layers are displayed via Google Maps.

- **Construction Project History.** Includes items such as surfacing type, age, pavement depth, cost, base depth and type, subgrade treatment, as well as cross section info such as width, shoulders, inslopes, striping, right of way, etc. The layer also includes maintenance data such as seal coats, crack sealing, gravel blading, graveling, dust control, etc.
- **Minor Structures.** Includes information about culverts and bridges including dimensions, elevations, age, material, condition and restrictions.
- **Construction Planning.** Provides information on current and future construction projects such as the year it will take place, type of project, status, bid date, impacts on traffic, etc.
- **Load Restrictions.** Provides information about year-round and seasonal load restrictions.



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HB 1020 pg 1

**North Dakota State University**  
**Upper Great Plains Transportation Institute**  
**Agency 627**  
**Denver Tolliver, Director**

## **2019-2021 Biennial Budget Request**

**Presented to:**  
**The Education and Environment Division**  
**of the House Appropriations Committee**

**January 11, 2019**

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## INTRODUCTION

Greetings, Chairman Monson and members of the Education and Environment Division of the House Appropriations Committee. My name is Denver Tolliver. I am the director of North Dakota State University's Upper Great Plains Transportation Institute (UGPTI). Thank you for the opportunity to present UGPTI's 2019-2021 budget requests to you today. In Legislative Council's letter (dated December 19, 2018), Chairman Delzer asked me to discuss the following items:

- Any financial audit findings related to the Upper Great Plains Transportation Institute
- The major components making up the "base level" amounts of UGPTI's budget
- A list of proposed budget reductions identified to meet the Governor's 95% budget request guideline
- 2019-21 budget changes recommended by the Governor to the "base level" identifying each increase or decrease with explanations or justifications for each change
- Any known or potential changes in the level of federal funding to be received by UGPTI and how the agency plans to address these changes

The Upper Great Plains Transportation Institute is not the subject of a financial audit and I have nothing to report in this regard. Instead, I will focus my presentation on the remaining items requested by Chairman Delzer. In addition, I would like to introduce two budget requests recommended by the Upper Great Plains Transportation Institute's Advisory Council and the State Board of Higher Education. In addition to this narrative, I will be using slides during my presentation to make effective use of time. The slides will follow the narrative directly.

## 2017-2019 BASE LEVEL BUDGET

The Upper Great Plains Transportation Institute's base level budget is shown in Table 1, by funding source. These values represent UGPTI's current appropriations for the 2017-2019 biennium, minus carry over funds and one-time funding.

Line	Item	Amount	Percentage
1.	General funds	\$3,443,174	15.5%
2.	Special funds	\$6,338,850	28.5%
3.	Federal funds	\$12,478,218	56.0%
4.	All funding sources	\$22,260,242	100.0%

## GENERAL FUND COMPONENT

All of UGPTI's general funds are used for research, technology transfer, training, technical assistance, and other purposes directly related to the agency's mission. These activities comprise UGPTI's *Core Program*. UGPTI's general fund budget is distinct from NDSU's. The agencies' funds are not co-mingled.

UGPTI's research, training, and technical assistance activities that comprise its Core Program provide timely and essential information to state agencies, shippers, businesses, counties, townships, cities, and tribal governments. Some of the agency's leading objectives are to:<sup>1</sup>

- Support urban planning by offering expertise in: a) traffic analysis software (e.g., traffic signal optimization and simulation), b) metropolitan travel demand modeling, and c) automation of traffic data collection
- Improve mobility by providing transit stakeholders, users, providers, suppliers, and agencies with the information and human resources needed to deliver cost-effective services in rural areas and small urban centers
- Enhance the competitiveness of North Dakota producers and businesses through freight transportation, supply chain, and logistics research
- Improve transportation infrastructure management through statewide models of economic production, truck traffic, road/bridge investment analysis, and asset management
- Support Vision Zero through an improved understanding of safety risks and mitigation strategies for rural areas and tribal communities, and through motor carrier safety research
- Enable the transfer of technology and information to state, local, and tribal units of government through technical assistance, training, and workforce development
- Facilitate the deployment of Intelligent Transportation Systems that use sensors, automated controls, and integrated communication systems to inform travelers and improve highway safety and efficiency

### **Importance of General Funds**

Although state general funds comprise a minor percentage of UGPTI's overall budget, they are vital to the agency's success and sustainability. State funds are needed to match federal grants and provide continuity in times of delay or disruption in federal funding. Most federal grants require matching funds, which must consist entirely of non-federal funds or state planning and research dollars. Many of UGPTI's direct grants (such as the University Transportation Center grant) require a 100% match. UGPTI's general funds are the only dependable source of match for these grants.

### **SPECIAL FUND COMPONENT**

Special funds include grants and contracts from state and local agencies and private industry. Most of UGPTI's special funds originate from the North Dakota Department of Transportation (NDDOT) under a strategic agency partnership that has benefited North Dakota for the last four decades. In addition to NDDOT funding, an annual grant from the Wheat Commission has allowed UGPTI to continuously track and report on grain shipments exported from the state over time.

Several of North Dakota's Metropolitan Planning Organizations (MPOs) provide regular (although not necessarily annual) funding to UGPTI for travel demand modeling and technical assistance in urban transportation planning. The remainder of UGPTI's special funds consist of one-time funding from commodity groups, the South Dakota Department of Public Health (for safety studies), the

---

<sup>1</sup> The objectives are not prioritized.

Page 7 Montana Department of Transportation, the Minnesota Department of Transportation, and counties in Minnesota.

While UGPTI receives funds from these organizations to cover the costs of specific studies, UGPTI does not assess fees or operate facilities that generate revenue on a continuous basis. The only fees assessed by UGPTI are those charged for short courses and workshops, which are only intended to reimburse the costs of these events.

## **FEDERAL FUNDS**

More than half of UGPTI's funding comes from federal grants and contracts. The vast majority originates from the U.S. Department of Transportation (U.S. DOT), including grants from the Office of the Secretary, Federal Highway Administration, Federal Transit Administration, Federal Motor Carrier Safety Administration, and the National Highway Traffic and Safety Administration. Some grants (such as the University Transportation Center grant) are provided directly to UGPTI by federal agencies. In other cases, the funds are "federal source funds" provided by third parties through the federal procurement process.

In addition to the U.S. DOT, the U.S. Department of Agriculture provides UGPTI with regular funding for transportation and market reports (typically less than \$50,000 per contract). Periodically, UGPTI receives grants from the U.S. Army Corps of Engineers. However, Corps of Engineers grants are infrequent and less than \$100,000 per award. From a federal funding perspective, UGPTI is almost entirely dependent upon the U.S. Department of Transportation.

Although federal funds are important to UGPTI's budget, they have pre-determined uses. Federal funds must be used to analyze national priorities. They cannot be refocused on state and local issues. Ultimately, UGPTI has limited discretion in determining which critical issues are researched with federal funds, as these objectives are prescribed in law. Federal research funds are not a substitute for state research dollars.

## **BUDGET UNCERTAINTIES**

The Legislature's special and federal funds appropriations enable UGPTI to collect grants and contracts up to the amounts shown in Table 1. These values represent the agency's best projections of the authority needed to procure all funds that may become available during the biennium. These forecasts reflect historic grant levels, applications in progress, and anticipated RFPs.

Most grants are competitive in nature and subject to the budget constraints of the sponsoring agencies. Therefore, UGPTI's federal and special funds appropriations reflect a range of uncertainties. The only hard dollars in UGPTI's budget are the state general funds. Federal and special funds are provided at the discretion of intermediate agencies and are subject to the budget limits experienced by those agencies.

## **2019-2021 EXECUTIVE RECOMMENDATION**

### **GENERAL FUND RECOMMENDATION**

As shown in Line 1 of Table 2, UGPTI's general fund appropriation for the 2017-2019 biennium



Page 8 (exclusive of carry over funds) was \$3,543,174. However, this total included \$100,000 of one-time funds provided by the Legislature for road asset management. The removal of these funds results in the base budget of \$3,443,174 shown in Line 1 of Table 1 and Line 3 of Table 2.

Line	Item	Amount
1.	General fund appropriation 2017-2019	\$3,543,174
2.	One-time (asset management) funds	(\$100,000)
3.	Base level general fund appropriation (Line 1, Table 1)	\$3,443,174
4.	5% reduction under budget limit guidelines	(\$172,159)
5.	Adjusted budget base	\$3,271,015
6.	Compensation package	\$193,185
7.	2019-21 Executive Recommendation	\$3,464,200

The Executive Recommendation calls for a 5% reduction in general funds (Line 4, Table 2). If implemented, this cut would reduce UGPTI's base level appropriation to \$3,271,015 (Line 5, Table 2). As discussed later, the State Board of Higher Education (SBHE) recommended the restoration of this cut. However, the Governor declined UGPTI's request to restore the funds. The addition of the compensation package envisioned by the Governor (shown in Line 6 of Table 2) brings his final Executive Recommendation to \$3,464,200 (Line 7).

### **SPECIAL FUNDS RECOMMENDATION**

As shown in Table 3, UGPTI's 2017-2019 special funds appropriation was \$6,338,850. However, this total included \$200,000 of special fund authority to allow UGPTI to collect non-state funds to match the \$100,000 of general funds provided by the Legislature for the asset management program (Table 2). The removal of this one-time appropriation leaves the adjusted special funds base of \$6,138,850 shown in Line 3 of Table 3.

Line	Item	Amount
1.	2017-2019 appropriation	\$6,338,850
2.	Removal of one-time appropriation	(\$200,000)
3.	Special funds base level	\$6,138,850
4.	10% reduction in special funds appropriation	(\$613,885)
5.	Adjusted base level: special funds appropriation	\$5,524,965
6.	Restoration of 10% cut	\$6,138,850
7.	Compensation package	\$32,752
8.	2019-2021 Executive Recommendation	\$6,171,602

Page 9 The Governor’s guidelines originally called for a 10% cut to the base level shown in Line 3 of Table 3, which would have reduced UGPTI’s special funds appropriation to \$5,524,965 (Line 5, Table 3). However, UGPTI requested the restoration of this cut and the Governor has agreed to restore it (Line 6, Table 3). After adding the portion of the Governor’s compensation package that would be reimbursed from special funds (Line 7, Table 3), his final recommendation for UGPTI’s special funds appropriation for the 2019-2021 biennium comes to \$6,171,602 (Line 8, Table 3).

**FEDERAL FUNDS RECOMMENDATION**

The only recommended change to UGPTI’s federal funds appropriation from the base level shown in Table 1 is the portion of the compensation package to be reimbursed from federal funds (Line 2, Table 4). This adjustment brings the Governor’s recommended appropriation for UGPTI’s federal funds to \$12,785,620 for the 2019-2021 biennium (Line 3, Table 4).

<b>Table 4. Executive Recommendation for UGPTI’s 2019-2021 Federal Funds Appropriation</b>		
<b>Line</b>	<b>Item</b>	<b>Amount</b>
1.	2017-2019 appropriation	\$12,478,218
2.	Compensation package	\$307,402
3.	2019-2021 Executive Recommendation	\$12,785,620

The Executive Recommendation is summarized by funding source in Table 5. As a point of reference, UGPTI’s adjusted base level appropriation heading into the 2017 legislative session was \$3,900,791. UGPTI started the 2015-2017 biennium with a general fund budget of \$4,847,099.

<b>Table 5. Executive Recommendation for UGPTI’s 2019-2021 Appropriations: By Funding Source</b>		
<b>Line</b>	<b>Item</b>	<b>Amount</b>
1.	General funds	\$3,464,200
2.	Special funds	\$6,171,602
3.	Federal funds	\$12,785,620
4.	All funding sources	\$22,421,422

**STATE BOARD OF HIGHER EDUCATION RECOMMENDATION**

Table 6 shows UGPTI’s general fund budget recommendation as approved by the State Board of Higher Education in the summer of 2018. The State Board’s recommendation agrees with that of UGPTI’s Advisory Council, which was adopted in the spring of 2018. In the SBHE’s recommendation, the 5% reduction in funding called for in the Governor’s budget is restored. Consequently, UGPTI’s starting base budget is \$3,443,174 (Line 3, Table 6).

<b>Table 6. General Fund Budget Recommendation from the State Board of Higher Education and UGPTI's Advisory Council</b>		
<b>Line</b>	<b>Item</b>	<b>Amount</b>
1.	Adjusted budget base from Table 2	\$3,271,015
2.	Restoration of 5% cut shown in Table 2	\$172,159
3.	Base budget recommendation	\$3,443,174
<b>Optional requests</b>		
4.	County road & bridge planning center	\$975,000
5.	Transformative technologies program	\$500,000
6.	Total budget request	\$4,918,174

### **RESTORATION OF 5% CUT IN EXECUTIVE RECOMMENDATION**

If implemented, the 5% cut called for in the Executive Recommendation would erode UGPTI's ability to meet the demands of state and local agencies. UGPTI receives many requests for research and technical assistance from agencies that do not have funds in their budgets to provide contracts. In fact, much of UGPTI's rail and freight analysis is supported by general funds. The restoration of these funds to UGPTI's base budget would allow UGPTI to work with the Public Service Commission and Federal Railroad Administration on railroad safety, a critical issue in the state. With the restored funds, UGPTI could develop an annual railroad traffic report featuring major commodities imported to and exported from the state—which would be useful to state agencies, as well as to business and industry groups. In addition, critical software upgrades can be purchased and federal grants matched. For these reasons, UGPTI is requesting that the Education and Environment Division set the agency's base general fund budget at its current level from the 2017-2019 biennium, minus carry over funds and one-time funding (i.e., \$3,443,174).

### **OPTIONAL REQUESTS**

In addition to restoring the 5% cut called for in the Executive Recommendation, UGPTI is requesting the consideration of two proposals of great importance to the state. The first is a request for \$975,000 for a county road and bridge planning center (Line 4, Table 6), which is needed to support commerce and mobility throughout the state. The second request is for \$500,000 in base funding to establish a research program in transformative technologies that will focus on the deployment and impacts of vehicle automation and the utilization of real-time information systems in transportation planning. The two requests are described next.

### **COUNTY ROAD AND BRIDGE PLANNING CENTER**

Movements from farms to initial storage or transfer facilities depend on county and township roads. Much of the crude oil produced in western North Dakota moves from wells to pipeline and rail transfer facilities by truck. Similarly, most of the inputs needed for oil production are delivered by

Page 11 truck to remote production sites located off the state highway system. County and township roads are heavily utilized in many areas of the state and are essential to the state's rural economy.

### BIENNIAL ROAD AND BRIDGE INVESTMENT NEEDS AND CONDITION REPORT

In 2012, 2014, and 2016 the Upper Great Plains Transportation Institute provided the Legislature with reports of needed investments in county, township, and tribal roads. These studies were financed with one-time appropriations. The Legislature did not provide funds for a study in the 2017-2019 biennium. Hence, UGPTI's latest traffic, road condition, and investment needs estimates are three years old. With a dynamic economy, it is important to have up-to-date information and forecasts of road conditions and investment needs when setting priorities and determining funding levels.

If this request is funded, UGPTI will collect traffic data in partnership with the NDDOT at more than 1,000 locations on county and local roads each biennium, develop current estimates of the surface conditions of all paved county and local roads, and forecast truck traffic levels resulting from economic activity in the state. These inputs will be used to predict the resurfacing, rehabilitation, graveling and other maintenance needs of county and local roads throughout the state for the next 20 years.

UGPTI's traffic model is illustrated in Figure 1. Truck trips are predicted from and to each oil spacing unit, cropland section, and major processing plant in the state. The predicted trips generated from each activity are accumulated for individual road segments. The predicted trips are compared to observed truck volumes (derived from UGPTI's traffic counts) on principal road segments. In this way, the model is calibrated against observed traffic levels in the base year. As this relationship suggests, detailed economic modeling and traffic data collection are both necessary on a regular basis to achieve the desired level of accuracy.

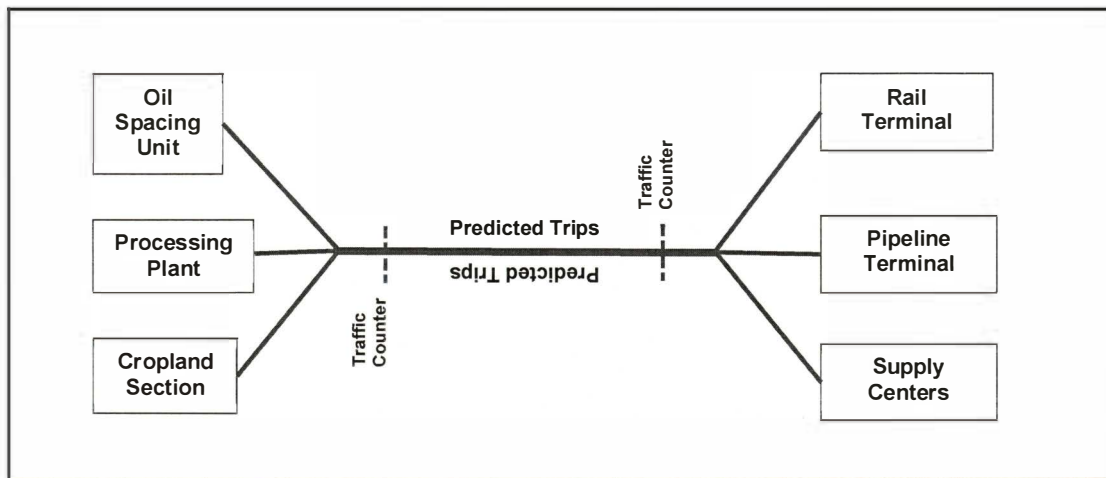


Figure 1. Truck Traffic Counting and Forecasting Process

County bridge replacement and maintenance needs are quantified in a similar manner, using a bridge deterioration model that considers age, traffic, and design factors, as well as typical

Page 12 inspection/maintenance needs. If this request is funded, UGPTI will prepare road and bridge reports for the Legislature and function as a center of expertise (and source of technical information) for counties, townships, and tribal governments. In addition, UGPTI will provide the information needed for legislative proposals such as Operation Prairie Dog.

**Impacts of Road Condition on Freight Costs**

Good roads are vital to North Dakota’s export competitiveness and economic development. Most freight travels the first and last miles in trucks. As shown in Table 7, trucking costs increase by more than 35% when road condition deteriorates from good (a Present Serviceability Rating (PSR) of 4) to very poor (a PSR of 1). These costs ripple throughout the economy, affecting merchandisers and producers.

Table 7. Trucking Cost as a Function of Road Condition		
Road Condition	Present Serviceability Rating (PSR)	Cost Index
Excellent	5	0.91
Good	4	0.93
<b>Fair</b>	<b>3</b>	<b>1.00</b>
Poor	2	1.14
Very Poor	1	1.26
Note: Exclusive of fuel costs.		
Source: National Academies of Sciences. 1990. <i>New Trucks for Greater Productivity and Less Road Wear: An Evaluation of the Turner Proposal – Special Report 227</i> . Washington, DC.		

Trucking costs affect the net prices received by producers. By providing better roads, the Legislature is enhancing the competitiveness of North Dakota producers and increasing their access to markets.

**Benefits of Road Investments**

According to Federal Highway Administration, each dollar spent on roads, highways, and bridges returns more than \$5 in savings on vehicle maintenance and repairs; lower road, highway, and bridge maintenance costs; improved safety; and less fuel consumption and tailpipe emissions.<sup>2</sup> As shown in Figure 2, routine maintenance costs (such as patching and crack sealing) increase by 186% as road condition deteriorates from fair (PSR = 3) to poor (PSR = 2). In a related example, maintenance costs increase by 129% as road condition deteriorates from a PSR of 2.5 (at which time the road should be resurfaced) to a PSR of 1.5, at which point the road must be reconstructed.

As shown in Table 8, deferring improvements ultimately increases capital costs. If a road can be resurfaced at the optimal time (e.g., PSR = 2.5) it can be restored to a smooth, serviceable highway (e.g., PSR ≥ 4.2) at minimal cost (e.g., \$200,000 per mile) with a thin 2-inch overlay. If, however, the improvement is deferred until the PSR drops to 2.0, a thicker overlay (e.g., 4 inches) will be needed at a higher cost (\$375,000 per mile). If the condition of the road deteriorates further (e.g.,

<sup>2</sup> Kahn, M. and D. Levinson. *Fix It First, Expand It Second, Reward It Third: A New Strategy for America’s Highways*. The Brookings Institute, 2011.

Page 13 the PSR drops to 1.8), the existing surface and base layers will be too cracked, rutted, and deformed to provide structural support for an overlay. In this case, the layers must be removed (mined) and blended with new material before being replaced on the subgrade. The minimum cost of such a mine and blend operation is \$600,000 per mile. In some cases, the roadway width may be insufficient for the thicker layers. If so, the road must be widened—in which case, the cost of rehabilitation could be as much as \$1 million per mile. If the PSR drops below 1.8 (e.g., to 1.5), the road must be fully reconstructed from the subgrade up at a cost of \$1.25 million per mile.

As these illustrations suggest, timely road investments pay for themselves. The same is true of UGPTI’s biennial needs and condition studies. By quantifying the near term investments needed, UGPTI’s studies return cost savings far greater than the costs of the studies themselves.

### Road Investment and Condition Monitoring

If the county road and bridge planning center is funded, the Upper Great Plains Transportation Institute will provide the Legislature with objective and consistent estimates of investment needs and measures of effectiveness—e.g., how road conditions are improving or stabilizing over time. With the assistance of counties and the NDDOT, UGPTI will maintain a list of all resurfacing, reconstruction, and surface improvements. Given this information, UGPTI can report effectiveness measures to the Legislature, such as the number of miles improved, trends in road condition, and the freight traffic volume benefitting from the investments.

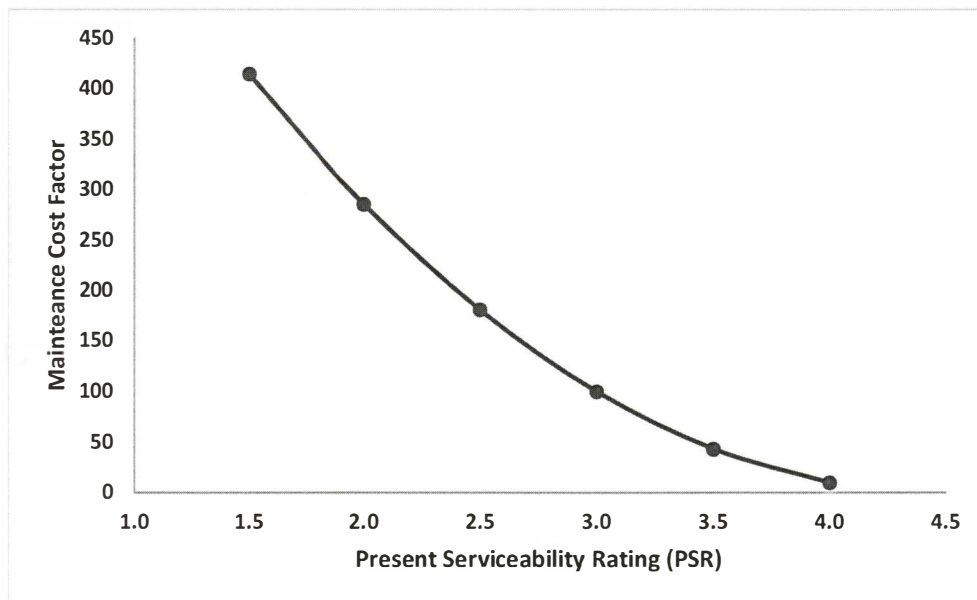


Figure 2 Change in Routine Maintenance Cost with Road Condition<sup>3</sup>

<sup>3</sup> U.S. Department of Transportation. *Highway Economic Requirements System: Technical Report*, 2001, Table 7-10. Original source: Witczak, M. and G. Rada. *Microcomputer Solution of the Project Level PMS Life Cycle Cost Model*, University of Maryland, Department of Civil Engineering, December 1984.

Improvement	Thickness (inches)	PSR Threshold	Cost per Mile (\$000)
Thin Overlay	2	2.5	\$200
Structural Overlay	4	2.0	\$375
Rehabilitation (Mine/Blend)		1.8	\$600-\$1,000
Reconstruction		< 1.8	\$1,250

**ASSET MANAGEMENT PROGRAM**

Capital investments in roads and bridges can be optimized through a timed sequence of preservation and maintenance activities. Without timely maintenance, roads may deteriorate more rapidly than anticipated. According to several studies, \$1 spent on maintenance at the right time (e.g., spending on crack seals, chip seals, and other surface treatments) could save \$4 to \$5 in the future.<sup>4</sup> When properly implemented, asset management can provide better road service for longer periods of time.

**Basic Inventory**

As envisioned, UGPTI’s asset management system will have several levels. The pace of implementation will be determined by the amount of funding available. The first level consists of a comprehensive (up to date) inventory of road and bridge assets. Each major segment of a county road between two junctions is part of this inventory. For each segment, the information shown in Table 9 will be compiled and updated biennially.

Length of segment	Road name
Number of lanes	Owner
Roadway width	Classification (e.g., CMC or local)
Surface type	Geo-coordinates (end points of the segment)
Shoulder type/width	Public grade crossings
Structures (bridges, culverts)	Traffic control devices

If a road segment includes a bridge that is part of the National Bridge Inventory (NBI), a set of attributes will be derived for the structure (e.g., design type, age, and weight limits) using its geo-coordinates. If the bridge’s weight limit is less than 80,000 pounds, smaller trucks must be used on the segment or the payload must be reduced, thus impacting logistical efficiency. In addition to bridges included in the National Bridge Inventory, UGPTI’s asset management system will include information on minor structures – i.e., those that are less than 20 feet in length. The number of minor structures exceeds the number of NBI bridges in North Dakota. An inventory of these smaller structures would allow for better infrastructure management and load-carrying decision making at

<sup>4</sup> Kahn, M. and D. Levinson. *Fix It First, Expand It Second, Reward It Third: A New Strategy for America’s Highways*. The Brookings Institute, 2011.

The attributes of an at-grade railroad crossing on a road segment can be accessed by querying FRA’s Grade Crossing Database, which includes the type of crossing protection and the average number of trains per day at the crossing. Although counties are not responsible for grade crossing improvements or maintenance, the presence of crossings on a segment may affect traffic flow and safety.

A key to ensuring that all inventory items are accurate and up to date is an easy to use tool that allows local road managers to update the information online. This goal has been accomplished with the initial development of the Geographic Roadway Inventory Tool or GRIT. This web tool (which is already operational and in use by most counties in North Dakota) provides the capability to edit and maintain data in a geographical or map-based environment. In addition, GRIT provides online mapping tools that allow road managers and the public to view and understand the information. With GRIT, all the data collected by UGPTI each biennium will be geographically combined with basic inventory data updated by local road managers.

**Road Condition**

In addition to a basic inventory, Level 2 includes essential information about the condition and quality of a road (Table 10). The relevant characteristics may vary with the type of surface (paved versus aggregate). However, for a given surface, the information listed in Table 10 is essential to determining the condition and quality of the road. Ideally, all investments (using federal, state, or local funds) will be reflected in the improvement list.

<b>Table 10. Level 2 of Road Asset Management System – Condition and Quality</b>	
<b>Paved Surfaces</b>	<b>Aggregate Surfaces</b>
Surface condition rating	Aggregate class
Structural rating	Gravel depth
Improvements made	Date of last gravel placement
Dates of improvements	Blading frequency
Costs of improvements	Cost per mile

Substantial progress has been made during the last four years toward a consistent inventory of assets (Level 1) and surface conditions (Level 2). However, further development is necessary. By taking advantage of emergent technologies, many data collection efforts can be automated, thereby reducing the costs of maintaining an up-to-date inventory. A cost-effective method of collecting condition data can be achieved by deploying low-cost sensors in vehicles. With widespread use of these devices, the roughness of a road surface can be approximated by monitoring the motion, acceleration, and responses of vehicles. Once this new technology is deployed, road condition data can be collected each year on all segments in the state, not just on a sample of roads. Moreover, the condition assessments will be consistent from county to county and across segments.



In Level 3, current estimates of traffic, truck factors, and roadway characteristics can be used to develop biennial assessments of the operational characteristics and utilization of roads. The average annual daily traffic (AADT), percent trucks, and distribution of traffic during the week and day are key indicators of traffic conditions and levels of service (Table 11). In addition, the annual equivalent single axle loads (or ESALs) are indicators of the structural demands being placed on roads.

<b>Table 11. Level 3 of Road Asset Management System –Traffic and Operations</b>	
AADT – all vehicles	Speed limit
Truck AADT (by class)	Directional traffic distribution
Weekday average daily traffic	Peak hour factor
Annual ESALs (paved roads)	No passing zones

**Decision Making Tools**

The Surface Selection tool (which has already been developed) provides technical assistance in determining when an unpaved road could be economically paved, based on life-cycle cost comparisons of paved and unpaved roads. A traffic/road condition forecasting model (which will be added in the near future) will allow counties to estimate future rates of road deterioration (based on projected traffic levels) and the timing of future improvement needs. In addition, the development of a gravel road component will provide information about graveling frequency and depth, dust control applications, and other costs (such as blading frequency), which vary with levels of truck traffic (Table 12).

<b>Function</b>	<b>Decision Information</b>
Surface selection	Paved versus aggregate surface
Condition forecasting	Deterioration of condition with time and traffic
Remaining life	Remaining ESALs or equivalent truck trips
Preservation treatments	Type and timing of treatment

In Level 4, improvement selection tools will provide technical information about the many types of improvements that could be considered for a road segment. For paved roads, these options include a range of improvements such as a thin overlay, a structural overlay, rehabilitation, and shoulder improvements; as well as typical maintenance treatments such as crack seals, chip seals, patches, and microsurfacing. For unpaved roads, the improvement selection process will consider various frequencies of blading, graveling, and gravel depth.

**Consistent Comparable Measures**

The ideal situation is for all counties in the state to use the same asset management system, which will generate consistent performance measures and allow UGPTI to develop comparable estimates of investment needs across jurisdictions. If each county develops its own system and measures, the Legislature must compare requests from individual counties based on different assumptions and

Page 17 metrics. If each county develops its own system, large-scale duplications of effort will result. With base-level funding, UGPTI can host an asset management system for the entire state and add functions over time to make it a decision making tool similar to the one used by Federal Highway Administration.

## **TRANSFORMATIVE TECHNOLOGIES RESEARCH PROGRAM**

Transportation (driven by advances in telecommunications and technology) is changing at a dramatic pace. Assisted driving and quasi- and fully-autonomous vehicles are only part of the wave of changes that will impact North Dakota in the future. Robotic freight yards, quasi- and fully-autonomous freight trains and commercial motor vehicles, and truck platooning are emerging realities. Connected vehicle (CV) technologies (in which vehicles communicate with each other and roadway devices) are operational and being tested in several states. In addition to offering great efficiencies and safety benefits, CVs generate massive amounts of data, such as location, speed, and vehicle performance in real time. CVs generate so much data, in fact, that they pose opportunities and challenges in data analysis that have never been experienced. “Big data” will radically change the way transportation planning takes place in the future. “Smart vehicles” and “smart infrastructure” will provide capabilities only dreamed of a few years ago. Vehicle automation (eventually leading to “driverless” vehicles) is a longer-term vision that will be improve safety and provide greater mobility.

In this rapidly changing but opportunistic environment, North Dakota needs an objective entity to provide assessments of the potential benefits and costs of various technologies and their potential impacts on the state. With \$500,000 of base funding, UGPTI can establish itself as a confidential data repository and analytical center where CV data can be confidentially assembled from many sources and harnessed under confidentiality agreements. In addition to benefiting transportation planning in a variety of ways, CV (and other futuristic) technologies will improve safety, reduce congestion and travel time by providing dynamic route information and better trip planning options for travelers, improve freight efficiency and reduce business logistics costs, and optimize the dispatching and routing of emergency vehicles. Harnessing these technologies to achieve the state’s goals is essential for growth and prosperity. Moreover, the requested program will create substantial leveraging opportunities. With a modest commitment from the state, matching and additional funds can be requested from private entities. The requested program will focus primarily on technology deployment and efficiency gains in the trucking sector, which are vital to North Dakota’s economic competitiveness.

## **TECHNOLOGY DEPLOYMENT IN COMMERCIAL TRUCKING**

### **Potential Benefits of Automation**

Driver shortages and turnover rates, crashes due to human factors, and fluctuating fuel prices impact the trucking industry and create logistical uncertainties. In 2017, fuel and driver-related costs comprised 22% and 43% of the marginal trucking cost per mile, respectively.<sup>5</sup> The automation of

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<sup>5</sup> Hooper, A. and D. Murray. *An Analysis of the Operational Costs of Trucking: 2018 Update*, the American Transportation Research Institute, Arlington, Virginia, October 2018.

Page 18 commercial trucking (which will occur in the near future) offers substantial cost savings, as well as safety and environmental benefits. The range of potential benefits include:

1. Reductions in vehicle crashes and crash-related costs, including secondary benefits such as savings on insurance and casualty costs
2. Greater fuel efficiency and an attendant reduction in emissions (as fewer gallons of fuel are consumed per cargo-mile)
3. Increased vehicle productivity
4. Improved driver productivity and satisfaction due to lower stress and fatigue levels
5. Reduced labor costs (in the long run) from full automation of vehicle controls
6. Supply-chain savings stemming from reductions in private trucking costs and enhanced reliability
7. Moderation of congestion, as automated trucks and platoons optimize flows in traffic lanes

All these benefits will not be realized immediately. Nevertheless, significant efficiency and safety improvements are achievable in the short run. Moreover, benefit levels will grow over time.

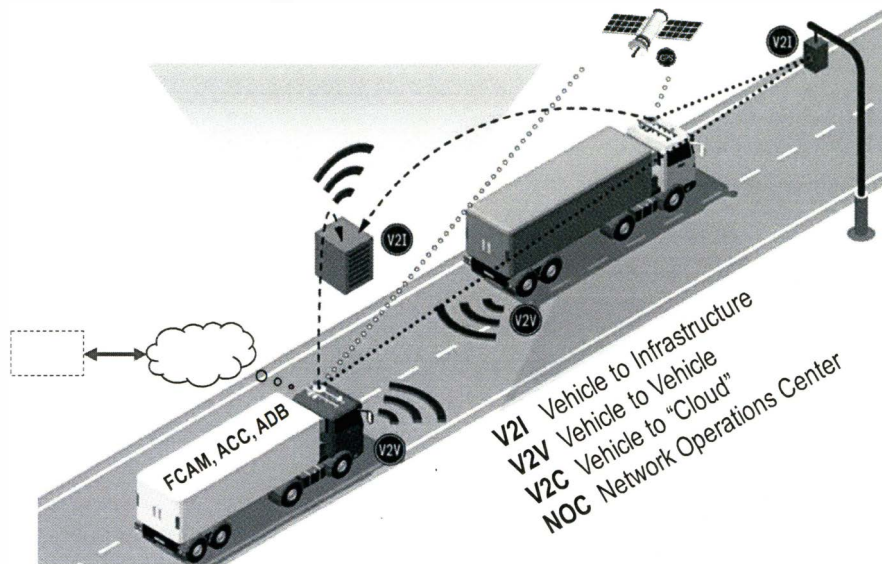
### **Enabling Technologies**

As shown in Figure 3, automation will build on baseline vehicle safety systems that are now available on new trucks (or which will become available in the near future) including: Adaptive Cruise Control (ACC), Forward Collision Avoidance and Mitigation (FCAM), Air Disc Brakes (ADB), and lateral placement technologies (e.g., lane keep assist and lane centering), which have the potential to automate certain driving tasks. In addition to RADAR and LIDAR, video camera systems are vital to automation. They can be used to read signs and roadway striping (thus enabling automated steering under most conditions) and provide warnings of possible collisions with vehicles and pedestrians. When enhanced L5 satellite signals (which will be commercially available within the next few years) are combined with differential real-time kinematic (D-RTK) GPS, centimeter level location accuracy is possible. Dedicated Short-Range Communications (DSRC) enable vehicle-to-vehicle (V2V) communication, which is essential to truck platooning. In addition to V2V communication, vehicles can be connected wirelessly to a Network Operations Center (NOC), which provides updated traffic and road condition data and “beyond the horizon” information. Although vehicle-to-infrastructure (V2I) communication is essential for automation in urban areas, V2I systems are not required for platooning on interstate highways.

### **LEVELS OF FUTURE AUTOMATION**

Levels of vehicle automation are summarized in Table 13. The first level includes driver-assistive truck platooning (DATP), which is currently being implemented in many areas of the United States and European Union. In DATP, drivers are fully engaged in all tasks except the acceleration and braking of vehicles and the spacing of vehicles within platoons.

Full Range of Technologies in Vehicle Automation



Adapted from: National Academies of Sciences. NCHRP Web Document 31, 2017

Figure 3 Automation of Commercial Trucking

Table 13: Levels of Future Vehicle Automation	
Level	Automation/Driver Engagement Levels
1	Automation of acceleration, braking, and vehicle spacing. The driver is responsible for all other aspects of driving.
2	An additional task is automated (e.g., steering). All other driving tasks remain under human control.
3	Vehicles operate fully under automated controls. However, drivers must be ready to intervene to perform certain tasks as requested by the control system.
4	The autonomous driving system continues to function under most conditions even if the driver does not respond to a request to intervene.
5	The fully autonomous (driverless) system functions under all operating conditions without human intervention.
Based on Society of Automotive Engineers Classifications	

At the second level of automation, the driver of the lead vehicle of a platoon may be responsible for steering. However, the lateral placement of trailing vehicles is automated. These drivers can take their feet off the brakes and hands off the steering wheel. However, they must be fully engaged, monitor the surroundings, and be prepared to intervene if necessary. In Level 3, the operation of at least some vehicles in a platoon is fully automated. However, drivers must be ready to intervene to perform certain tasks as requested by the control system. Consequently, drivers must be alert and aware of their surroundings. Nevertheless, the stress and fatigue levels of following drivers can be reduced on lengthy journeys. In Level 4, the operation of all vehicles is fully automated. The trucks

Page 20 in a platoon can operate independently of humans under most circumstances. However, a person may be aboard the lead vehicle to perform non-driving tasks. Even at Level 4, autonomous operations may be prohibited in certain conditions (such as dense fog, icy roads, etc.). When the control system cannot safely navigate or space vehicles, the trucks will be brought to a stop in a failsafe manner. In Level 5, vehicles can operate autonomously under any condition. Nevertheless, automated vehicles should not be dispatched during travel advisories or in no-travel conditions (e.g., blizzards). In Levels 4 and 5, drivers may be aboard, but they are resting or sleeping in the truck's berth.

**Truck Platooning**

In platooning, vehicles can be spaced closer to each other because of automated and connected braking. Optimal spacing reduces aerodynamic resistance and turbulence, resulting in significant fuel savings. In first-generation platooning systems (which are now commercially available), the lead driver will operate in a normal manner and may choose to use Adaptive Cruise Control. Meanwhile, the follower is responsible for steering and retains responsibility to monitor/respond to the surrounding traffic. Substantial fuel savings have been demonstrated for two-truck platoons: 4.5% to 5% for the lead unit and 10% for the trailing unit.<sup>6</sup> Moreover, savings in labor and vehicle maintenance are possible. Truck platooning cost with drivers is expected to be 90% to 95% of traditional trucking cost. However, a quasi-automated three-truck platoon with one driver in the lead cab could reduce trucking costs by more than 25% (Figure 4).<sup>7</sup> In addition to cost savings, driver fatigue can be reduced by platooning because drivers in trailing units can rest part of the time.

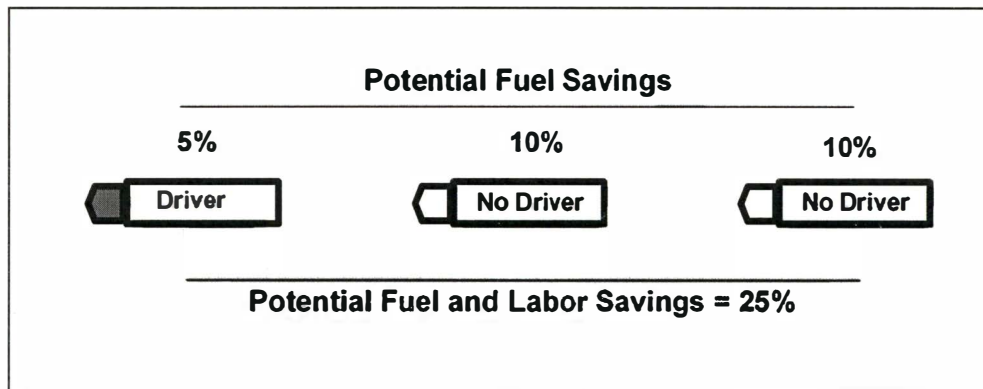


Figure 4 Potential Efficiency Gains from Truck Platooning

**Partially Automated Platoons**

Trucks may be operated autonomously within platoons or as stand-alone vehicles. However, the best fuel economy is achieved in platoons. Moreover, platoons optimize highway capacity better than individual autonomous vehicles. On rural freeways with multiple lanes in each direction, truck platoons in a dedicated lane can achieve maximum throughput. In one futuristic scenario, a platoon

<sup>6</sup> FHWA-Funded Auburn University study: *Heavy Truck Cooperative Adaptive Cruise Control: Evaluation, Testing, and Stakeholder Engagement for Near Term Deployment: Phase Two Final Report*. Available at [http://eng.auburn.edu/~dmbevly/FHWA\\_AU\\_TRUCK\\_EAR/](http://eng.auburn.edu/~dmbevly/FHWA_AU_TRUCK_EAR/)

<sup>7</sup> Ibid.

Page 21 may operate autonomously (or with only a lead driver) between two major interchanges of a rural freeway. However, when the platoon reaches an outlying terminal at the perimeter of a congested city, drivers are placed in the unmanned vehicles for delivery through urban areas. In this arrangement, most truck drivers remain in their home territories near the origins and destinations of the corridor.

**Safety Improvements**

Truck following distances are determined largely by driver perception and reaction times. There is also a braking delay with radar, as the FCAM system in the following vehicle must detect a slowing vehicle in front of it before the brakes can be automatically applied. In comparison, when trucks in a platoon are connected with wireless DSRC, the following truck reacts automatically to the activation of the lead truck’s brakes. In many respects, trucks in platoons will be the safest vehicles on the road.

**CONCLUSION**

Thank you for the opportunity to present the Upper Great Plains Transportation Institute’s 2019-2021 budget requests. UGPTI’s general fund budget request (exclusive of the compensation package) is summarized in Table 14.

<b>Line</b>	<b>Item</b>	<b>Amount</b>
1	Base level budget	\$3,443,174
2	County road & bridge planning center	\$975,000
3	Transformative technologies program	\$500,000
4	Total general fund budget request	\$4,918,174

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**CHAPTER 54-53**  
**UPPER GREAT PLAINS TRANSPORTATION INSTITUTE**

**54-53-01. Upper great plains transportation institute - Establishment.**

There is hereby established an upper great plains transportation institute. Such institute must be administered by and in conjunction with the North Dakota state university of agriculture and applied science. The president and administration of the North Dakota state university of agriculture and applied science are responsible for the selection of personnel for and the administration of the institute.

**54-53-02. Advisory transportation council - Composition.**

1. There is established a transportation council that shall serve in an advisory capacity to the upper great plains transportation institute. The director of the institute shall serve as the executive secretary of the council. The council shall elect its own chairman. The council membership consists of one representative from and appointed by the following:
  - a. The North Dakota chamber of commerce.
  - b. The North Dakota public service commission.
  - c. The North Dakota farmers union.
  - d. The North Dakota grain growers association.
  - e. The North Dakota wheat commission.
  - f. The North Dakota department of commerce.
  - g. The North Dakota grain dealers association.
  - h. The North Dakota motor carriers association.
  - i. The North Dakota aeronautics commission.
  - j. The North Dakota department of transportation.
  - k. The North Dakota department of agriculture.
  - l. The associated general contractors of North Dakota.
  - m. The North Dakota railway industry, appointed by the council.
  - n. The North Dakota primary sector of manufacturing, appointed by the council.
  - o. The North Dakota association of counties.
  - p. The North Dakota league of cities.
  - q. The lignite energy council.
  - r. A North Dakota member of the dakota transit association.
  - s. The North Dakota corn council.
2. Members of the council shall serve without pay, but they may receive reimbursement for actual and necessary expenses incurred in the performance of their duties, if authorized by the director.
3. The council shall consult with the institute in matters of policy affecting the administration of this chapter and in the development of transportation in the state of North Dakota. The council shall meet at the call of the chairman or director or upon the written request of three or more members of the council.

**54-53-03. Purpose - Powers and duties.**

The purpose of the institute must be to conduct and supervise research in the field of transportation and logistics in order to facilitate acquisition of a wider knowledge and understanding of marketing factors associated with the geographical location of the state of North Dakota and the upper great plains in the field of transportation and their influence on the socioeconomic systems of the state, region, and country. Research areas must include the study of commodity and other freight movements into and out of the state in order to better know and understand the various factors affecting the marketing of area products and services. The institute shall make public its findings and conclusions in regard thereto together with any suggested solutions. In the administration of its duties under this chapter, the institute shall consult and coordinate with various governmental and nongovernmental agencies, shipper and

HB 1020 AH 2  
Pg. 1 1/11/19



Contact:  
**Kayla Pulvermacher, Lobbyist**  
[kpulvermacher@ndfu.org](mailto:kpulvermacher@ndfu.org) | 701.952.0104  
**Mary Jensen, Lobbyist**  
[mjensen@ndfu.org](mailto:mjensen@ndfu.org) | 701.952.0107

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Testimony of  
Kayla Pulvermacher,  
North Dakota Farmers Union  
Before the  
House Appropriations Committee on HB 1020  
January 9, 2019

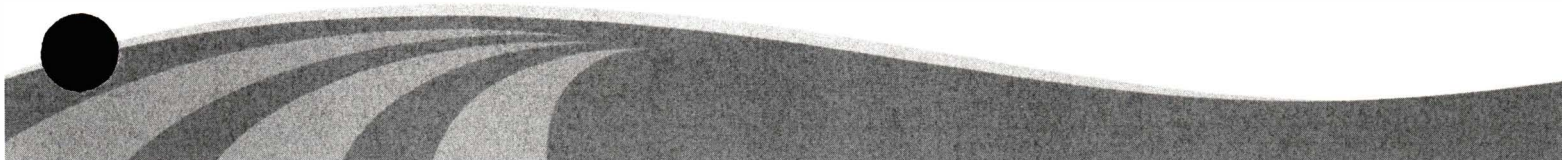
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My name is Kayla Pulvermacher and I'm here representing the members of the North Dakota Farmers Union (NDFU). I'm also a member of the Upper Great Plains Transportation Institute's Advisory Committee. I'm here to support funding for the Institute; specifically, funding for the Biennial Condition/Needs Report, and the Roads Assessment Management System.

The Upper Great Plains Institute (UGPTI) really is a valuable asset that we don't talk nearly enough about. Bring in stakeholders to collectively assess logistical needs and plan for the future? They've done that. Develop one access point to distribute and warehouse training for its members? They've don't that, too. Assess the entire state's needs for county, township, and tribal roads and bridges? UGPTI is the best at it. The dollars the Institute uses for its studies and projects are dollars well spent.

Finally, the need to update the Needs Report is considerable. North Dakota has many roads and bridges that need to be monitored for improvement and keeping track of the cumulative figure helps both local and state leaders attach a price tag to projects. As for the Road Assessment System, this practice is effective for using dollars strategically. The plans developed help roadway managers make key decisions on when and where to invest their limited budget on their roadways.

Thank you for your time. I will address any questions you may have.





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Testimony Prepared for the  
**House Appropriations**

January 11, 2019

By: Linda Svihovec, NDACo Research Analyst



**RE: House Bill 1020 – Upper Great Plains Transportation Institute Budget**

Good morning Chairman Monson and Appropriations Committee members. For the record, my name is Linda Svihovec, Research Analyst with the North Dakota Association of Counties. Thank you for this opportunity to provide testimony in support of the request for additional funding needed to update the Upper Great Plains Transportation Institute’s (UGPTI) 2016 Local Roads Infrastructure Needs Study (Study).

The Institute’s Study is widely used for county planning and budgeting. It is a valuable tool for identifying local road project funding priorities across the state. The objective assessment methods used by the Study provide the level of detailed data necessary when committing large investments for roads impacted by agricultural, manufacturing, and energy industry traffic. It provides a basis for calculating the distribution of county road funds allocated by the North Dakota Legislature and assists county engineers and road superintendents in prioritizing their county road capital improvement plans.

The development and implementation of GRIT (Geographic Roadway Inventory Tool) in the 2016 Study, provides a consistent tool for tracking and reporting county road data. With enhancements, GRIT could become the “go to” road database for all users of that information, including UGPTI, North Dakota Department of Transportation, and the Legislature.

With constant changes in the number, size, and weight of vehicles used for transportation, as well as the loads they carry, the impact and use of local roads are continually changing. The State, for good reasons, encourages counties to develop long-term plans for road maintenance. The Needs Study is the best tool we can ask for to help us meet that goal. Please support the additional funding needed to update the Study.

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**HOUSE APPROPRIATIONS – EDUCATION & ENVIRONMENT COMMITTEE**  
**January 11, 2019 – 10:00 a.m. – Roughrider Room**

**North Dakota Department of Transportation (NDDOT)**  
**Steve Salwei, P.E. – Transportation Programs Director**

**HB 1020**

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Mr. Chairman, members of the committee. I'm Steve Salwei, and I serve as the Transportation Programs Director for the North Dakota Department of Transportation (NDDOT). I'm here today to support the Upper Great Plains Transportation Institute's section of House Bill 1020.

The NDDOT has utilized Upper Great Plains Transportation Institute (UGPTI) as a resource to assist in conducting research and special studies in areas where the Department lacks expertise, such as traffic modeling, preparing needs analysis, determining economic impacts and providing analysis on various transportation related topics. The services UGPTI provides are valuable to the State's Transportation industry.

Mr. Chairman, that concludes my testimony and I will be happy to answer any questions the committee may have.

Att1

HB 1020

1/29/2019

P.1

**EXTRAORDINARY REPAIRS**  
 00640 NDSU Main Research Center  
 Version: 2019R0200640

Description	Funding	2019-21 Request	2019-21 Optional Request	2019-21 Budget Recommendation
2019-21 SBARE Deferred Maintenance Increase	General Fund	0	1,440,465	0
	Federal Funds	0	0	0
	Special Funds	0	0	1,440,465
<b>Total 2019-21 SBARE Deferred Maintenance Increase</b>		<b>0</b>	<b>1,440,465</b>	<b>1,440,465</b>
Building Exterior Repair	General Fund	268,093	0	268,093
	Federal Funds	0	0	0
	Special Funds	0	0	0
<b>Total Building Exterior Repair</b>		<b>268,093</b>	<b>0</b>	<b>268,093</b>
Interior Repair	General Fund	268,093	0	268,093
	Federal Funds	0	0	0
	Special Funds	0	0	0
<b>Total Interior Repair</b>		<b>268,093</b>	<b>0</b>	<b>268,093</b>
Mechanical/Electrical Repair	General Fund	268,093	0	268,093
	Federal Funds	0	0	0
	Special Funds	0	0	0
<b>Total Mechanical/Electrical Repair</b>		<b>268,093</b>	<b>0</b>	<b>268,093</b>
Paving and Area Lighting	General Fund	134,046	0	134,046
	Federal Funds	0	0	0
	Special Funds	0	0	0
<b>Total Paving and Area Lighting</b>		<b>134,046</b>	<b>0</b>	<b>134,046</b>
Structural Repair	General Fund	134,047	0	134,047
	Federal Funds	0	0	0
	Special Funds	0	0	0
<b>Total Structural Repair</b>		<b>134,047</b>	<b>0</b>	<b>134,047</b>
Utilities/Infrastructure	General Fund	268,093	0	268,093
	Federal Funds	0	0	0
	Special Funds	0	0	0
<b>Total Utilities/Infrastructure</b>		<b>268,093</b>	<b>0</b>	<b>268,093</b>
<b>Agency Totals</b>				
	General Fund	1,340,465	1,440,465	1,340,465
	Federal Funds	0	0	0
	Special Funds	0	0	1,440,465
<b>Agency Total</b>		<b>1,340,465</b>	<b>1,440,465</b>	<b>2,780,930</b>

# NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Deferred Maintenance

Projects not requiring legislative authority (but may require an increase to plant improvement funding)

AM2  
HB 1020  
1/29/2019

### Deferred Maintenance Categories

	Health & Safety	ADA	Major Repairs	TOTAL
<b>MAIN STATION</b>				
<u>Dairy Unit:</u>				
Electrical Upgrades	\$ 50,000	\$ -	\$ -	\$ 50,000
Upgrade Manure System	\$ -	\$ -	\$ 150,000	\$ 150,000
Improve Water Drainage Around Barn	\$ -	\$ -	\$ 52,000	\$ 52,000
Bulk Tank replacement	\$ -	\$ -	\$ 55,000	\$ 55,000
Remodel Main Barn	\$ -	\$ -	\$ 225,000	\$ 225,000
Concrete Repair	\$ -	\$ -	\$ 35,000	\$ 35,000
	<u>\$ 50,000</u>	<u>\$ -</u>	<u>\$ 517,000</u>	<u>\$ 567,000</u>
<u>Sheep Unit:</u>				
Egress Window in Residence	\$ 15,000	\$ -	\$ -	\$ 15,000
Upgrade plumbing to waterers	\$ -	\$ -	\$ 40,000	\$ 40,000
Upgrade Manure Handling System ANPC II & III	\$ -	\$ -	\$ 29,000	\$ 29,000
Electrical Upgrades ANPC III	\$ 20,000	\$ -	\$ -	\$ 20,000
	<u>\$ 35,000</u>	<u>\$ -</u>	<u>\$ 69,000</u>	<u>\$ 104,000</u>
<u>Beef Unit:</u>				
Replace Shelter Belt	\$ -	\$ -	\$ 75,000	\$ 75,000
Egress Window in Residence	\$ 15,000	\$ -	\$ -	\$ 15,000
Convert West wing in Beef Barn to Feeding Area	\$ -	\$ -	\$ 12,000	\$ 12,000
Renovate Doors on Calving Barn	\$ -	\$ -	\$ 8,000	\$ 8,000
Run Water line to North Pasture	\$ -	\$ -	\$ 12,000	\$ 12,000
Ventilation Upgrade	\$ 22,500	\$ -	\$ -	\$ 22,500
Renovate Pen Area of Main Barn	\$ -	\$ -	\$ 15,000	\$ 15,000
Concrete Repair	\$ -	\$ -	\$ 24,000	\$ 24,000
Upgrade Feed Bunk line	\$ -	\$ -	\$ 100,000	\$ 100,000
	<u>\$ 37,500</u>	<u>\$ -</u>	<u>\$ 139,000</u>	<u>\$ 283,500</u>
<u>Swine Unit:</u>				
Renovate Rooms in Main Barn	\$ -	\$ -	\$ 120,000	\$ 120,000
Electrical Upgrade	\$ 40,000	\$ -	\$ -	\$ 40,000
Replace Gates & Pens inside Barn	\$ -	\$ -	\$ 12,500	\$ 12,500
Heating & Ventilation Upgrade	\$ 15,600	\$ -	\$ -	\$ 15,600
	<u>\$ 55,600</u>	<u>\$ -</u>	<u>\$ 132,500</u>	<u>\$ 188,100</u>
<u>Farm Shop Unit</u>				
Road Repair	\$ -	\$ -	\$ 20,000	\$ 20,000
Egress window in residence	\$ 15,000	\$ -	\$ -	\$ 15,000
	<u>\$ 15,000</u>	<u>\$ -</u>	<u>\$ 20,000</u>	<u>\$ 35,000</u>
<u>Agronomic Units</u>				
Remodel garage area at Absaraca	\$ -	\$ -	\$ 20,000	\$ 20,000
Concrete Repair & Replacement	\$ -	\$ -	\$ 225,000	\$ 225,000
Road Repair & Replacement	\$ -	\$ -	\$ 75,000	\$ 75,000
Ditch Maintenance	\$ -	\$ -	\$ 20,000	\$ 20,000
Reside & Reroof Pole Barn - Absaraca	\$ -	\$ -	\$ 30,000	\$ 30,000
Reside and reroof 3 sheds 15th ave	\$ -	\$ -	\$ 90,000	\$ 90,000
Improve Drainage Main Station	\$ -	\$ -	\$ 22,500	\$ 22,500
	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 482,500</u>	<u>\$ 482,500</u>
<b>TOTAL MAIN STATION</b>	<b>\$ 193,100</b>	<b>\$ -</b>	<b>\$ 1,360,000</b>	<b>\$ 1,660,100</b>

## RESEARCH EXTENTION CENTERS

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HB1020

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**Deferred Maintenance Categories**

	Health & Safety	ADA	Major Repairs	TOTAL
<b>CARRINGTON Headquarters</b>				
Headquarters Unit				
Sandblasting and painting steel structures			\$ 55,000	\$ 55,000
Renovate Residence At Headquarters Unit	\$ 10,000	\$ -	\$ 60,000	\$ 70,000
Replace Rain on Selected Buildings		\$ -	\$ 5,400	\$ 5,400
Extend Driveway to Laboratory	\$ -	\$ -	\$ 105,000	\$ 105,000
Field Road Repair - Gravel and Grading	\$ -	\$ -	\$ 40,000	\$ 40,000
Miscellaneous Concrete Installations	\$ -	\$ -	\$ 80,000	\$ 80,000
Shelterbelt Renovation		\$ -	\$ 20,000	\$ 20,000
Beef Research Unit				
Remodel Cow Pens	\$ -	\$ -	\$ 50,000	\$ 50,000
Repair And Renovate Livestock Waste-Contaminant Lagoor	\$ 45,000	\$ -	\$ -	\$ 45,000
Renovation of Existing Feedlot Pens		\$ -	\$ 80,000	\$ 80,000
Replace and Expand Feedlot Aprons	\$ -	\$ -	\$ 60,000	\$ 60,000
Repair & Replace Sections of Silage Bunker	\$ -	\$ -	\$ 15,000	\$ 15,000
Repair Pole Barns in Feedlot Facilities	\$ -	\$ -	\$ 35,000	\$ 35,000
Renovate Animal Handling Facility	\$ 20,000	\$ -	\$ 25,000	\$ 45,000
Renovate Drainage and Re-Surface East Feedlot Pens	\$ 80,000	\$ -	\$ 80,000	\$ 160,000
<b>TOTAL CARRINGTON</b>	<b>\$ 155,000</b>	<b>\$ -</b>	<b>\$ 710,400</b>	<b>\$ 865,400</b>
<b>CENTRAL GRASSLANDS</b>				
Clean out Dugouts	\$ -	\$ -	\$ 20,000	\$ 20,000
Pen Repair and updated Fenceline	\$ 40,000	\$ -	\$ -	\$ 40,000
Concrete in Seed Storage Building	\$ -	\$ -	\$ 30,000	\$ 30,000
Fencing Repairs and Replacement	\$ 100,000	\$ -	\$ -	\$ 100,000
Feed Bunk Repair	\$ -	\$ -	\$ 20,000	\$ 20,000
Corrals & Feedlot Fencing Improvement and Repair	\$ 42,000	\$ -	\$ -	\$ 42,000
Dried Distiller Grain Bunks	\$ -	\$ -	\$ 10,000	\$ 10,000
Add Fill to Pens	\$ -	\$ -	\$ 20,000	\$ 20,000
Renovate Medical/Sick Shack in Barn 1	\$ -	\$ -	\$ 25,000	\$ 25,000
Pen floor maintenance (gravel fill)	\$ -	\$ -	\$ 27,000	\$ 27,000
Add well and pump house to support main facility water need	\$ 20,000	\$ -	\$ -	\$ 20,000
Roof Repairs to Office Building	\$ -	\$ -	\$ 50,000	\$ 50,000
Gravel for Repair and Grading of Feed Yards	\$ -	\$ -	\$ 15,000	\$ 15,000
Shelterbelt Renovation	\$ -	\$ -	\$ 10,000	\$ 10,000
Install Permanent Water in Calving/Feeding Barns		\$ -	\$ 25,000	\$ 25,000
Install Permanent Water in Feeding Pens		\$ -	\$ 30,000	\$ 30,000
Corral Replacement on Barkers Pastures	\$ -	\$ -	\$ 35,000	\$ 35,000
Correction of rain water drainage near office basement	\$ -	\$ -	\$ 15,000	\$ 15,000
<b>TOTAL CENTRAL GRASSLANDS</b>	<b>\$ 202,000</b>	<b>\$ -</b>	<b>\$ 332,000</b>	<b>\$ 534,000</b>
<b>DICKINSON</b>				
Residence Exterior Brick Repair and fill Cistern		\$ -	\$ 60,000	\$ 60,000
Replace Windows in Directors Residence	\$ -	\$ -	\$ 40,000	\$ 40,000
Remodel former farrowing barn to sample workspace	\$ -	\$ -	\$ 70,000	\$ 70,000
Section 19 Facility Repair & Upgrade		\$ -	\$ 170,000	\$ 170,000
Fence Repair & Replacement (80 miles)	\$ 100,000	\$ -	\$ 600,000	\$ 700,000
Road Maintenance (30 miles)	\$ 300,000	\$ -	\$ 300,000	\$ 600,000
Residence Upkeep (ranch unit)		\$ -	\$ 15,000	\$ 15,000
Water System Repair		\$ -	\$ 100,000	\$ 100,000
Repair Roof in Arena	\$ -	\$ -	\$ 150,000	\$ 150,000
Seed House Repair & Renovation	\$ 100,000	\$ -	\$ -	\$ 100,000
Machine Shed Repair & Maint. (7ranch & Boegn Quonsets)	\$ -	\$ -	\$ 200,000	\$ 200,000
Small Storage House Repair & Update (Horticulture)	\$ -	\$ -	\$ 20,000	\$ 20,000
Horse Barn Renovation		\$ -	\$ 250,000	\$ 250,000
Shop Building Repair & Renovation (Dickinson)	\$ -	\$ -	\$ 320,000	\$ 320,000
Cattle Shelters Renovation 4 Shelters		\$ -	\$ 180,000	\$ 180,000
Fuel Shed Repair & Update		\$ -	\$ 5,000	\$ 5,000
Hay Shed Repair & Update		\$ -	\$ 100,000	\$ 100,000

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**Deferred Maintenance Categories**

	Health & Safety	ADA	Major Repairs	TOTAL
Residence Upkeep (Director)			100000	100000
<b>TOTAL DICKINSON</b>	<b>\$ 500,000</b>	<b>\$ -</b>	<b>\$ 2,680,000</b>	<b>\$ 3,180,000</b>
Clean duct work in office	\$ 20,000	\$ -	\$ -	\$ 20,000
Re-pave parking lot (sq. ft.) (160x160), Fix and repair paved entrance road to headquarters		\$ -	\$ 200,000	\$ 200,000
<b>Fence</b>		\$ -	\$ -	\$ -
Wire perimeter fence on South side (ft)	\$ 64,000	\$ -	\$ -	\$ 64,000
Metal (ft)	\$ -	\$ -	\$ -	\$ -
Old Barn	\$ 6,750	\$ -	\$ -	\$ 6,750
Old Feedlot	\$ 6,750	\$ -	\$ -	\$ 6,750
SWF perimeter	\$ 8,730	\$ -	\$ -	\$ 8,730
Ewe pens	\$ 45,000	\$ -	\$ -	\$ 45,000
Wire perimeter fence in cattle/sheep (ft)	\$ 26,400	\$ -	\$ -	\$ 26,400
Mechanical System Renovation - Office	\$ -	\$ -	\$ 80,000	\$ 80,000
Replace hopper bottom bins	\$ -	\$ -	\$ 16,000	\$ 16,000
Bunkhouse - recarpet	\$ -	\$ -	\$ 20,000	\$ 20,000
Bunkhouse - seal steel roof (leaks), siding, and sheetrock	\$ -	\$ 40,000	\$ -	\$ 40,000
Director's House - recarpet and paint 2nd floor hallway	\$ -	\$ -	\$ 5,000	\$ 5,000
Director's House upstairs, insulate, sheetrock, and carpet	\$ -	\$ -	\$ 10,000	\$ 10,000
Director's House - replace concrete in front of garage	\$ -	\$ -	\$ 10,000	\$ 10,000
Dairy barn structural repairs	\$ 20,000	\$ -	\$ -	\$ 20,000
Concrete on south half of hay shed	\$ -	\$ -	\$ 25,000	\$ 25,000
Concrete at SW Feeders	\$ -	\$ -	\$ 30,000	\$ 30,000
Landscape in front of office	\$ -	\$ -	\$ 10,000	\$ 10,000
<b>TOTAL HETTINGER</b>	<b>\$ 197,630</b>	<b>\$ -</b>	<b>\$ 406,000</b>	<b>\$ 643,630</b>

HETTINGER

LANGDON

Foundation Repair at Residence		\$ -	\$ 40,000	\$ 40,000
Complete Resident West Porch Renovation	\$ -	\$ -	\$ 2,500	\$ 2,500
Residence Bathroom Remodel	\$ -	\$ -	\$ 15,000	\$ 15,000
Replace sidewalk southwest of residence.	\$ 5,000	\$ -	\$ -	\$ 5,000
Yard and Road Graveling		\$ -	\$ 15,000	\$ 15,000
VSLC Outdoor Light Replace	\$ 5,000	\$ -	\$ -	\$ 5,000
VSLC Landscape Irrigation	\$ -	\$ -	\$ 30,000	\$ 30,000
VSLC Storm Windows/handicap electric entrance	\$ -	\$ -	\$ 40,000	\$ 40,000
VSLC A/V Upgrade		\$ -	\$ 80,000	\$ 80,000
VSLC north/east doors replace	\$ -	\$ -	\$ 10,000	\$ 10,000
VSLC Kitchen floor replace (2)		\$ -	\$ 5,000	\$ 5,000
VSLC Carpet replacement	\$ -	\$ -	\$ 25,000	\$ 25,000
Seal Coat Parking Lot at VSLC & Agronomy Lab		\$ -	\$ 25,000	\$ 25,000
Pesticide Facility Addition		\$ -	\$ 40,000	\$ 40,000
Repair/Replace Staircase in Seed house	\$ 5,000	\$ -	\$ -	\$ 5,000
Machine Storage I Electrical upgrades		\$ -	\$ 7,000	\$ 7,000
Machine Storage I Concrete Repair		\$ -	\$ 25,000	\$ 25,000
Machine Storage I Door Replacement/insulation		\$ -	\$ 25,000	\$ 25,000
Repair/replace large door openers on 5 doors	\$ 5,000	\$ -	\$ -	\$ 5,000
Machine Storage II Repair/Concrete	\$ 5,000	\$ -	\$ -	\$ 5,000
Repair Seed House leaking roof	\$ 10,000	\$ -	\$ -	\$ 10,000
Shelter Belt Renovation		\$ -	\$ 15,000	\$ 15,000
LREC Demonstration Gardens Renovation	\$ -	\$ -	\$ 25,000	\$ 25,000
Reshingle VSLC Roof	\$ -	\$ -	\$ 50,000	\$ 50,000

Att 2  
HB 1020

1/29/19

**Deferred Maintenance Categories**

	Health & Safety	ADA	Major Repairs	TOTAL
Seed Cleaning Plant Dust Control System	\$ 25,000	\$ -	\$ -	\$ 25,000
Seed Cleaning Plant Safety Upgrades	\$ 40,000	\$ -	\$ -	\$ 40,000
Paint Hopper bins and repair safety walks	\$ -	\$ -	\$ 15,000	\$ 15,000
Agronomy Lab Insulation Enhancement	\$ -	\$ -	\$ 25,000	\$ 25,000
Complete agronomy lab landscaping	\$ -	\$ -	\$ 5,000	\$ 5,000
<b>TOTAL LANGDON</b>	<b>\$ 100,000</b>	<b>\$ -</b>	<b>\$ 519,500</b>	<b>\$ 619,500</b>

**NORTH CENTRAL**

Repair/Replace underground electrical service	\$ 150,000	\$ -	\$ -	\$ 150,000
Residence Siding & Window Repair and Replacement	\$ -	\$ -	\$ 75,000	\$ 75,000
Resurface & Repair Parking Lots	\$ -	\$ -	\$ 80,000	\$ 80,000
Repair Storage Shed Roof & Overhead Doors	\$ -	\$ -	\$ 35,000	\$ 35,000
Yard Excavation, Tiling, Shaping & Gravel	\$ -	\$ -	\$ 125,000	\$ 125,000
Field Road Repair	\$ -	\$ -	\$ 40,000	\$ 40,000
Repair/replace Perimeter Fence	\$ -	\$ -	\$ 40,000	\$ 40,000
Connect to City Sanitary System	\$ -	\$ -	\$ 50,000	\$ 50,000
Sandblast & Paint Hopper Bins	\$ -	\$ -	\$ 40,000	\$ 40,000
Renovate Headquarters Building	\$ -	\$ -	\$ 75,000	\$ 75,000
Sandblast & Paint Quonset	\$ -	\$ -	\$ 30,000	\$ 30,000
<b>TOTAL NORTH CENTRAL</b>	<b>\$ 150,000</b>	<b>\$ -</b>	<b>\$ 590,000</b>	<b>\$ 740,000</b>

**WILLISTON**

x Heating/Cooling System Repair and Upgrade-EFC	\$ -	\$ -	\$ 20,000	\$ 20,000
Resurface Asphalt Pavement for Main Roads			\$ 100,000	\$ 100,000
x Gravel Nesson Valley parking, cement sidewalk, asphalt driveway in front of office/apartment buildings	\$ -	\$ -	\$ 45,000	\$ 45,000
x Pave EFC Parking Lots				
East Parking Lot	\$ -	\$ -	\$ 122,000	\$ 122,000
x North Parking Lot	\$ -	\$ -	\$ 68,000	\$ 68,000
West Side Parking Lot	\$ -	\$ -	\$ 50,000	\$ 50,000
x Roof Repair Thrashing Shed	\$ -	\$ -	\$ 12,000	\$ 12,000
x Remodel South Residence	\$ -	\$ -	\$ 42,000	\$ 42,000
x Remodel North Residence	\$ -	\$ -	\$ 45,000	\$ 45,000
x Gravel and Shape Secondary Roads	\$ -	\$ -	\$ 29,000	\$ 29,000
<b>TOTAL WILLISTON</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 533,000</b>	<b>\$ 533,000</b>

**GRAND TOTAL AES DEFERRED MAINTENANCE \$ 1,497,730 \$ - \$ 7,130,900 \$ 8,775,630**

Att 3  
HB 1020

January 7, 2019

1/29/2019

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1020

Page 1, line 3, after "farm" insert "; and to provide an exemption"

Page 4, after line 5, insert:

**"SECTION 3. APPROPRIATION.** There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$750,000, or so much of the sum as may be necessary, to the branch research centers for a seed cleaning plant at the Williston research center, for the biennium beginning July 1, 2019, and ending June 30, 2021. The funding provided in this section is considered a one-time funding item.

**SECTION 4. APPROPRIATION.** There is appropriated out of special funds derived from donations and other income, the sum of \$500,000, or so much of the sum as may be necessary, to the branch research centers for construction of a new greenhouse at the Williston research center, for the biennium beginning July 1, 2019, and ending June 30, 2021. The funding provided in this section is considered a one-time funding item."

Page 5, after line 7, insert:

**"SECTION 11. EXEMPTION.** The \$1,500,000 of special funds appropriated for the Williston research center seed cleaning plant contained in subdivision 5 of section 1 of chapter 45 of the 2017 Session Laws, is not subject to the provisions of section 54-44.1-11, and any unexpended funds from this appropriation are available and may be expended during the biennium beginning July 1, 2019, and ending June 30, 2021."

Renumber accordingly

**STATEMENT OF PURPOSE OF AMENDMENT**

This amendment provides a one-time appropriation of \$750,000 from the general fund for a new seed cleaning plant at the Williston Research Center and a one-time appropriation of \$500,000 from other funds for a new greenhouse at the Williston Research Center. This amendment also allows the Williston Research Center to continue in to the 2019-21 biennium up to \$1.5 million of special funds appropriated by the 2017 Legislative Assembly for a new seed cleaning plant.



Att 1  
WB 1020  
1/29/2019

North Dakota State University  
Upper Great Plains Transportation Institute  
Agency 627  
Denver Tolliver, Director

House Bill 1020

Supplemental Information Concerning the Upper Great Plains  
Transportation Institute's 2019-2021 Biennial Budget Request

Submitted in response to questions from members of the  
Education and Environment Division and information requests  
from Chairman Monson

January 22, 2019

P.1

AH 1

HB 1020

1/29/2019

## HIGHLIGHTS

The Upper Great Plains Transportation Institute's county and local road planning center will provide the North Dakota Legislature with timely information about road conditions and investment needs each biennium, answering two key questions: (1) what levels of road investment are warranted, and (2) where are investments most needed? In its biennial report, UGPTI will estimate road resurfacing, rehabilitation, and reconstruction costs for the next five biennia, by county. As shown in this paper, deferring a resurfacing improvement until rehabilitation is needed increases the capital cost by at least \$400,000 per mile. If a road must be widened, rehabilitation could cost \$1 million dollars per mile or more.

There are roughly 6,000 miles of paved county road in the state. Based on previous UGPTI studies, it is likely that 10% of these miles have Present Serviceability Ratings (PSR values) of less than 2.5. These segments are currently in need of resurfacing. Another 14% of paved county road-miles have PSR values ranging from 2.5 to less than 3.0. Pavements in this category can deteriorate quickly under truck traffic. These percentages could be understated because the latest condition assessment took place in 2016.

If UGPTI's request is funded, current condition assessments and investment needs will be estimated for the entire network each biennium. If, because of timely information, investments in only 500 miles of road with PSR values of less than 3.0 are optimized, UGPTI's requested program will save the state \$200 million to \$400 million in capital costs by avoiding rehabilitation. If investments in only 100 miles of paved county road are optimized, UGPTI's requested program will save the state \$40 million to \$80 million in capital cost each biennium. In this case, UGPTI's program will generate benefits 40 to 80 times greater than the requested \$975,000 in state funds. If just one 5-mile segment of road is identified and improved in a timely manner each biennium so that rehabilitation is avoided, \$2 million to \$4 million will be saved, generating benefits more than twice the program cost.

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## INTRODUCTION

Chairman Monson and members of the Education and Environment Division of the House Appropriations Committee: my name is Denver Tolliver. I am director of North Dakota State University's Upper Great Plains Transportation Institute (UGPTI). During UGPTI's budget hearing (HB 1020) on January 11, 2019, I presented several examples of cost savings that could be generated from optimizing road investments and uniformly implementing asset management in the state. In my presentation, I noted that UGPTI's county and local road planning center would generate cost savings far greater than the \$975,000 of base funding requested for the program. I was asked by the committee to document these efficiencies and demonstrate that the center will pay for itself in savings over time.

The expected benefits are illustrated in this document, which I am asking the committee to accept as an addendum to UGPTI's budget testimony (which was originally provided to the Education and Environment Division on January 11). In order to describe the benefits, it is necessary to introduce some background material on road condition ratings. Although savings in gravel road maintenance may be realized through UGPTI's program, the estimated cost savings presented in this addendum correspond to paved county roads.

## COSTS OF DELAYED INVESTMENTS IN COUNTY AND LOCAL ROADS

### Road Condition Rating

One of the indices used to measure the condition and quality of paved roads is the Present Serviceability Rating (PSR). As shown in Table 1, this index theoretically ranges from 0.0 to 5.0. However, measurements above 4.5 and below 1.0 are rare. The PSR after resurfacing is typically 4.2 to 4.5.

### Types of Road Improvements

**Thin Overlay.** If funds are available, a road with sufficient traffic volume (or one that is essential to commerce) is typically *resurfaced* when the PSR drops to 2.5—i.e., the midpoint between fair and good. This practice reflects many years of experience and life-cycle analysis. At a PSR of 2.5, the existing surface layer is only moderately distressed (Table 1). Because the road is still in fair-to-good condition, an additional 15 to 20 years of service can be attained with a 2-inch overlay, which costs approximately \$200,000 per mile (Table 2).

**Thick Overlay.** When the PSR drops to 2.0, the road's surface is marred with cracks, ruts, and other surface defects. Ride quality is noticeably worse. Because of accumulated distresses, a thin overlay will not yield a reasonable service life. Consequently, a thicker overlay is needed (e.g., 4 inches) at a higher cost (e.g., \$375,000 per mile).

**Rehabilitation.** If the PSR deteriorates much further (e.g., to 1.8), large potholes, deep cracks, and ruts may cover 50% or more of the road's surface. Because of advanced deterioration, the existing surface layer will not perform adequately as a base layer in a resurfaced roadway. In

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such cases, the most economical improvement is a mine-and-blend operation, in which the existing layers are taken up, recycled, and mixed with new material before being placed on the subgrade again. At a minimum, mine-and-blend improvements cost \$600,000 per mile. In some cases, the road must be widened, which could increase the total cost to \$1 million per mile or more (Table 2).

PSR Range	Description
4.0 - 5.0	Only new (or nearly new) pavements are likely to be smooth enough and distress free (e.g., sufficiently free of cracks and surface irregularities) to qualify for this category. Most pavements constructed or resurfaced during the year would be rated in this category.
3.0 - 4.0	Although not quite as smooth as those surfaces described above, pavements in this category give a first-class ride and exhibit few, if any, visible signs of surface deterioration. However, flexible pavements may show early evidence of rutting and fine random cracks.
2.0 - 3.0	The riding qualities of pavements in this category are noticeably inferior to those of new pavements and may be barely tolerable for high-speed traffic. Surface defects may include rutting, cracking, and extensive patching.
1.0 - 2.0	Pavements have deteriorated so much that the speed of free-flow traffic is affected. Flexible pavements may have large potholes and deep cracks. Distresses such as raveling, cracking, and rutting occur over 50% or more of the pavement's surface.
0.0 - 1.0	Pavements are in extremely deteriorated condition. The road is passable only at reduced speeds and with considerable ride discomfort. Large potholes and deep cracks exist. Distress occurs over 75% or more of the pavement's surface.

Source: U.S. Department of Transportation. *Status of the Nation's Highways, Bridges, and Transit: 2004 Conditions and Performance*. Exhibit 3-2.

Improvement	Thickness (inches)	PSR Threshold	Cost per Mile (\$000)
Thin Overlay	2	2.5	\$200
Thick Overlay	4	2.0	\$375
Rehabilitation	*	1.8	\$600-\$1,000
Reconstruction	*	1.5	\$1,250

\* The surface and base thicknesses are set to optimize their collective contributions, subject to cost constraints.

**Reconstruction.** If the PSR drops to 1.5, all pavement layers (including the subgrade) are weakened and deformed. Consequently, the road must be fully reconstructed—i.e., rebuilt from

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the ground up. Such improvements normally cost \$1.25 million per mile (or more) for a two-lane road.

### **Incremental Capital Cost Due to Rehabilitation**

There are roughly 6,000 miles of paved county road in North Dakota. Ideally, these roads should be resurfaced when the PSR reaches 2.5. However, this may not happen for several reasons, including: (1) The county does not have the funds to address all improvements in a timely manner. (2) Truck traffic on the road has increased and it has deteriorated quickly. Without UGPTI's biennial condition and investment needs study, road investments could be delayed (i.e., pushed into the future) with undesirable consequences. The cost of rehabilitating pavements is much greater than the cost of timely resurfacing improvements.

As shown in Table 2, deferring an investment until rehabilitation is needed increases the capital cost by at least \$400,000 per mile. If the road must also be widened (because of the thicker surface and base layers), rehabilitation could cost much more—e.g., \$1 million dollars per mile. If just one 5-mile segment is identified and improved in a timely manner and rehabilitation is avoided, \$2 million to \$4 million can be saved.

UGPTI's program will identify much more than just 5 miles of road that need timely investments. Current county road condition ratings do not exist. However, based on UGPTI's 2016 study, it is likely that 10% of paved county road-miles have PSR values of less than 2.5. These segments are currently in need of resurfacing. Another 14% of county road-miles have PSR values ranging from 2.5 to less than 3.0. If investments in just 100 miles of road with PSR values of less than 3.0 are optimized because of timely information, UGPTI's program will save the state \$40 million to \$80 million in capital costs. If investments in 500 miles of county road are optimized, UGPTI's program will save the state \$200 million to \$400 million in capital costs.

### **SAVINGS IN ROUTINE MAINTENANCE COST**

Savings in capital cost are only one aspect of the potential benefits. As roads deteriorate, potholes, cracks, and raveling (e.g., the loss of asphalt and rocks from the surface) increase. Consequently, routine maintenance activities such as patching, crack sealing, and spot maintenance increase as the PSR drops. This effect is documented in Table 3. Routine maintenance costs do not include preservation treatments such as chip seals and microsurfacing treatments, which are also necessary.

The total impact depends on how much time each pavement spends in certain PSR ranges—e.g., how many years elapse between a PSR of 3.5 and 3.0, between a PSR of 3.0 and 2.5, etc. To simulate these effects, a light-duty road with modest truck traffic is allowed to deteriorate in a computer model as a result of environmental and traffic factors for 25 years without improvement (Figure 1).<sup>1</sup> The incremental maintenance cost as road condition deteriorates from

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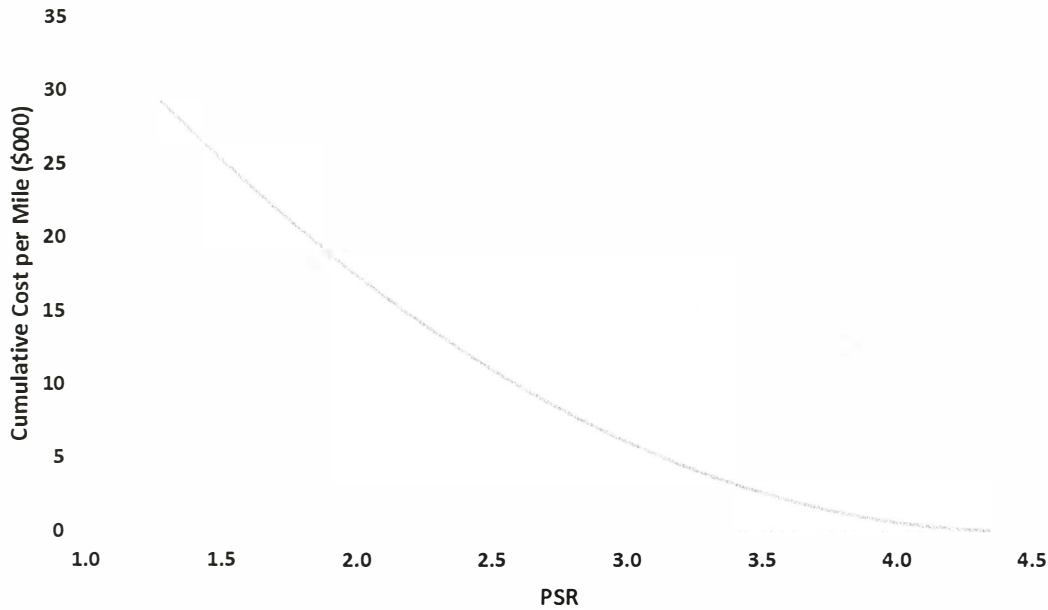
<sup>1</sup> The simulation assumes a structural number of 2.4 with good soil support and modest truck traffic—e.g., 50 trucks per day, loaded and empty. Deterioration from truck traffic is projected using the AASHTO-93 equations for flexible pavements. Environmental deterioration is accounted for through an exponential decay model, based on a

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a PSR of 2.5 to the rehabilitation level (a PSR of 1.8) is approximately \$10,000 per mile. Thus, if investments in just 100 miles of impacted county roads are optimized, UGPTI's program will save the state \$1 million in routine maintenance cost. If investments in 500 miles of impacted county roads are optimized, UGPTI's program will save the state \$5 million in routine maintenance cost.

PSR	Cost per Mile
4.0	\$583
3.5	\$2,019
3.0	\$3,460
2.5	\$4,893
2.0	\$6,352
1.5	\$7,783



**Figure 1 Routine Maintenance Cost for Light-Duty Pavement Over 25 Years without Resurfacing**

maximum pavement life of 25 years in the absence of truck traffic. In the simulation, the road reaches a PSR of 2.5 in year 18, at which time it should be resurfaced. Without resurfacing, it continues to decline to a PSR of 1.8 in year 22 and 1.5 in year 24. As the simulation suggests, county roads with structural numbers < 2.5 can deteriorate quickly once the PSR drops below 2.5.

<sup>2</sup>U.S. Department of Transportation. *Highway Economic Requirements System: Technical Report, 2005*, Table 7-10. The original source is: Witczak, M. and G. Rada. *Microcomputer Solution of the Project Level PMS Life Cycle Cost Model*, University of Maryland, Department of Civil Engineering, 1984. The 1984 costs have been indexed through the end of 2017 using FHWA's construction prices indexes.

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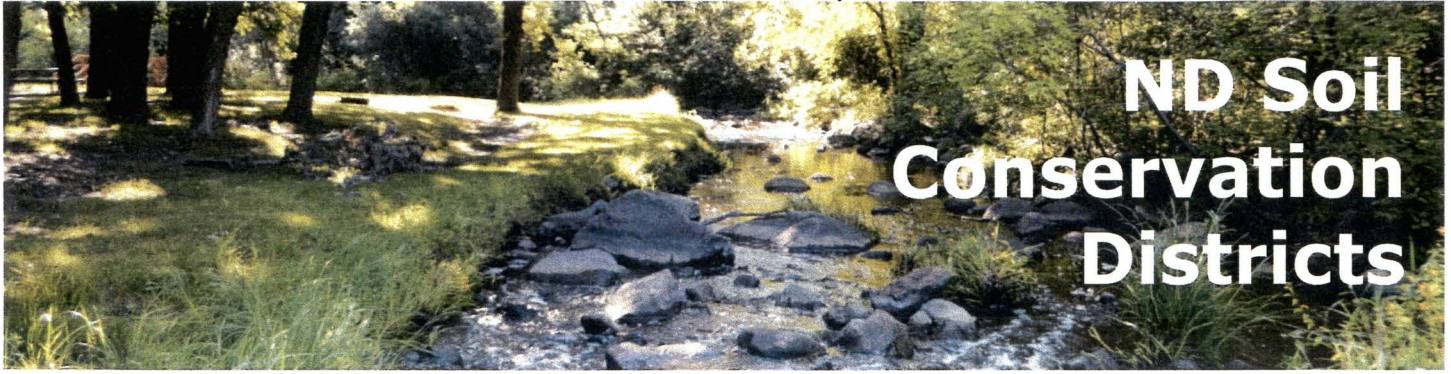
## OTHER COST SAVINGS

As roads deteriorate, vehicle repair and maintenance costs increase from roughness. Travel speeds are less efficient because drivers must slow down for rough areas. As shown in Table 4, trucking costs increase by more than 35% when road condition deteriorates from good to very poor. These costs ripple throughout the economy, affecting merchandisers and producers. By identifying timely investment and maintenance opportunities, UGPTI's county and local road planning center (with its asset management program) will enable smoother roads for longer periods of time. Although these benefits are not estimated in this addendum, they are important to agricultural and energy producers and manufacturers in the state. Regardless of the distribution system, most freight shipments move the first and last miles in trucks.

**Table 4. Trucking Cost as a Function of Road Condition**

Road Condition	PSR	Cost Index
Good	4	0.93
Fair	3	1.00
Poor	2	1.14
Very Poor	1	1.26

Source: National Academies of Sciences. 1990. *New Trucks for Greater Productivity and Less Road Wear: An Evaluation of the Turner Proposal* – Special Report 227. Washington, DC.



# ND Soil Conservation Districts

## Soil Conservation Districts

### Inside:

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In 1937 the State Legislature, under Governor William Langer, enacted Senate Bill 222 providing soil conservation districts a law with provisions for organizing such districts under state supervision.

Districts are organized by the vote of the people within the district and are managed by a board of supervisors also elected by the people.

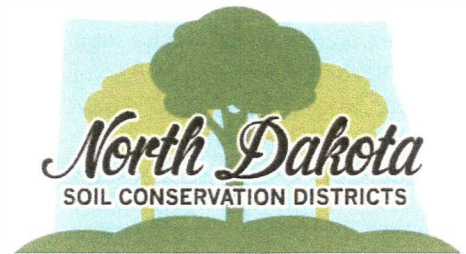
Soil Conservation Districts are responsible for carrying out a program of conservation on all our natural resources on cooperating farms and ranches within the district.

District supervisors shall provide for the execution of surety bonds for all employees and officers, provide full and accurate records of all proceedings, resolutions, regulations and orders issued or adopted by them.

They are responsible for maintaining complete and accurate records of receipts and disbursements of the district and provide for an annual audit. An annual financial statement must be forwarded to the State Soil Conservation Committee at the close of the business year.

Among other things, conservation districts help;

- implement farm, ranch and forestland conservation practices to protect soil productivity, water quality and quantity, air quality and wildlife habitat;
- conserve and restore wetlands, which purify water and provide habitat for birds, fish and numerous other animals;
- protect groundwater resources;
- assist communities and homeowners to plant trees and other land cover to hold soil in place, clean the air, provide cover for wildlife and beautify neighborhoods;
- help developers control soil erosion and protect water and air quality during construction; and
- reach out to communities and schools to teach the value of natural resources and encourage conservation efforts.



Soil Conservation Districts - Deliver cost effective, sustainable land & water management on the landscape & work to maintain the healthy watersheds we all live in together.

## It's Not Just Tree Planting

You might know us as "those people" that plant trees. Well we would like to fill you in on a little secret - we do plant trees, but we do so much more. We work daily with our local farmers, ranchers and district residents in protecting and enhancing our glorious North Dakota natural resources.

This newsletter highlights just a few of the services and projects in which we are involved with. So often we are lumped in with NRCS. We do have similar missions and we share the same office space, but we are locally led, and funded through district mill levies and the much needed financial support through the Soil Conservation Assistance Program (state funds).

Please take some time to really get to know us and what we do.



## A sample of what we offer...

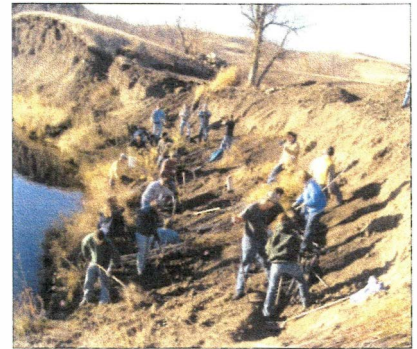
### Education

Soil Conservation Districts carry out information programs directed to the farm and non-farm public. Newsletters, newspaper articles, workshops, tours, demonstrations, and informative meetings are some of the means used to promote conservation.

Youth education is also a high priority. The Eco-Ed program brings 6th grade students outdoors. Professionals teach them about prairies, soils, wetlands, woodlands and their connection to water quality. Some districts hold range tours, or participate in Water Festivals for elementary students.

High School students are able to participate in the State-wide Envirothon competition held every spring.

Districts also strive to educate our own personnel through workshops, and hands-on training. Employees have been offered soil health, composting, rain gardens, rangeland, and grazing workshops. Classes are offered for water 101, macro invertebrates, and shelterbelt planting (design, specie selection, seedling care and storage and correct planting technique.)



### Conservation Cropping Systems Project

The mission of the CCSP project is to evaluate profitable crop rotations and crop management strategies that are uniquely adapted to the climate and friendly to our environment. This project creates an educational forum for the exchange of ideas, information, and issues regarding best management practices for no-till seeding systems, crop rotations, and non-point source pollution.

The extra rainfall in the southeastern portion of ND and water conserved in a no-till cropping system has caused production

problems for farmers trying to adapt a no-till seeding system.

It is believed that modification to the crop rotation and associated management practices will allow farmers to be successful in a no-till situation. Data generated from these rotations is available to all parties through news releases, and the web-site <http://notillfarm.org/>.

Field Day tours are held a couple of times each year to show what has been done at the demonstration farm and how it may be beneficial to our producers.



### Composting Project

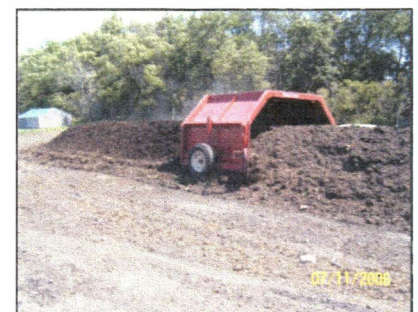
Since 2005, Wells County Soil Conservation District has been a leader in the promotion of windrow composting in North Dakota and throughout the upper mid-west. The project promotes the economic, environmental and animal health aspects of windrow composting on livestock operations.

The broad objective of Wells County's **Composting Project** has been to introduce animal waste composting, as an economically viable component of a

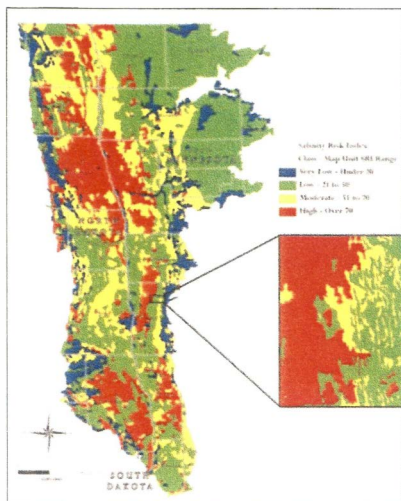
management system for handling organic waste material.

The project also demonstrates the direct benefits to water, soil, and atmospheric resources, grazing land health, and the associated benefits to wildlife habitat.

Since the project began in 2005, trials have been conducted on at least 22 active livestock operations and many of those producers have adopted windrow composting as an annual practice on their farm.



## Saline Soil Management Tools



Saline soils are those that are high in soluble salts. North Dakota has 5.8 million acres of saline soils, and that number is growing. In the Red River Valley, \$150 million is lost each year due to these soils.

Grand Forks County contains one of the largest areas of salt affected soils. This stems from an artesian discharge area that sits on top of sandstone, which formed in the Dakota Sandstone Formation. This combination gives the county a high water table that is continuously bringing up salts.

Historic farming practices have increased the affected areas. Tillage leaves soils bare and allows water to evaporate, while the salts sit at the surface.

The Grand Forks County Soil Conservation District has been helping landowners understand the causes of salinity and demonstrating different farming practices that will help reduce its devastating impacts.

Workshops, tours, and a demonstration site have all been implemented in the past two years to educate and showcase practices like no-till, cover crops, crop rotation, and water management. Collaborations with UND, NDSU, and the NRCS have helped bring this education to the forefront. Salinity will not go away, but better management will help keep those natural salts in the soil profile instead of on the soil surface.

## Rural Women



“Ladies Ag Nights or Days” bring women together who have one common goal: to keep agriculture alive and thriving! These nights are sponsored by Soil Conservation Districts along with many other generous donors.

Ladies Ag is important as women are an integral part of the farming and ranching communities and enjoy a chance to be recognized for doing their part to keep rural America strong! They may have different connections to agriculture and rural life, but their time and efforts can easily be related to by each other!”

Like all the equipment on rural operations, women too need regular maintenance. Many programs share stories about working with husbands on the farm. We all must learn how to laugh at ourselves because somewhere, someone else is sharing our very same experiences.

Rural Women’s Days or Nights inspire, educate and entertain women on a wide variety of topics such as new recipes, decorating techniques, thrift ideas, landscaping inspiration, holistic family vision and important subjects targeting production agriculture.

## Irrigation Pump for Holding Ponds



The Barnes County Soil Conservation District’s Watershed Project purchased a big gun irrigation system. Local cattle operations that have installed manure management systems through EQIP and EPA-319 watershed projects are experiencing holding ponds filled to their capacity.

The SCD felt there was an urgent need to provide a cost effective and appropriate method of lowering the effluent levels in these ponds.

The district collected effluent samples from 15 ponds which were tested for N, P & K, pH, Ammonia, Chloride, Salts, TSS, E.coli, Dissolved Solids, and Bio Oxygen Demand to provide a baseline of nutrients.

By offering this service local producers are able to dispose of their dirty water in an appropriate manner, thereby staying in compliance with their nutrient management plans and with the North Dakota Department of Health regulations.

## Urban Conservation



All states, North Dakota included are experiencing increases in urban acreage and decreases in rural acreage. When we think of natural resource conservation we often first think of rural areas, but with this increase in urbanization, conservation of our precious resources becomes just as important in urban areas.

What are our urban residents interests:

Rain gardens are colorful, perennial planting designed to capture and use retained water that may otherwise run off. Runoff from roofs, lawns, driveways and parking areas may overload storm sewers and pollute streams.

Rain barrels are a catchment system designed to capture and store rain water

coming off a roof. Rain barrels help lower water costs during peak summer months, reduce runoff to storm sewers, and provide oxygenated, un-chlorinated water for plants.

Composting significantly reduces the amount of solid waste contributed to landfills. Using compost as fertilizer cuts back on the use of chemical fertilizers, which could run off and contaminate the water.

Xeriscaping is a conscious attempt to develop plantings which are compatible with the environment. It entails the wise use of water through water efficient landscaping and utilizing plants better adapted to local climate. and varied soil conditions.

## Soil Health



Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plant, animals, and humans. Soil contains living organisms that when provided the basic necessities of life: food, shelter, and water - perform functions required to produce food and fiber.

Producers are looking for information, data and research. Various workshop topics have included; Increasing Soil Health Through Biodiversity, Bringing CRP into a No-Till Grain System, Cov-

er Crops for Prevented Plant Ground, Enhancing Forage Based on Livestock Operation, Managing Soil Moisture, Soil Testing for Soil Health, and the Financial Impact of Good Soil Health.

New technology is developing daily and the SCD's are a perfect gateway to share this information with our operators. Workshops or meetings always end with a great discussion between the presenters and their audience.

## Nutrient Balancer

Cedar SCD offers Nutrient Balancer through the Grazing Animal Nutrition Lab at Texas A&M University. Producers can have fecal samples from their cattle analyzed to maximize their grazing lands. Cedar SCD will collect the samples or producers can bring them in. We go through a series of questions and the sample is sent for analysis. The report comes back from the lab and producers can then make informed grazing decisions for their cattle.

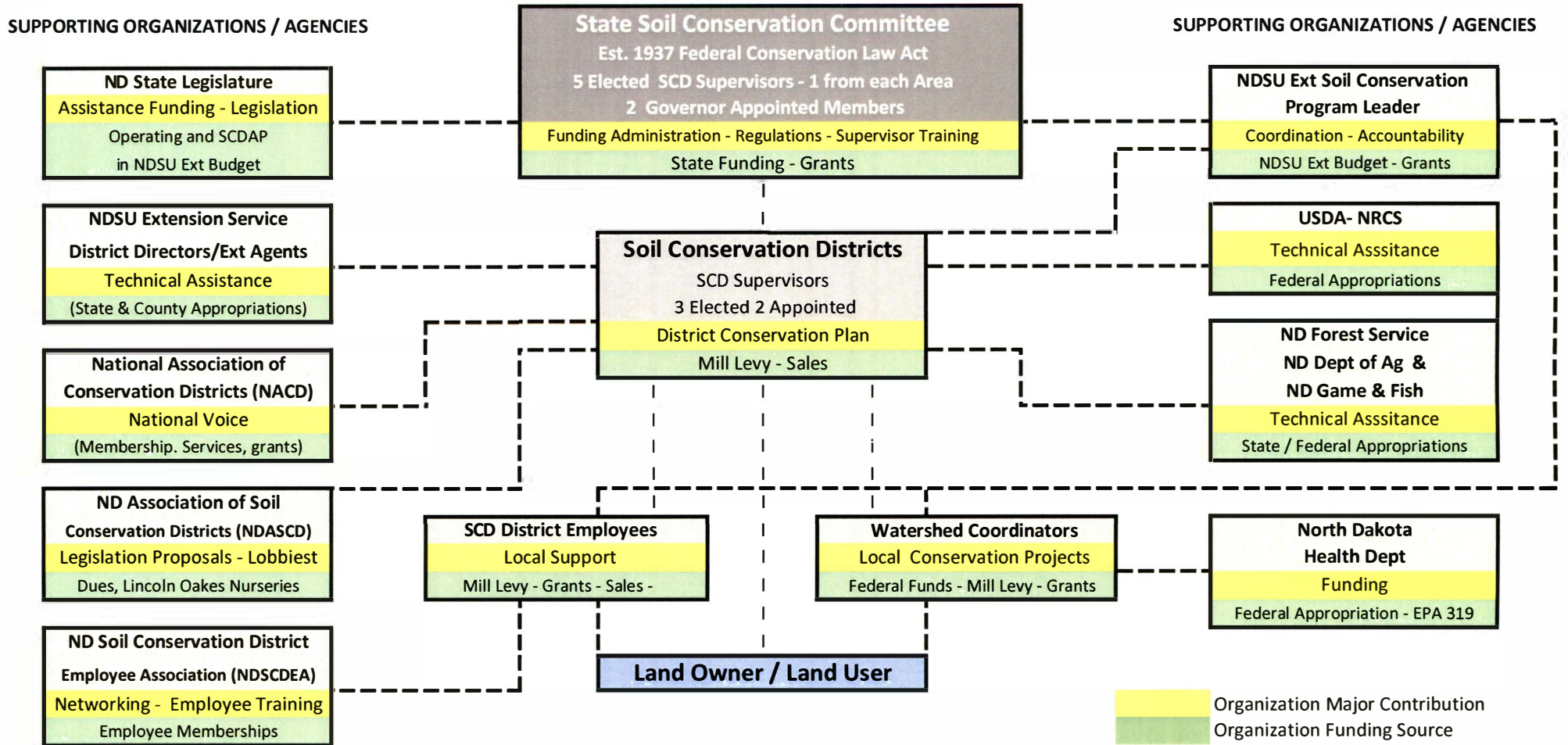


## No-till Gardening

The Selfridge No-till Garden has been growing strong for three years. The site was grassy to start, then sprayed with Round-up (it could be covered with tarps or plastic) to kill the vegetation. Using screw drivers, pizza cutters and pick axes, the garden was planted with little ground disturbance. It has been a huge success, and we have been able to donate well over a thousand pounds of produce to area schools, diabetes programs and area individuals.

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## ND Structural Organization Soil Conservation Districts



P.S

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**Appointee**

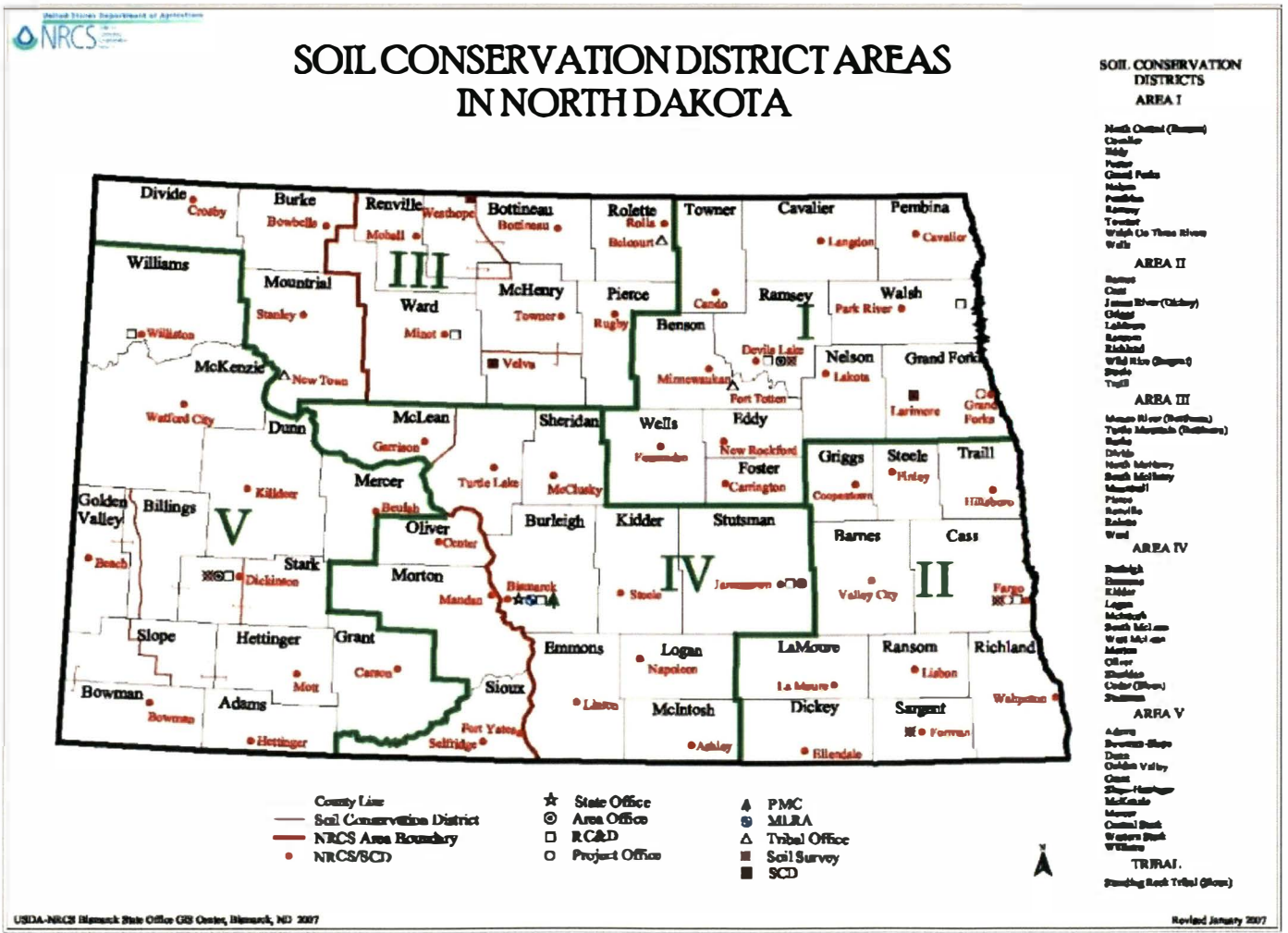
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NORTH DAKOTA  
**STATESOIL**  
CONSERVATION  
COMMITTEE



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NORTH DAKOTA STATE AGENCY AND INSTITUTION VACANT POSITIONS AS OF DECEMBER 31, 2018

Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts Included in the 2019-21 Biennium		
					Executive Budget		
					General Fund	Special Funds	Total
<b>GENERAL GOVERNMENT</b>							
<b>101 - Governor</b>							
0007 1.00 Other - not classified	12/01/18	1	01/23/19	Position filled January 23, 2019	\$177,066	\$0	\$177,066
0012 1.00 Other - not classified	06/01/17	19	N/A	Underfunded and currently unable to fill	45,492	0	45,492
					<u>\$222,558</u>	<u>\$0</u>	<u>\$222,558</u>
<b>108 - Secretary of State</b>							
42 1.00 Data processing coordinator III	12/31/18	0.5	03/01/19	Advertising to fill position	\$186,103	\$0	\$186,103
43 1.00 Office assistant III	10/31/18	2	03/01/19	Pending advertising due to implementation of new software January 2019	127,891	0	127,891
					<u>\$313,994</u>	<u>\$0</u>	<u>\$313,994</u>
<b>110 - Office of Management and Budget</b>							
74 1.00 Training officer II	12/17	12	7/19	No funding allocated to position in current biennium	\$193,976	\$0	\$193,976
168 1.00 Administrative assistant I	10/17	14	TBD	Under review pending availability of special fund revenues	0	1,244,501	1,244,501
23053 1.00 Administrative assistant III	5/18	7	N/A	Unfunded in executive budget	0	0	0
108 1.00 Custodian	1/18	12	N/A	Position removed in executive budget	0	0	0
121 1.00 Custodian	3/18	9	N/A	Position removed in executive budget	0	0	0
122 1.00 Custodian	12/18	1	1/19	Filled as of January 2019	100,196	0	100,196
180 1.00 Administrative assistant III	12/17	12	N/A	Unfunded in executive budget	0	0	0
					<u>\$294,172</u>	<u>\$1,244,501</u>	<u>\$1,538,673</u>
<b>112 - Information Technology Department</b>							
28740 1.00 Programmer analyst II	12/01/16	25	TBD	Holding this position as potential FTE reduction	\$0	\$0	\$0
245 1.00 Administrative assistant III	01/19/18	11	TBD	Holding this position as potential FTE reduction	0	0	0
25527 1.00 Administrative assistant II	06/01/18	7	TBD	Holding this position as potential FTE reduction	0	0	0
297 1.00 Programmer analyst III	05/01/18	8	TBD	Holding this position as potential FTE reduction	0	0	0
379 1.00 Business analyst III	10/24/18	2	TBD	Planning to refill	0	435,432	435,432
234 1.00 Systems administrator II	03/15/18	9	TBD	Holding this position as potential FTE reduction	0	0	0
255 1.00 Systems administrator II	04/14/18	8	TBD	Holding this position as potential FTE reduction	0	0	0
401 1.00 ITD division team leader II	01/27/18	11	TBD	Holding this position as potential FTE reduction	0	0	0
25503 1.00 Systems administrator II	09/01/17	4	TBD	Holding this position as potential FTE reduction	0	0	0
25513 1.00 Enterprise database manager	12/01/17	13	TBD	Holding this position as potential FTE reduction	0	0	0
26976 1.00 Systems administrator III	10/01/18	3	02/15/19	Advertised	0	394,200	394,200
238 1.00 ITD division director	07/16/18	5	TBD	Holding this position as potential FTE reduction	0	0	0
258 1.00 Telecomm technician III	07/01/18	6	TBD	Holding this position as potential FTE reduction	0	0	0
25529 1.00 Network engineer I	07/01/18	6	02/04/19	Already refilled	0	349,368	349,368
29446 1.00 Network administrator II	07/01/18	6	01/02/19	Already refilled	0	305,928	305,928
26959 1.00 Student information technology specialist	01/13/17	11	TBD	Holding this position as potential FTE reduction	0	0	0
325 1.00 Teacher II	06/18/18	6	03/31/19	Planning to refill	157,435	0	157,435
327 0.10 Teacher I	07/01/13	54	TBD	This position is held to track fractional FTE	12,935	0	12,935
331 0.10 Teacher I	07/01/13	54	TBD	This position is held to track fractional FTE	12,935	0	12,935
332 1.00 Office assistant III	03/24/18	9	TBD	Holding this position as potential FTE reduction	0	0	0
430 0.10 Teacher II	07/01/13	54	TBD	This position is held to track fractional FTE	12,935	0	12,935
					<u>\$196,240</u>	<u>\$1,484,928</u>	<u>\$1,681,168</u>
<b>117 - State Auditor</b>							
442 1.00 Auditor	11/02/18	2	03/01/19	Advertising to fill position	\$162,430	\$0	\$162,430
514 1.00 Medical auditor	06/20/18	7	04/01/19	Preparing to reclassify/advertise position	179,711	0	179,711
516 1.00 Auditor	12/18/18	1	02/01/19	Evaluating applicants	162,430	0	162,430
520 1.00 Auditor	12/17/18	1	02/01/19	Evaluating applicants	0	179,711	179,711
529 1.00 Auditor	11/30/18	1	05/01/19	Waiting to fill position 520 first	0	162,430	162,430
553 1.00 Auditor	04/14/15	43	N/A	No plans to fill this position	0	162,430	162,430
556 1.00 Auditor	11/02/18	2	03/01/19	Advertising to fill position	179,711	0	179,711
					<u>\$684,282</u>	<u>\$504,571</u>	<u>\$1,188,853</u>
<b>120 - State Treasurer</b>							
				None	\$0	\$0	\$0
					<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<b>125 - Attorney General</b>							
705 1.00 Account technician II	09/01/17	16	05/01/19	Filled by temporary staff - Requesting to be full-time staff	\$135,131	\$0	\$135,131
597 1.00 Assistant Attorney General	12/31/18	0	N/A	Removed due to 10% general fund reductions	12,933	0	12,933

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Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts Included in the 2019-21 Biennium Executive Budget			
					General Fund	Special Funds	Total	
28995 0.25	Administrative assistant II	06/09/17	19	07/01/19	Will be filled when concealed weapon licenses workload justifies	0	57,497	57,497
29422 1.00	Administrative assistant II	06/23/18	6	Unknown	Will be filled when concealed weapon licenses workload justifies	0	128,804	128,804
27350 1.00	Criminal investigator II	10/19/18	2	01/28/19	Filled 1/28/19	211,325	0	211,325
28879 1.00	Criminal investigator II	09/08/18	4	02/01/19	Interviewing 1/9/19	0	227,180	227,180
662 1.00	Criminal investigator III	02/10/18	10	01/28/19	Filled 1/28/19	195,841	0	195,841
663 1.00	Criminal investigator III	05/01/18	8	01/28/19	Filled 1/28/19	195,840	0	195,840
718 1.00	Deputy Fire Marshal I	08/22/18	4	01/07/19	Filled 1/7/19	176,369	0	176,369
719 1.00	Deputy Fire Marshal I	12/03/16	25	N/A	Unfunded during the 2017-19 biennium	0	181,662	181,662
<u>9.25</u>						<u>\$927,439</u>	<u>\$595,143</u>	<u>\$1,522,582</u>
<b>127 - Tax Commissioner</b>								
445 1.00	Tax service specialist I	7/18	6	7/19	Plan to fill	\$114,728	\$0	\$114,728
447 1.00	Office assistant II	11/16	26	N/A	Removed in the 2019-21 executive budget	0	0	0
453 1.00	Tax service specialist I	5/17	19	7/19	Potential reclassification and reorganization	110,460	0	110,460
457 1.00	Auditor I	4/18	9	7/19	Plan to fill	141,290	0	141,290
464 1.00	Administrative assistant II	12/17	12	7/19	Potential reclassification and reorganization	109,490	0	109,490
465 1.00	Compliance officer II	10/18	3	7/19	Plan to fill	166,471	0	166,471
472 1.00	Document imaging specialist II	1/18	12	7/19	Potential reclassification and reorganization	97,541	0	97,541
473 1.00	Office assistant II	10/16	27	N/A	Removed in the 2019-21 executive budget	0	0	0
475 1.00	Executive assistant	5/18	9	3/19	Plan to fill	182,445	0	182,445
476 1.00	Data process coordinator III	12/18	0	7/19	Plan to fill	174,013	0	174,013
478 1.00	Account technician II	1/17	24	N/A	Removed in the 2019-21 executive budget	0	0	0
481 1.00	Computer & network specialist III	10/17	15	2/19	Plan to fill	147,940	0	147,940
754 1.00	Compliance officer II	3/18	10	7/19	Plan to fill	158,847	0	158,847
760 1.00	Auditor I	1/18	12	7/19	Plan to fill	141,290	0	141,290
774 1.00	Auditor III	10/18	3	2/19	Plan to fill	195,566	0	195,566
780 1.00	Auditor I	5/17	20	7/19	Plan to fill	138,585	0	138,585
798 1.00	Auditor I	11/15	38	N/A	Removed in the 2019-21 executive budget	0	0	0
799 1.00	Research analyst IV	4/15	44	Filled	Filled with temporary employee	185,553	0	185,553
804 1.00	Administrative assistant I	12/18	0	7/19	Plan to fill	132,946	0	132,946
807 1.00	Auditor III	5/18	8	7/19	Plan to fill	148,053	0	148,053
816 1.00	Collections officer III	12/18	0	7/19	Will be filled in July 2019	187,683	0	187,683
820 1.00	Auditor I	7/15	42	N/A	Removed in the 2019-21 executive budget	0	0	0
822 1.00	Auditor IV	9/18	4	7/19	Plan to fill	227,136	0	227,136
29583 1.00	Research analyst I	7/15	42	N/A	Removed in the 2019-21 executive budget	0	0	0
<u>24.00</u>						<u>\$2,760,037</u>	<u>\$0</u>	<u>\$2,760,037</u>
<b>140 - Office of Administrative Hearings</b>								
					None	\$0	\$0	\$0
<u>0.00</u>								
<b>160 - Legislative Council</b>								
27346-1 1.00	Fiscal analyst	10/18	2	7/19	Plan to fill after session	\$215,004	\$0	\$215,004
904-1 1.00	Office assistant	12/16	25	N/A	Position unfunded in the 2017-19 and 2019-21 bienniums	0	0	0
903-1 1.00	Administrative support	3/15	46	7/19	Position unfunded in 2017-19 biennium. Funding restored for the 2019-21 biennium. Plan to fill after session	129,955	0	129,955
845-1 1.00	Administrative support	12/18	1	7/19	Plan to fill after session	129,955	0	129,955
<u>4.00</u>						<u>\$474,914</u>	<u>\$0</u>	<u>\$474,914</u>
<b>180 - Judicial branch</b>								
991 1.00	Juvenile court administrative assistant	12/01/18	1	04/01/19	Pending reclassification to deputy clerk	\$194,841	\$0	\$194,841
1030 1.00	Juvenile court officer I	11/14/18	2	02/01/19	Advertising to fill position	182,848	0	182,848
1052 1.00	Deputy clerk of district court	09/24/18	3	02/01/19	Advertising to fill position	150,461	0	150,461
1081 1.00	Deputy clerk of district court	09/01/18	4	01/02/19	Position filled as of January 2, 2019	145,777	0	145,777
1155 1.00	Supreme Court law librarian	06/07/18	19	04/01/19	Pending reclassification to paralegal	187,228	0	187,228
<u>5.00</u>						<u>\$861,155</u>	<u>\$0</u>	<u>\$861,155</u>
<b>188 - Commission on Legal Counsel for Indigents</b>								
24520 1.00	Attorney II	10/23/18	2	02/18/19	Interviewing applicants	\$202,099	\$0	\$202,099
29373 1.00	Attorney II	10/19/18	2	03/01/19	Posted/advertising to fill position	203,984	0	203,984
<u>2.00</u>						<u>\$406,083</u>	<u>\$0</u>	<u>\$406,083</u>
<b>190 - Retirement and Investment Office</b>								
					None	\$0	\$0	\$0
<u>0.00</u>								
<b>192 - Public Employees Retirement System</b>								

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Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts		
					General Fund	Special Funds	Total
1245 1.00 Auditor III	10/15/18	3	02/04/19	Offer accepted	\$0	\$169,554	\$169,554
1226 1.00 Compliance Officer II	04/29/18	9	02/04/19	Using temporary staff since April 2018; reclassified; employment offer accepted	0	152,687	152,687
<u>2.00</u>					<u>\$0</u>	<u>\$322,241</u>	<u>\$322,241</u>
<b>201 - Department of Public Instruction</b>							
1342 1.00 Senior programmer analyst	02/01/17	23	*	*Reorganizing and restructuring	\$66,662	\$123,800	\$190,462
1290 1.00 Executive assistant	04/21/17	19	*		224,141	0	224,141
1279 0.75 Education program administrator II	04/01/18	9	*		0	122,960	122,960
1338 1.00 Education program administrator III	04/20/18	8	N/A	Position removed in executive budget	3,331	7,415	10,746
1294 1.00 Administrative assistant III	05/01/18	8	N/A	Position removed in executive budget	9,325	0	9,325
1336 1.00 Computer & network specialist II	08/31/18	4	N/A	Position removed in executive budget	9,641	0	9,641
1314 1.00 Division manager, DPI	09/30/18	3	N/A	Position removed in executive budget	17,570	0	17,570
<u>6.75</u>					<u>\$330,670</u>	<u>\$254,175</u>	<u>\$584,845</u>
<b>226 - Department of Trust Lands</b>							
1473 1.00 Computer & network specialist II	12/18	0	1/19	Advertised and filled position	\$0	\$172,891	\$172,891
28655 1.00 Business analyst I	4/18	8	7/19	Will use temporary employee by the end of biennium	0	193,696	193,696
29036 1.00 Land department investment analyst	9/18	3	4/19	Reclassifying the position	0	227,510	227,510
24107 1.00 Audit technician	11/18	1	N/A	Position removed in executive budget	0	0	0
<u>4.00</u>					<u>\$0</u>	<u>\$594,097</u>	<u>\$594,097</u>
<b>NOTE:</b> The institutions of higher education are not included in this report.							
<b>250 - State Library</b>							
1509 1.00 Library associate I	12/18	0	N/A	Position removed in executive budget	\$0	\$0	\$0
<u>1.00</u>					<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<b>252 - North Dakota School for the Deaf - Resource Center for Deaf and Hard of Hearing</b>							
1549 1.00 Assistant director, primary/secondary education programs	5/18	7	N/A	On hold	\$0	\$171,167	\$171,167
<u>1.00</u>					<u>\$0</u>	<u>\$171,167</u>	<u>\$171,167</u>
<b>253 - North Dakota Vision Services - School for the Blind</b>							
1607 0.60 Office assistant III	5/18	7	N/A	Position removed in executive budget	\$0	\$0	\$0
1609 0.50 Faculty not classified	7/18	6	6/19	Propose to hire in spring	89,500	898	90,398
<u>1.10</u>					<u>\$89,500</u>	<u>\$898</u>	<u>\$90,398</u>
<b>270 - Department of Career and Technical Education</b>							
1628 1.00 Assistant supervisor - Trade and industry	02/03/17	23	N/A	Position removed in executive budget	\$0	\$0	\$0
<u>1.00</u>					<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<b>HEALTH AND WELFARE</b>							
<b>301 - State Department of Health</b>							
1660 1.00 Human service program administrator II (pending reclassification)	10/17	14	3/19	Awaiting reclassification & hiring council approval	\$0	\$146,873	\$146,873
1666 1.00 Health care facility surveyor II	10/18	2.5	2/19	Job offer is being extended after background check	54,422	115,647	170,069
1670 1.00 Administrative assistant I	7/18	5	Eliminated	Position eliminated in executive budget	0	0	0
1687 0.50 Public health nurse consultant II	10/18	3	Eliminated	Position eliminated in executive budget	0	0	0
1692 0.50 Public health nurse consultant II	12/17	13	Eliminated	Position eliminated in executive budget	0	0	0
1783 1.00 Health/human service program administrator III	11/18	1.5	1/19	Position filled 1/7/19	0	157,723	157,723
1787 1.00 Health care facility surveyor II	5/18	7.5	Eliminated	Position eliminated in executive budget	0	0	0
1869 1.00 Office assistant III	11/18	2	Spring	Management is evaluating	94,801		94,801
1877 1.00 Administrative assistant I	11/18	2	01/03/19	Position filled 1/3/19	77,765	25,659	103,424
1977 1.00 Health care facility surveyor II	10/18	2.5	ASAP	Position is currently being advertised	32,542	122,418	154,960
3362 1.00 Registered nurse III	11/18	2	03/01/19	Position is currently being advertised - closes 1/27/19	104,720	68,543	173,263
Not Assigned 1.00 Office assistant III	7/17	18	Eliminated	New position in Medical Marijuana - position eliminated in executive budget	0	0	0
Not Assigned 1.00 Health/human service program administrator II	7/17	18	3/19	New position in Medical Marijuana will be filled once dispensaries are registered. Funding of \$153,982 is provided from fees through a continuing appropriation.	0	0	0
<u>12.00</u>					<u>\$364,250</u>	<u>\$636,863</u>	<u>\$1,001,113</u>
<b>303 - Department of Environmental Quality</b>							
1661 1.00 Environmental scientist II	11/17	13	3/19	Advertised - closes 2/3/19	\$17,787	\$130,437	\$148,224
1845 1.00 Environmental scientist II	11/18	2	3/19	Advertised - closes 2/3/19	38,591	108,424	147,015



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					General Fund	Special Funds	Total	
29510 1.00 Environmental scientist II	8/17	16		Spring 2019	Restored in the executive budget			
	3.00							
<b>313 - Veterans' Home</b>								
3042 0.80 Resident living specialist (Skilled)	11/19/18	1.5	N/A	Advertising to fill position	\$0	\$89,368	\$89,368	
3106 0.80 Resident living specialist (Skilled)	08/03/18	5	N/A	Advertising to fill position	0	89,163	89,163	
3109 0.80 Licensed practical nurse (Basic)	12/31/18	0	01/15/19	Filled	0	117,928	117,928	
3063 0.80 Resident living specialist (Basic)	01/02/18	12	N/A	Not filling until increase in basic census	0	74,921	74,921	
28096 0.60 Resident living specialist (Basic)	09/07/17	15	N/A	Not filling until increase in basic census	0	74,921	74,921	
28148 0.80 Resident living specialist (Basic)	07/01/17	18	N/A	Not filling until increase in basic census	0	89,913	89,913	
3111 0.80 Resident living specialist II (Basic)	08/06/18	4	N/A	Not filling until increase in basic census	0	81,711	81,711	
3101 0.60 Account technician	N/A	N/A	N/A	Removed in the executive budget	0	0	0	
BCLPN 1 1.00 Licensed practical nurse (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCLPN 2 0.90 Licensed practical nurse (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCRLS 1 0.80 Resident living specialist (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCRLS 2 0.80 Resident living specialist (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCRLS 3 0.80 Resident living specialist (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCRLS 4 0.60 Resident living specialist (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCRLS 5 0.60 Resident living specialist (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
BCRLS 6 0.50 Resident living specialist (Basic)	N/A	N/A	N/A	Unfunded in the executive budget	0	0	0	
	12.00				\$0	\$617,925	\$617,925	
<b>316 - Indian Affairs Commission</b>								
	0.00			None		\$0	\$0	
<b>321 - Department of Veterans' Affairs</b>								
	0.00			None		\$0	\$0	
<b>325 - Department of Human Services</b>								
00003941 1.00 Administrative assistant I	11/18	1	4/19	Assessing	\$64,634	\$11,566	\$76,200	
00003719 1.00 Human relations counselor	8/18	4	3/19	Currently posted	59,808	45,456	105,264	
00003920 1.00 Human relations counselor	10/18	2	3/19	Currently posted	88,449	23,151	111,600	
00003466 1.00 DHS business information service administrator	11/18	1	1/19	Filled	58,235	44,485	102,720	
00003908 1.00 Direct care associate III	10/18	2	1/19	Filled	55,162	14,438	69,600	
00004102 1.00 Human Service Center (HSC) director	9/18	3	1/19	Currently interviewing	74,718	69,930	144,648	
00003912 1.00 Administrative assistant III	12/18	0	1/19	Filled	87,210	15,606	102,816	
00003795 1.00 Vision rehabilitation specialist II	12/18	0	N/A	Unfunded	0	0	0	
00003210 1.00 Human service program administrator IV	2/18	10	1/19	Filled	0	64,872	64,872	
00025817 1.00 Administrative assistant II	12/18	0	4/19	Assessing	25,720	49,928	75,648	
00025812 1.00 Child support invest	12/18	0	2/19	Currently interviewing	30,274	58,766	89,040	
00025814 1.00 Office assistant II	11/18	1	N/A	Unfunded	0	0	0	
00004383 1.00 System support specialist III	12/18	0	1/19	Filled	37,340	72,484	109,824	
00004339 1.00 Human service program administrator III	10/18	2	N/A	Unfunded	0	0	0	
00025744 1.00 Office assistant III	12/18	0	N/A	Unfunded	0	0	0	
00003225 1.00 Administrative assistant I	11/18	1	1/19	Filled	32,041	33,527	65,568	
00003177 1.00 Director, Children and Family Services	6/18	7	4/19	Assessing	102,246	106,986	209,232	
00003834 1.00 Dis claims analyst I	10/18	3	7/19	Will be posted this summer	0	92,400	92,400	
00003593 1.00 Human service program administrator V	10/18	3	3/19	Currently posted	49,893	9,411	59,304	
00002414 1.00 Human service program administrator III	12/18	0	3/19	Will be recruiting	54,306	50,958	105,264	
00003390 1.00 Chief financial officer - DHS	7/17	17	7/19	Assessing	161,731	95,885	257,616	
00004173 1.00 Accounting/budgeting specialist III	9/18	3	4/19	Assessing	79,208	46,960	126,168	
00003286 1.00 Office assistant III	10/18	2	1/19	Filled	43,635	25,869	69,504	
00003490 1.00 Administrative assistant II	11/18	1	2/19	Offer extended	59,440	35,240	94,680	
00003368 1.00 Auditor I	10/18	2	N/A	Unfunded	0	0	0	
00004282 1.00 Research analyst III	7/17	17	N/A	Unfunded	0	0	0	
00002477 1.00 Business analyst II	12/18	0	2/19	Currently posted	161,791	30,209	192,000	
00002509 1.00 Human resources director I	10/18	2	N/A	Unfunded	0	0	0	
00003675 1.00 Training officer II	4/18	8	3/19	Will be posting as group due to reorganization	81,456	16,944	98,400	
00003836 1.00 Human resources officer II	6/18	6	3/19	Will be posting as group due to reorganization	109,011	22,677	131,688	
00002165 1.00 Human resources technician I	12/18	0	3/19	Will be posting as group due to reorganization	76,350	15,882	92,232	
00002980 1.00 Human resources technician I	12/18	0	3/19	Will be posting as group due to reorganization	67,191	13,977	81,168	
00003426 1.00 Human resources technician I	11/18	1	3/19	Will be posting as group due to reorganization	58,449	12,159	70,608	
00003288 1.00 Human service program administrator III	2/18	10	4/19	Assessing	76,727	38,329	115,056	
00004245 1.00 Data processing coordinator II	12/18	0	1/19	Filled	67,445	33,691	101,136	
00003398 1.00 Director, imd, DHS	12/17	12	N/A	Unfunded	0	0	0	

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					General Fund	Special Funds	Total		
00004337	1.00	Senior programmer analyst	6/17	18	N/A	Unfunded	0	0	0
00003876	1.00	Its deputy director	10/17	14	N/A	Unfunded	0	0	0
00003946	1.00	Addiction counselor III	8/17	16	Assessing	76,004	26,788	102,792	
00003421	1.00	Nurse practitioner	7/18	5	1/19	Filled	103,174	106,826	210,000
00003138	1.00	Licensed psychologist II	12/18	0	1/19	Filled	95,835	144,165	240,000
00003419	1.00	Licensed psychologist I	12/18	0	4/19	Filled	64,689	97,311	162,000
00003164	1.00	Reg representative social ser program	11/18	1	2/19	Offer extended	64,260	62,940	127,200
00002913	1.00	Human service program administrator III	N/A	N/A	N/A	Unfunded	0	0	0
00003506	1.00	Office assistant III	12/18	0	2/19	Will be posted	54,750	10,890	65,640
00003509	1.00	HSPA IV	10/18	3	2/19	Filled	20,049	74,079	94,128
00002013	1.00	Direct care associate I	6/18	6	ASAP	Currently posted	32,520	32,520	65,040
00002016	1.00	Direct care supervisor	8/18	4	ASAP	Currently posted	44,292	44,292	88,584
00002024	1.00	Direct care associate I	8/18	4	ASAP	Currently posted	29,124	29,124	58,248
00002230	1.00	Direct care associate I	8/18	4	ASAP	Currently posted	30,924	30,924	61,848
00002272	1.00	Direct care associate III	7/18	5	ASAP	Currently posted	89,343	2,889	92,232
00002299	1.00	Direct care associate I	10/18	2	ASAP	Currently posted	33,936	33,936	67,872
00002309	1.00	Direct care associate II	5/18	7	ASAP	Currently posted	63,168	744	63,912
00002317	1.00	Direct care associate I	7/18	6	ASAP	Currently posted	39,684	39,684	79,368
00002331	1.00	Direct care associate II	2/18	10	ASAP	Currently posted	61,911	729	62,640
00002351	1.00	Direct care supervisor	9/18	3	ASAP	Currently posted	51,864	51,864	103,728
00002371	1.00	Direct care associate I	6/18	6	ASAP	Currently posted	23,892	23,892	47,784
00002374	1.00	Direct care associate I	7/18	5	ASAP	Currently posted	29,124	29,124	58,248
00002453	1.00	Direct care associate II	6/18	6	ASAP	Currently posted	30,600	30,600	61,200
00002486	1.00	Activity assistant II	8/18	4	ASAP	Currently posted	28,284	28,284	56,568
00002316	1.00	Direct care associate II	8/18	4	ASAP	Currently posted	31,236	31,236	62,472
00002353	1.00	Direct care associate II	7/18	5	ASAP	Currently posted	36,084	36,084	72,168
00002428	1.00	Direct care associate I	10/18	2	ASAP	Currently posted	30,588	30,588	61,176
00002085	1.00	Occupational therapist	10/18	2	ASAP	Currently posted	128,770	1,094	129,864
00002126	1.00	Applied behavioral analyst II	5/18	7	ASAP	Currently posted	126,792	0	126,792
00002206	1.00	Direct care associate III	12/18	0	ASAP	Currently posted	8,217	74,991	83,208
00002304	1.00	Direct care supervisor	11/18	2	ASAP	Currently posted	35,124	35,124	70,248
00002460	1.00	Direct care associate I	12/18	0	ASAP	Currently posted	29,424	29,424	58,848
00002278	1.00	Direct care associate I	5/18	7	ASAP	Currently posted	29,424	29,424	58,848
00002341	1.00	Direct care associate I	12/18	0	ASAP	Currently posted	29,124	29,124	58,248
00002439	1.00	Direct care associate I	12/17	12	ASAP	Currently posted	32,700	32,700	65,400
00002125	1.00	General trade maintenance worker II	10/18	2	2/19	Filled	78,456	0	78,456
00002274	1.00	Direct care associate I	12/18	0	1/19	Filled	29,124	29,124	58,248
00010195	1.00	Cook I	11/04	169	N/A	Unfunded	0	0	0
00002124	1.00	Direct care associate III	10/15	38	N/A	Unfunded	0	0	0
00002158	1.00	Heating plant super II	4/17	20	N/A	Unfunded	0	0	0
00002235	1.00	Direct care associate II	5/17	19	N/A	Unfunded	0	0	0
00002266	1.00	Direct care associate II	7/17	18	N/A	Unfunded	0	0	0
00002280	1.00	Direct care supervisor	1/18	12	N/A	Unfunded	0	0	0
00002300	1.00	Direct care associate II	3/17	21	N/A	Unfunded	0	0	0
00002338	1.00	Direct care associate II	12/17	12	N/A	Unfunded	0	0	0
00024597	1.00	Direct care associate II	3/17	21	N/A	Unfunded	0	0	0
00002480	1.00	Direct care associate III	12/17	12	N/A	Unfunded	0	0	0
00002296	1.00	Direct care associate I	3/17	21	N/A	Unfunded	0	0	0
00002026	1.00	Direct care associate II	12/16	24	N/A	Unfunded	0	0	0
00002237	1.00	Direct care associate I	8/17	16	N/A	Unfunded	0	0	0
00002330	1.00	Direct care associate II	5/17	19	N/A	Unfunded	0	0	0
00002379	1.00	Direct care associate II	8/17	16	N/A	Unfunded	0	0	0
00002437	1.00	Direct care associate II	5/17	19	N/A	Unfunded	0	0	0
00002448	1.00	Direct care associate I	5/17	19	N/A	Unfunded	0	0	0
00002466	1.00	Direct care associate I	8/17	17	N/A	Unfunded	0	0	0
00002450	1.00	Direct care associate II	8/17	16	N/A	Unfunded	0	0	0
00002455	1.00	Direct care associate I	6/17	18	N/A	Unfunded	0	0	0
00002094	1.00	Cook I	11/18	2	ASAP	Currently posted	51,359	1,921	53,280
00001994	1.00	Dental hygienist	10/17	14	N/A	Using funds to pay for temporary employee	136,320	0	136,320
00003272	1.00	Accounting manager I	9/18	4	1/19	Filled	106,570	63,182	169,752
00028611	1.00	Human service program specialist	12/18	0	N/A	Filled	40,972	39,212	80,184
00004381	1.00	Administrative officer I	7/18	5	7/19	Assessing	42,000	42,000	84,000
00002164	1.00	Administrative officer I	6/18	6	7/19	Assessing	51,516	32,474	83,990
00029007	1.00	Human service program administrator IV	9/18	3	4/19	Assessing	39,547	92,453	132,000
00003629	1.00	Mental illness case manager II	12/18	0	3/19	Currently interviewing	71,200	27,200	98,400
00028120	1.00	Registered nurse II	4/16	32	3/19	Currently interviewing	148,267	60,533	208,800
00004114	1.00	Regional Human Service Center fiscal manager	8/18	4	3/19	Currently interviewing	112,336	22,400	134,736

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Salary and Fringe Benefit Amounts  
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Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts Included in the 2019-21 Biennium Executive Budget				
					General Fund	Special Funds	Total		
00004138	1.00	Registered nurse II	11/18	1	3/19	Currently interviewing	75,071	30,649	105,720
00004112	1.00	Nurse practitioner	2/14	58	ASAP	Currently posted	132,929	54,271	187,200
00003889	1.00	Developmental disabilities case manager III	9/18	3	2/19	Filled	60,559	46,433	106,992
00003999	1.00	Direct care associate III	12/18	0	3/19	Currently recruiting	59,280	0	59,280
00003560	1.00	Vision rehabilitation specialist II	12/18	0	3/19	Currently interviewing	26,871	72,777	99,648
00003464	1.00	Developmental disabilities case manager II	11/18	1	3/19	Currently interviewing	56,447	43,177	99,624
00003171	1.00	Human relations counselor	7/18	5	3/19	Currently posted	32,488	74,912	107,400
00004008	1.00	Licensed psychologist I	5/15	43	3/19	Currently posted	50,819	117,181	168,000
00004092	1.00	Addiction counselor II	12/18	0	3/19	Currently posted	91,480	29,936	121,416
00004352	1.00	Advanced clinical specialist	10/18	2	3/19	Currently posted	39,769	91,703	131,472
00003473	1.00	Addiction counselor II	9/16	28	1/19	Filled	79,564	26,036	105,600
00003843	1.00	Direct care associate III	11/18	1	1/19	Filled	12,487	45,761	58,248
00004027	1.00	Addiction counselor II	11/18	1	1/19	Filled	83,831	27,433	111,264
00004267	1.00	Human service program administrator IV	10/18	2	1/19	Filled	140,688	0	140,688
00004372	1.00	Human relations clSenior	12/18	0	2/19	Filled	34,259	78,997	113,256
00003252	1.00	Office assistant III	6/18	6	N/A	Unfunded	0	0	0
00003520	1.00	Senior vocational rehabilitation counselor	9/18	3	N/A	Unfunded	0	0	0
00003864	1.00	Mental illness case manager II	11/18	1	3/19	Currently interviewing	83,985	13,935	97,920
00003868	1.00	Human service program administrator III	11/18	2	3/19	Currently interviewing	66,231	46,377	112,608
00003937	1.00	Advanced clinical specialist	6/18	6	3/19	Currently interviewing	51,968	55,432	107,400
00003866	1.00	Addiction counselor III	10/18	2	3/19	Will be recruiting	74,718	19,482	94,200
00003708	1.00	Addiction counselor II	7/18	5	2/19	Currently interviewing	75,034	47,366	122,400
00003452	1.00	Addiction counselor II	12/18	0	2/19	Currently interviewing	62,676	39,564	102,240
00003453	1.00	Human service program administrator III	10/18	2	1/19	Filled	40,841	64,423	105,264
00003314	1.00	Advanced clinical specialist	12/18	0	3/19	Currently posted	62,162	57,838	120,000
00003793	1.00	Registered nurse II	12/18	0	4/19	Currently interviewing	74,402	32,398	106,800
00003925	1.00	Addiction counselor II	9/18	3	4/19	Currently interviewing	85,595	25,429	111,024
00004019	1.00	Mi case manager II	12/18	1	4/19	Currently interviewing	98,688	0	98,688
00004197	1.00	Human relations counselor	11/18	1	4/19	Currently interviewing	39,938	59,710	99,648
00004221	1.00	Advanced clinical specialist	N/A	?	4/19	Currently interviewing	68,342	46,258	114,600
00003613	1.00	Unclassified	11/18	2	ASAP	Currently posted	397,088	172,912	570,000
00004180	1.00	Licensed psychologist I	12/18	1	4/19	Currently posted	88,178	131,830	220,008
00004288	1.00	Advanced clinical specialist	11/18	1	3/19	Offer accepted	75,856	51,344	127,200
00002143	1.00	Registered nurse II	12/18	0	1/19	Filled	87,794	38,230	126,024
00004017	1.00	Registered nurse II	12/18	0	2/19	Offer extended	71,225	31,015	102,240
00004143	1.00	Vision rehabilitation specialist II	12/18	0	1/19	Filled	29,239	82,817	112,056
00003528	1.00	Senior vocational rehabilitation counselor	9/18	3	2/19	Offer accepted	25,529	94,327	119,856
00004106	1.00	Office assistant III	7/18	5	4/19	Assessing	58,032	0	58,032
00002177	1.00	Quality manager	11/16	25	2/19	Offer accepted	149,328	0	149,328
00002560	1.00	Heating plant operator II	10/18	3	2/19	Currently posted	72,039	29,817	101,856
00002769	1.00	Nurse practitioner	6/17	18	ASAP	Currently posted	126,054	89,946	216,000
00010595	1.00	Advanced clinical specialist	11/18	1	3/19	Currently posted	120,240	0	120,240
00002973	1.00	Psychologist resident	11/18	1	4/19	Currently posted	149,328	0	149,328
00002194	1.00	Direct care supervisor	11/18	1	3/19	Currently posted	83,712	0	83,712
00002811	1.00	Registered nurse II	10/18	2	3/19	Currently posted	78,014	55,666	133,680
00002724	1.00	Registered nurse III	11/18	1	ASAP	Currently posted	84,022	59,954	143,976
00002824	1.00	Registered nurse III	6/17	18	ASAP	Currently posted	77,033	54,967	132,000
00002924	1.00	Direct care associate I	10/18	2	3/19	Currently posted	34,973	24,955	59,928
00002935	1.00	Direct care associate I	11/18	1	3/19	Currently posted	61,464	0	61,464
00002966	1.00	Licensed practical nurse I	10/18	2	3/19	Currently posted	51,150	36,498	87,648
00002899	1.00	Direct care associate II	10/18	2	3/19	Currently posted	37,088	26,464	63,552
00002968	1.00	Direct care associate III	11/18	1	3/19	Currently posted	14,648	62,368	77,016
00029520	1.00	Direct care associate I	11/18	1	3/19	Currently posted	13,662	58,170	71,832
00003005	1.00	Registered nurse II	11/18	1	ASAP	Currently posted	140,784	0	140,784
00002133	1.00	Direct care associate I	10/18	2	3/19	Currently posted	34,973	24,955	59,928
00002306	1.00	Direct care associate I	10/18	2	3/19	Currently posted	38,250	27,294	65,544
00002837	1.00	Direct care associate I	10/18	2	3/19	Currently posted	34,973	24,955	59,928
00002892	1.00	Direct care associate I	11/18	1	3/19	Currently posted	34,973	24,955	59,928
00002979	1.00	Registered nurse II	5/18	7	ASAP	Currently posted	83,000	59,224	142,224
00024600	1.00	Direct care associate III	8/18	4	3/19	Currently posted	69,312	0	69,312
00026316	1.00	Direct care associate I	8/18	4	3/19	Currently posted	59,928	0	59,928
00002657	1.00	Unclassified	9/16	27	ASAP	Currently posted	288,944	206,176	495,120
00002715	1.00	Therapy recreation specialist II	9/18	4	4/19	Currently posted	21,189	90,219	111,408
00002717	1.00	Addiction counselor II	7/18	6	2/19	Currently posted	22,846	97,274	120,120
00002747	1.00	Registered nurse II	8/18	4	ASAP	Currently posted	74,232	52,968	127,200
00002755	1.00	Registered nurse II	8/18	4	ASAP	Currently posted	74,232	52,968	127,200
00002781	1.00	Registered nurse II	9/18	4	ASAP	Currently posted	79,358	56,626	135,984
00002897	1.00	Direct care associate I	6/18	6	3/19	Currently posted	11,653	49,619	61,272

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Agency/Position No./Description	Date Vacated	Number Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts				
					General Fund	Special Funds	Total		
00002969	1.00	Direct care associate I	8/18	4	3/19	Currently posted	34,973	24,955	59,928
00002577	1.00	Equipment operator II	10/18	2	2/19	Offer accepted	55,217	22,855	78,072
00002592	1.00	Food service supervisor	9/18	3	1/19	Filled	94,094	11,506	105,600
00024587	1.00	Activity therapist II	9/18	3	1/19	Filled	86,928	0	86,928
00002624	1.00	Administrative assistant I	10/18	2	2/19	Offer accepted	49,802	20,614	70,416
00002697	1.00	Hospital administrator	8/17	16	3/19	Offer accepted	147,336	0	147,336
00002703	1.00	Occupational therapist	9/18	4	2/19	Offer extended	128,760	0	128,760
00002759	1.00	Nurse practitioner	1/17	23	N/A	Unfunded	0	0	0
00002706	1.00	Addiction counselor II	5/18	7	N/A	Unfunded	0	0	0
00002525	1.00	Registered nurse II	4/18	8	N/A	Unfunded	0	0	0
00002713	1.00	Direct care associate III	2/18	10	N/A	Unfunded	0	0	0
00002743	1.00	Direct care associate I	4/18	8	N/A	Unfunded	0	0	0
00002766	1.00	Registered nurse II	5/18	8	N/A	Unfunded	0	0	0
00002767	1.00	Registered nurse II	8/17	16	N/A	Unfunded	0	0	0
00002921	1.00	Direct care associate III	6/17	18	N/A	Unfunded	0	0	0
00002977	1.00	Licensed practical nurse II	10/18	3	N/A	Unfunded	0	0	0
00002985	1.00	Direct care associate I	4/18	8	N/A	Unfunded	0	0	0
00002803	1.00	Direct care associate I	11/18	1	N/A	Unfunded	0	0	0
00026318	1.00	Direct care associate I	5/18	7	N/A	Unfunded	0	0	0
00024585	1.00	Direct care associate I	10/18	2	N/A	Unfunded	0	0	0
00002555	1.00	General trade maintenance worker II	9/18	3	N/A	Unfunded	0	0	0
00026315	1.00	Direct care associate III	9/18	3	N/A	Unfunded	0	0	0
00002711	1.00	Addiction counselor II	8/17	17	N/A	Unfunded	0	0	0
00002807	1.00	Direct care associate III	6/18	6	N/A	Unfunded	0	0	0
00002937	1.00	Direct care associate I	5/17	19	N/A	Unfunded	0	0	0
00003979	1.00	Director, vocational rehabilitation	7/17	17	7/19	Assessing	44,274	162,654	206,928
00003211	1.00	Direct care associate III	8/18	4	3/19	Currently posted	21,353	41,695	63,048
00003903	1.00	Advanced clinical specialist	9/17	15	1/19	Filled	74,780	146,020	220,800
00004072	1.00	Office assistant III	11/18	1	1/19	Filled	49,319	11,281	60,600
00003372	1.00	Office assistant III	11/18	1	2/19	Offer extended	51,331	11,741	63,072
00003157	0.90	Office assistant III	7/18	5	2/19	Currently interviewing	44,448	7,954	52,402
00001988	0.60	Direct care associate I	2/17	22	4/19	Assessing	18,792	18,792	37,584
00027428	0.50	Activity assistant II	10/17	14	4/19	Assessing	19,782	6,210	25,992
00002248	0.30	Direct care associate III	12/15	36	ASAP	Currently posted	23,665	765	24,430
00002355	0.80	Direct care associate II	9/18	3	ASAP	Currently posted	25,393	25,392	50,785
00002395	0.50	Direct care associate II	9/17	15	ASAP	Currently posted	15,660	15,660	31,320
00002049	0.60	Direct care associate III	9/16	27	N/A	Unfunded	0	0	0
00002091	0.50	Cook I	6/18	6	N/A	Unfunded	0	0	0
00002152	0.80	Custodian, institution	4/18	8	N/A	Unfunded	0	0	0
00002494	0.25	Licensed practical nurse II	2/18	11	N/A	Unfunded	0	0	0
00002035	0.15	Registered nurse III	3/03	189	N/A	Unfunded	0	0	0
00002370	0.50	Direct care associate I	3/17	21	N/A	Unfunded	0	0	0
00002377	0.50	Direct care associate III	9/17	15	N/A	Unfunded	0	0	0
00029744	0.10	Human service program administrator I	N/A	N/A	7/19	Will combine with other FTE fraction	0	0	0
00003844	0.60	Office assistant III	5/18	8		Assessing	29,520	4,694	34,214
00003972	0.75	Mental health case manager II	7/17	17	4/19	Currently posted	49,534	21,116	70,650
00002756	0.50	Registered nurse II	11/18	2	ASAP	Currently posted	37,116	26,484	63,600
00027138	0.97	Registered nurse II	7/16	29	ASAP	Currently posted	72,005	51,379	123,384
00002778	0.90	Registered nurse II	8/18	4	ASAP	Currently posted	73,479	52,432	125,911
00002596	0.80	Cook I	9/18	3	2/19	Offer extended	51,242	6,266	57,508
00003835	0.25	Office assistant III	11/17	13	7/19	Assessing	3,666	13,470	17,136
<u>212.77</u>							<u>\$10,572,981</u>	<u>\$6,613,605</u>	<u>\$17,186,586</u>
<b>360 - Protection and Advocacy Project</b>									
4449	1.00	Disability advocate	11/20/18	1.5	01/02/19	Position filled	\$12,151	\$68,853	\$81,004
4452	1.00	Disability advocate	10/31/18	3	02/01/19	Person hired	23,289	57,715	81,004
4455	1.00	Disability advocate	10/30/18	2	01/03/19	Position filled	0	81,004	81,004
4458	1.00	Disability advocate	11/30/18	2	02/06/19	Person hired	40,502	40,502	81,004
<u>4.00</u>							<u>\$75,942</u>	<u>\$248,074</u>	<u>\$324,016</u>
<b>380 - Job Service North Dakota</b>									
4761	1.00	Administrative assistant II	11/07/15	38	N/A	Position removed in executive budget	\$0	\$0	\$0
4723	1.00	Computer & network specialist I	11/07/15	38	N/A	Position removed in executive budget	0	0	0
4732	1.00	Programmer analyst III	05/01/17	20	N/A	Position removed in executive budget	0	0	0
4777	1.00	Quality assurance investigator II	08/03/15	41	N/A	Position unfunded in executive budget	0	0	0
4799	1.00	Program administrator III	05/30/15	43	N/A	Position removed in executive budget	0	0	0
4811	1.00	Quality assurance investigator II	12/05/18	1	02/15/19	Interviewing candidates to fill position	0	167,282	167,282
4812	1.00	Quality assurance investigator II	12/01/18	1	02/15/19	Interviewing candidates to fill position	0	150,545	150,545

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					Executive Budget		
					General Fund	Special Funds	Total
4859 1.00 Program administrator II	04/01/13	69	N/A	Position removed in executive budget	0	0	0
4708 1.00 Administrative assistant II	05/01/15	44	N/A	Position removed in executive budget	0	0	0
4804 1.00 Document imaging specialist II	11/07/15	38	N/A	Position removed in executive budget	0	0	0
4844 1.00 Program administrator III	03/01/18	10	N/A	Position unfunded in executive budget	0	0	0
4475 1.00 Customer service consultant	03/16/15	46	N/A	Position removed in executive budget	0	0	0
4479 1.00 Customer service consultant	08/01/18	5	N/A	Position removed in executive budget	0	0	0
4480 1.00 Administrative officer II	05/01/18	7	TBD	Under assessment based on federal funding and program requirements	0	172,301	172,301
4497 1.00 Customer service representative	05/01/15	44	N/A	Position unfunded in executive budget	0	0	0
4528 1.00 Customer service specialist	11/01/18	2	02/01/19	Position to be filled	0	147,898	147,898
4621 1.00 Customer service consultant	11/07/15	38	N/A	Position unfunded in executive budget	0	0	0
4642 1.00 Customer service representative	11/07/15	38	N/A	Position unfunded in executive budget	0	0	0
4644 0.80 Customer service representative	11/07/15	38	N/A	Position unfunded in executive budget	0	0	0
<u>18.80</u>					<u>\$0</u>	<u>\$638,026</u>	<u>\$638,026</u>
<b>401 - Insurance Department</b>							
4874 1.00 General counsel	01/01/17	24	N/A	Duties currently performed by the deputy commissioner	\$0	\$267,523	\$267,523
4881 1.00 Licensing specialist I	07/03/18	6	07/01/19	Pending reclassification to special investigator	0	33,602	33,602
4882 1.00 Licensing specialist I	12/03/18	1	01/03/19	Position has been filled	0	115,548	115,548
4893 1.00 Insurance underwriter	09/19/18	3	N/A	Position removed in executive budget	0	0	0
12604 1.00 Policyholder claims investigator I	12/31/18	0	02/01/19	Advertising to fill position	0	33,602	33,602
<u>5.00</u>					<u>\$0</u>	<u>\$450,275</u>	<u>\$450,275</u>
<b>405 - Industrial Commission</b>							
<b>Public Finance Authority</b>							
4975 0.75 Loan officer I	07/17	18	N/A	Under review	\$0	\$129,374	\$129,374
<b>Administrative office</b>							
29352 1.00 Budgeted - Pending classification	07/17	18	N/A	Realigning tasks of current and future staff to meet statutory requirements	0	149,488	149,488
<b>Department of Mineral Resources</b>							
28311 1.00 Oil and gas production analyst	12/17	12	1/18	Position filled	171,997	0	171,997
28758 1.00 Other not classified technician	06/18	6	N/A	Waiting to fill pending 2019-21 budget approval	167,643	0	167,643
28979 1.00 Other not classified technician	12/17	12	N/A	Waiting to fill pending 2019-21 budget approval	111,449	0	111,449
28981 1.00 Other not classified technician	09/18	3	N/A	Waiting to fill pending 2019-21 budget approval	161,053	0	161,053
28982 1.00 Other not classified technician	06/18	6	N/A	Currently interviewing	191,207	0	191,207
29336 1.00 Other not classified technician	12/17	12	N/A	Waiting to fill pending 2019-21 budget approval	161,611	0	161,611
29337 1.00 Other not classified technician	04/18	8	N/A	Currently interviewing	155,983	0	155,983
29406 1.00 Other not classified technician	12/18	1	N/A	Waiting to fill pending 2019-21 budget approval	192,329	0	192,329
<u>9.75</u>					<u>\$1,313,272</u>	<u>\$278,862</u>	<u>\$1,592,134</u>
<b>406 - Department of Labor and Human Rights</b>							
4987 1.00 Compliance investigator	09/08/17	15	TBD	Vacant	\$108,005	\$23,708	\$131,713
26918 1.00 Compliance investigator	11/01/17	14	N/A	Unfunded in the executive budget	0	0	0
28898 1.00 Compliance investigator	12/13/18	1	03/01/19	Advertising to fill position	131,450	37,075	168,525
<u>3.00</u>					<u>\$239,455</u>	<u>\$60,783</u>	<u>\$300,238</u>
<b>408 - Public Service Commission</b>							
5000 1.00 Administrative assistant III	07/06/18	6	N/A	Removed in executive budget	\$0	\$0	\$0
5010 1.00 Weights and measures inspector	10/12/18	3	N/A	Unfunded in executive budget; Advertising to fill position	0	0	0
5012 1.00 Grain warehouse inspector	12/06/18	1	N/A	Removed in executive budget	0	0	0
5009 1.00 Senior public utility analyst	01/16/17	24	N/A	Unfunded during 2017-19 biennium and reclassified to a natural gas pipeline safety inspector in the 2019-21 biennium	165,301	165,303	330,604
<u>4.00</u>					<u>\$165,301</u>	<u>\$165,303</u>	<u>\$330,604</u>
<b>412 - Aeronautics Commission</b>							
5034 1.00 Planner II	06/04/18	7	01/07/19	New hire to start on 1/7/19	\$0	\$187,304	\$187,304
5037 1.00 Planner III	09/28/18	3	01/22/19	New hire to start on 1/22/19	0	200,933	200,933
5039 1.00 Vacant - not classified	N/A	N/A	TBD	FTE position approved in the 2015-17 biennium for future growth in the agency. Position has not been classified or advertised to fill as of 12/31/18.	0	179,825	179,825
<u>3.00</u>					<u>\$0</u>	<u>\$568,062</u>	<u>\$568,062</u>
<b>413 - Department of Financial Institutions</b>							
5052 1.00 Financial examiner I	10/15/18	3	04/01/19	Advertising February and March to fill position	\$0	\$162,990	\$162,990
5051 1.00 Chief examiner	10/11/18	3	06/30/19	Plan to fill from within the department	0	316,780	316,780
<u>2.00</u>					<u>\$0</u>	<u>\$479,770</u>	<u>\$479,770</u>

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Salary and Fringe Benefit Amounts  
 Included in the 2019-21 Biennium  
 Executive Budget

Agency/Position No./Description	Date Vacated	Number Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts Included in the 2019-21 Biennium Executive Budget				
					General Fund	Special Funds	Total		
<b>414 - Securities Department</b>									
	None								
	0.00				\$0	\$0	\$0		
<b>471 - Bank of North Dakota</b>									
10325	1.00	Bank operations senior process specialist	11/18	1	3/19	Currently evaluating position requirements	\$0	\$142,883	\$142,883
10339	1.00	Account/budget specialist I	12/18	0	3/19	Conducting final interviews at this time	0	162,366	162,366
10367	1.00	Trust associate	11/18	1	2/19	Candidate selected, upcoming start date	0	176,540	176,540
10377	0.75	Loan administrator III	5/17	19	TBD	Currently evaluating position requirements	0	130,229	130,229
10382	1.00	Auditor II	11/18	1	1/19	Position filled	0	185,468	185,468
10413	1.00	Administrative staff officer II	N/A	0	1/19	Position filled	0	190,677	190,677
10434	1.00	Administrative officer II	12/18	1	2/19	Candidate selected	0	173,090	173,090
10444	1.00	Programmer analyst II	12/18	0	3/19	Currently evaluating position requirements	0	221,974	221,974
10512	1.00	Unclassified	3/18	9	TBD	Currently evaluating position requirements	0	267,156	267,156
29055	1.00	Collections officer II	11/18	2	4/19	Currently recruiting for this position	0	142,883	142,883
	9.75						\$0	\$1,793,266	\$1,793,266
<b>473 - Housing Finance Agency</b>									
57	1.00	Compliance officer I	5/18	7	7/19	Unfilled	\$0	\$174,702	\$174,702
	1.00						\$0	\$174,702	\$174,702
<b>475 - Mill and Elevator Association</b>									
	1.00	Grain cleaner	12/18	1	1/19	Filled	\$0	\$99,604	\$99,604
	1.00	Grain cleaner	12/18	1	1/19	Filled	0	99,604	99,604
	1.00	Forklift operator	12/18	1	1/19	Filled	0	94,675	94,675
	3.00						\$0	\$293,883	\$293,883
<b>485 - Workforce Safety and Insurance</b>									
	1.00	Registered nurse II	11/01/18	2	03/01/19	Plan to advertise in January 2019	\$0	\$185,713	\$185,713
	1.00	Collections officer III	10/31/18	2	04/01/19	Plan to advertise in the next couple of months	0	163,115	163,115
	1.00	Vocational rehabilitation counselor	09/12/18	4	03/01/19	Plan to advertise soon	0	162,853	162,853
	0.12	Unassigned FTE	N/A	N/A	N/A	N/A	0	18,522	18,522
	0.55	Attorney II	12/31/17	12	03/01/19	Plan to advertise in January 2019	0	140,492	140,492
	3.67						\$0	\$670,695	\$670,695
<b>PUBLIC SAFETY</b>									
<b>504 - Highway Patrol</b>									
00005537	1.00	Highway Patrol officer II	8/18	5	1/20	Vacant - Projected to fill with recruit trooper January 2020	\$109,650	\$17,850	\$127,500
00005446	1.00	Highway Patrol officer I	5/18	8	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005554	1.00	Administrative assistant I	7/17	18	N/A	Position removed in executive budget	0	0	0
00005553	1.00	Highway Patrol sergeant	7/17	18	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00028743	1.00	Highway Patrol officer I	6/18	7	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005547	1.00	Highway Patrol officer II	9/17	16	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005574	1.00	Highway Patrol officer I	1/18	12	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005594	1.00	Administrative assistant I	4/17	21	N/A	Position removed in executive budget	0	0	0
00005445	1.00	Highway Patrol officer II	11/18	2	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005507	1.00	Highway Patrol officer II	10/18	3	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005566	1.00	Administrative assistant I	6/17	19	N/A	Position removed in executive budget	0	0	0
00005495	1.00	Highway Patrol officer II	10/18	3	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005525	1.00	Highway Patrol district commander	6/18	7	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005434	1.00	Cook I	12/17	13	N/A	Position removed in executive budget	0	0	0
00005480	1.00	Administrative assistant I	6/18	7	N/A	Position removed in executive budget	0	0	0
00005533	1.00	Highway Patrol officer II	11/18	2	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
00005555	1.00	Highway Patrol officer I	7/18	6	1/20	Vacant - Projected to fill with recruit trooper January 2020	109,650	17,850	127,500
	17.00						\$1,315,800	\$214,200	\$1,530,000
<b>530 - Department of Corrections and Rehabilitation</b>									
00001411	1.00	Juvenile institution residential specialist I	11/07/18	2	02/01/19	Advertising to fill position	\$132,933	\$0	\$132,933
00029705	1.00	Juvenile institution residential specialist I	11/22/18	2	02/01/19	Advertising to fill position	103,298	0	103,298
00006074	1.00	Senior juvenile corrections specialist	09/05/18	4	TBD	Position under review	158,447	55,671	214,118
00005332	1.00	Parole & probation officer II	12/19/18	1	03/01/19	Advertising to fill position	169,668	0	169,668
00005350	1.00	Parole & probation officer III	12/01/18	1	02/01/19	Filled	202,732	0	202,732
00005367	1.00	Grants & contracts officer II	10/12/18	2	01/07/19	Filled	188,636	0	188,636
00005373	0.75	Parole & probation officer II	08/01/18	5	02/01/19	Filled	136,086	0	136,086
00005392	1.00	Parole & probation officer III	12/01/18	1	02/01/19	Filled	212,283	0	212,283
00023920	1.00	Administrative staff officer I	11/01/18	2	02/01/19	Filled	148,119	0	148,119

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Salary and Fringe Benefit Amounts  
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Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Executive Budget				
					General Fund	Special Funds	Total		
00028943	1.00	Parole & probation officer II	10/15/18	3	03/01/19	Advertising to fill position	170,033	0	170,033
00029381	1.00	Parole & probation officer II	12/01/18	1	03/01/19	Advertising to fill position	169,668	0	169,668
00027032	1.00	Correctional officer II	11/17/18	2	02/01/19	Filled	136,273	0	136,273
00005716	1.00	Correctional officer II	12/01/18	1	01/07/19	Filled	136,968	0	136,968
00005733	1.00	Correctional officer II	12/21/18	1	01/07/19	Filled	103,410	0	103,410
00005759	1.00	Correctional officer I	08/01/18	5	01/07/19	Filled	129,729	0	129,729
00005798	1.00	Correctional officer I	09/01/18	4	02/01/19	Job offer accepted	129,729	0	129,729
00010231	1.00	Correctional officer II	11/22/18	2	01/07/19	Filled	136,968	0	136,968
00023699	1.00	Human relations counselor	11/10/18	2	01/07/19	Filled	168,846	0	168,846
00005903	1.00	Correctional officer III	10/04/18	3	03/01/19	Will be posting February 2019	140,862	0	140,862
00005913	1.00	Correctional officer II	10/20/18	3	02/01/19	Filled	140,801	0	140,801
00005917	1.00	Correctional officer II	10/10/18	3	02/01/19	Filled	136,968	0	136,968
00005943	1.00	Correctional officer II	11/20/18	2	02/01/19	Filled	139,006	0	139,006
00005948	1.00	Correctional officer II	10/01/18	3	02/01/19	Filled	136,968	0	136,968
00005960	1.00	Correctional officer II	10/01/18	3	02/01/19	Filled	151,691	0	151,691
00005962	1.00	Correctional officer II	09/01/18	4	02/01/19	Filled	136,968	0	136,968
00005980	1.00	Correctional officer I	12/28/18	1	02/01/19	Filled	136,968	0	136,968
00006001	1.00	Correctional officer II	11/17/18	2	03/01/19	Filled	136,968	0	136,968
00006007	1.00	Correctional officer I	07/18/18	6	02/01/19	Filled	129,729	0	129,729
00006014	1.00	Correctional officer II	12/31/18	1	03/01/19	Filled	136,968	0	136,968
00025454	1.00	Human relations counselor	12/01/18	1	02/01/19	Advertising to fill position	167,487	0	167,487
00027023	1.00	Correctional officer I	09/01/18	4	02/01/19	Filled	129,729	0	129,729
00028771	1.00	Correctional officer II	12/22/18	1	03/01/19	Filled	136,968	0	136,968
00028777	1.00	Correctional officer II	11/13/18	2	03/01/19	Filled	136,968	0	136,968
00028788	1.00	Correctional officer II	12/15/18	1	03/01/19	Filled	136,968	0	136,968
00028791	1.00	Correctional officer II	10/02/18	3	02/01/19	Filled	136,968	0	136,968
00028793	1.00	Correctional officer II	10/10/18	3	02/01/19	Filled	136,968	0	136,968
00028595	1.00	Industries specialist I	09/01/18	4	TBD	Rough Rider Industries waiting to fill dependent on market conditions	0	115,118	115,118
00028597	1.00	Industries specialist I	05/15/17	20	TBD	Rough Rider Industries waiting to fill dependent on market conditions	0	128,389	128,389
00005672	1.00	Registered nurse II	11/01/18	2	02/01/19	Advertising to fill position	196,713	0	196,713
00005836	1.00	Administrative assistant II	12/26/18	1	02/01/19	Interviewing candidates	161,769	0	161,769
00027039	1.00	Registered nurse II	12/14/18	1	02/01/19	Advertising to fill position	172,744	0	172,744
00028603	1.00	Director of correctional facility operations	07/01/18	6	07/01/19	State penitentiary warden temporarily serving in acting role	349,449	0	349,449
							<u>\$6,120,459</u>	<u>\$299,177</u>	<u>\$6,419,636</u>

540 - Adjutant General, including National Guard and Department of Emergency Services

5621	1.00	Communications specialist I	07/08/18	6	N/A	Position removed in executive budget	\$113,243	\$12,583	\$125,826
5630	1.00	Communications specialist I	07/10/18	6	N/A	Position removed in executive budget	113,243	12,583	125,826
5635	1.00	Communications specialist I	07/15/18	6	N/A	Position removed in executive budget	113,243	12,583	125,826
26275	1.00	Communications specialist I	06/23/17	19	N/A	Position removed in executive budget	113,243	12,583	125,826
5644	1.00	Emergency program specialist III	07/01/17	18	07/01/19	Vacant	88,968	88,968	177,936
5645	1.00	Data process coordinator IV	09/07/18	4	03/01/19	Advertising to fill position	71,998	133,710	205,708
6227	1.00	GIS specialist II	06/09/17	19	N/A	Position removed in executive budget	149,065	0	149,065
24481	1.00	Emergency program specialist II	08/01/18	5	Unknown	Awaiting federal funding	0	159,693	159,693
6132	1.00	Carpenter II	02/01/18	11	N/A	Position removed in executive budget	153,057	0	153,057
6139	1.00	Electronics technician III	05/01/14	56	07/01/19	Position reassigned in executive budget to program manager	226,571	0	226,571
6143	1.00	Plumber III	09/01/18	4	03/01/19	Advertising to fill position	0	201,092	201,092
6163	1.00	Security officer II	02/04/18	11	N/A	Position removed in executive budget	0	164,326	164,326
6184	1.00	Engineering technician III	04/01/17	21	Unknown	Awaiting federal funding	0	132,906	132,906
6198	1.00	Security officer	10/01/14	51	Unknown	Vacant	0	148,908	148,908
6202	1.00	Veterans benefits specialist	04/01/17	21	N/A	Position removed in executive budget	159,288	0	159,288
6204	1.00	Veterans benefits specialist	02/04/17	23	N/A	Position removed in executive budget	136,381	0	136,381
6205	1.00	Security officer	12/09/18	1	Unknown	Awaiting federal funding	0	161,903	161,903
6218	1.00	Custodian	New position	New position	Unknown	Awaiting federal funding	0	100,406	100,406
6233	1.00	Security officer	10/01/14	51	Unknown	Awaiting federal funding	0	148,908	148,908
24456	1.00	Human relations counselor	05/09/17	20	07/01/19	Vacant	183,815	0	183,815
24463	1.00	Security officer	09/16/17	16	Unknown	Awaiting federal funding	0	148,908	148,908
							<u>\$1,622,115</u>	<u>\$1,640,060</u>	<u>\$3,262,175</u>

AGRICULTURE AND ECONOMIC DEVELOPMENT

601 - Department of Commerce

6241	1.00	Commissioner	10/02/18	3	01/01/19	Position filled	\$423,800	\$10,867	\$434,667
6245	1.00	Executive assistant	11/26/18	2	Unknown	Unknown - Department reorganizing	163,419	0	163,419
6246	1.00	Marketing specialist	10/01/18	3	Unknown	Advertised to fill position	157,670	0	157,670
6253	0.60	Administrative assistant	06/01/18	7	N/A	Removed in the executive budget	0	0	0
6258	1.00	Graphic design	06/01/18	7	Unknown	Unknown - Department reorganizing	173,449	0	173,449
6265	1.00	Executive director - Workforce Development	02/05/18	8	Unknown	Unknown - Department reorganizing	277,326	0	277,326
6272	1.00	Unclassified - Innovation	06/01/18	7	Unknown	Unknown - Department reorganizing	221,601	0	221,601

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Salary and Fringe Benefit Amounts  
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Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts				
					General Fund	Special Funds	Total		
6273	1.00	Intellectual property specialist	06/01/18	7	Unknown	Unknown - Department reorganizing	104,959	0	104,959
6276	1.00	Vice president - North Dakota Development Fund	12/17/18	1	01/01/19	Position filled	0	243,623	243,623
6294	1.00	Program administrator	07/01/18	6	Unknown	Unknown - Department reorganizing	0	116,130	116,130
6295	1.00	Program administrator	12/28/18	1	Unknown	Unknown - Department reorganizing	15,872	210,869	226,741
6297	1.00	Program administrator	10/24/18	3	01/22/19	Position filled	66,970	100,456	167,426
23972	1.00	Public relations strategist	06/01/18	7	Unknown	Unknown - Department reorganizing	277,326	0	277,326
23975	1.00	Program and grants officer	06/01/18	7	N/A	Removed in the executive budget	0	0	0
25553	1.00	Unclassified	06/01/18	7	Unknown	Unknown - Department reorganizing	109,925	0	109,925
25555	1.00	Unclassified - Events	06/01/18	7	Unknown	Unknown - Department reorganizing	221,601	0	221,601
27117	1.00	Administrative assistant	10/01/18	3	Unknown	Unknown - Department reorganizing	175,408	12,194	187,602
6266	1.00	Administrative assistant	02/12/18	11	N/A	Removed in the executive budget	0	0	0
6285	1.00	Executive director	07/24/17	18	N/A	Removed in the executive budget	0	0	0
6286	1.00	Program specialist	08/01/17	19	N/A	Removed in the executive budget	0	0	0
<u>19.60</u>							<u>\$2,389,326</u>	<u>\$694,139</u>	<u>\$3,083,465</u>
<b>602 - Agriculture Commissioner</b>									
28837	1.00	Agriculture program inspector	08/21/15	40	10/01/19	Plans underway for two state-inspected plants in Belfield	\$75,025	\$74,487	\$149,512
6321	1.00	Program coordinator	05/25/17	19	05/01/19	Removed in the executive budget but agency intends to fill position	4,716	0	4,716
6317	1.00	Division director	03/16/18	9	04/01/19	Removed in the executive budget but agency intends to fill position	8,300	0	8,300
6323	1.00	Plant protection specialist	10/31/18	2	03/04/19	Advertising to fill position	140,476	0	140,476
6322	1.00	Pesticide inspector supervisor	11/30/18	1	02/04/19	Offer made	0	171,168	171,168
6333	1.00	Office assistant	12/31/18	0	02/18/19	Interviews scheduled	116,608	12,956	129,564
<u>6.00</u>							<u>\$345,125</u>	<u>\$258,611</u>	<u>\$603,736</u>
<b>627 - Upper Great Plains Transportation Institute</b>									
00018710	1.00	Research fellow	12/30/18	1	07/01/19	Updating position description	\$69,793	\$69,793	\$139,586
00027499	1.00	Research technician	09/01/18	6	01/07/19	Filled in January	107,490	11,943	119,433
00101185	1.00	Technical training	12/31/16	25	Unknown	Working with contract sponsor	0	221,391	221,391
00021727	1.00	Associate research fellow	06/07/17	19	01/07/19	Filled in January	0	160,262	160,262
00026743	1.00	Instruction design	05/02/16	33	Unknown	Working with contract sponsor	0	150,824	150,824
00101459	1.00	Administrative assistant	01/17/18	12	Unknown	Working with contract sponsor	0	78,496	78,496
<u>6.00</u>							<u>\$177,283</u>	<u>\$692,709</u>	<u>\$869,992</u>
<b>628 - Branch research stations</b>									
21095	0.50	Center director Dickinson Research Extension Center	11/01/18	2		On hold	\$152,560	\$0	\$152,560
101051	1.00	Beef herdsman	05/13/18	7	03/01/19	Recruiting	137,445	0	137,445
100505	1.00	Agriculture research technician	08/04/18	5		Will recruit when funds are available	0	105,412	105,412
21585	1.00	Agriculture research technician	05/01/18	7		Will recruit when funds are available	0	143,033	143,033
102786	1.00	Plant pathology research specialist	12/19/18	1	06/19/19	Recruiting in February	145,714	0	145,714
<u>4.50</u>							<u>\$435,719</u>	<u>\$248,445</u>	<u>\$684,164</u>
<b>630 - North Dakota State University Extension Service</b>									
23663	0.33	Vice president of agricultural affairs	08/16/18	5		Serving as Interim Provost	\$219,325	\$0	\$219,325
18663	1.00	Extension agent - Foster	08/04/18	5		On hold	96,613	64,409	161,022
18720	1.00	Extension agent - Grant	07/21/18	6	01/01/19	Currently recruiting	90,493	60,329	150,822
18852	1.00	Extension agent - Dickey	10/11/18	3		On hold	75,198	50,132	125,330
19257	1.00	Extension agent - Walsh	11/02/18	2		On hold	77,587	51,725	129,312
19366	1.00	Extension agent - Williams	07/14/18	6	01/02/19	Offer accepted	80,588	53,725	134,313
19488	1.00	Extension agent - McHenry	09/01/18	4	02/01/19	Currently recruiting	85,360	56,907	142,267
19610	1.00	Extension agent - Emmons	06/09/18	7	01/01/19	Currently recruiting	76,348	50,898	127,246
20131	1.00	Extension agent - Cass	12/07/17	12	01/01/19	Interviewing	94,148	62,766	156,914
20180	1.00	Extension agent - Ramsey	08/04/18	5		On hold	89,310	59,540	148,850
20660	1.00	Extension agent - McKenzie	04/27/18	8	01/01/19	Interviewing	78,257	52,172	130,429
20723	1.00	Extension agent - Cass	12/01/18	1	02/01/19	Reviewing applications	113,426	75,617	189,043
21056	1.00	Extension agent - Bowman	08/01/18	5	01/01/19	Interviewing	81,712	54,475	136,187
21821	1.00	Extension agent - Cass	09/01/18	4		On hold	101,939	67,960	169,899
27331	1.00	Extension agent - Cass	09/05/18	4		On hold	82,652	55,102	137,754
100336	1.00	Extension agent - Dunn	10/19/18	3	03/01/19	Approved to recruit	86,350	57,566	143,916
101193	1.00	Extension agent - McIntosh	02/01/18	10		On hold	64,113	42,742	106,855
103666	1.00	Extension agent - Morton	11/24/18	1	03/01/19	Approved to recruit	76,876	51,250	128,126
19882	0.70	Information technology systems specialist	12/01/18	1		Department is reorganizing	96,367	0	96,367
18687	1.00	Extension parent educator	11/23/17	13		On hold	62,646	73,541	136,187
20184	0.60	Associate professor	10/22/17	14	02/01/19	Interviewing	122,982	0	122,982
101217	0.48	Research specialist	05/26/18	7		On hold	86,773	0	86,773
21093	0.50	Center director Dickinson Research Extension Center	11/01/18	2		On hold	165,908	0	165,908
<u>20.61</u>							<u>\$2,204,971</u>	<u>\$1,040,856</u>	<u>\$3,245,827</u>



AM2  
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Salary and Fringe Benefit Amounts  
Included in the 2019-21 Biennium  
Executive Budget

Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts Included in the 2019-21 Biennium Executive Budget		
					General Fund	Special Funds	Total
<b>638 - Northern Crops Institute</b>							
18820 1.00 Office manager	10/21/18	3	01/01/19	Interviewing	\$148,792		\$148,792
1.00					\$148,792	\$0	\$148,792
<b>640 - Main Research Center</b>							
20045 0.25 Associate director	07/01/18	6	01/01/19	Interviewing	\$116,896	\$0	\$116,896
20997 1.00 Administrative assistant to associate director	09/05/18	4		Will recruit when the associate director position is filled	147,799	0	147,799
18537 1.00 Res assistant professor	06/30/18	6		Evaluating position	0	150,638	150,638
19542 0.70 Assistant professor	08/16/16	28	02/01/19	Offering	158,041	0	158,041
20564 0.95 Account technician	08/27/18	4	01/01/19	Recruiting	121,380	0	121,380
21542 0.75 Student services director	08/02/18	5	01/01/19	Interviewing	124,456	0	124,456
26346 1.00 Research specialist	08/16/18	4	04/01/19	Recruiting	99,850	50,368	150,218
18632 0.36 Associate professor	09/16/18	3		Faculty member is interim department head	82,137	0	82,137
18681 0.60 Admin secretary	08/07/18	5		On hold	54,216	0	54,216
20001 1.00 Research specialist	08/04/18	5	01/01/19	Offer accepted	116,896	0	116,896
20185 0.40 Associate professor	01/01/18	12	02/01/19	Interviewing	85,691	0	85,691
20244 0.75 Nutritional research specialist	06/01/18	7	02/01/19	Recruiting	52,900	0	52,900
28621 1.00 Meat science research technician	04/12/18	9	05/19/19	Requesting to recruit	86,604	43,426	130,030
102770 1.00 Research scientist	09/10/18	4		Evaluating	0	139,960	139,960
20860 1.00 Microbiologist	11/20/18	2	01/01/19	Recruiting	125,854	56,294	182,148
27749 1.00 Post doctoral research position	07/18/18	6	03/01/19	Recruiting	0	147,233	147,233
28518 1.00 Post doctoral research position	09/29/18	3		Evaluating	0	144,448	144,448
102079 1.00 Post doctoral research position	01/01/17	24	04/01/19	Offer accepted	0	124,335	124,335
102425 1.00 Post doctoral research position	05/23/18	7		Evaluating	0	117,763	117,763
102602 1.00 Post doctoral research position	05/16/18	7		Evaluating	0	117,763	117,763
18938 1.00 Post doctoral research position	06/23/18	7		Evaluating	0	133,884	133,884
19731 1.00 Research specialist	10/01/18	3	03/01/19	Reviewing applicants	107,822	95,616	203,438
20885 1.00 Assistant director of seedstocks	10/24/18	3	03/01/19	Recruiting	0	196,962	196,962
21116 1.00 Post doctoral research position	06/25/18	6		Evaluating	0	114,798	114,798
25210 1.00 International exchange scientist	05/31/18	7		Evaluating	0	41,772	41,772
25592 0.90 Professor	12/29/16	24	02/19/19	Offer accepted	318,100	0	318,100
26403 0.52 Research specialist	05/26/18	7		Evaluating	0	74,062	74,062
27302 1.00 Food technician specialist	07/08/17	17		On hold	94,939	31,646	126,585
28513 1.00 Post doctoral research position	09/26/17	16	05/01/19	Recruiting	0	120,461	120,461
18890 0.75 Research specialist	07/19/18	6		Requesting to recruit	74,684	49,789	124,473
21844 1.00 Research specialist	07/03/18	6	03/01/19	Recruiting	131,133	43,711	174,844
21106 0.60 Administrative secretary	06/28/17	18		On hold	69,024	0	69,024
21266 0.60 Professor	07/01/18	6		Serving as interim vice president for research	187,336	0	187,336
27875 1.00 Post doctoral research position	12/01/18	1		Evaluating	0	110,849	110,849
18609 1.00 Professor	06/01/18	7	03/19/19	Recruiting	267,386	94,288	361,674
30.13					\$2,623,144	\$2,200,066	\$4,823,210
<b>649 - Agronomy Seed Farm</b>							
0.00 None					\$0	\$0	\$0
<b>670 - Racing Commission</b>							
0.00 None					\$0	\$0	\$0
<b>NATURAL RESOURCES AND HIGHWAYS</b>							
<b>701 - State Historical Society</b>							
127 1.00 Custodian	03/15/18	10	02/01/19	Advertising to fill position	\$101,270	\$0	\$101,270
28927 1.00 Exhibit specialist I	04/09/18	9	03/18/19	Offer accepted	143,000	0	143,000
6486 1.00 Administrative assistant I	06/29/18	6	02/01/19	Advertising to fill position	125,125		125,125
6469 1.00 Administrative assistant II	06/29/18	6	05/01/19	Holding open until April to help cover voluntary separation incentive payments (Temporary position currently taking on duties)	50,050	75,075	125,125
6478 1.00 Multimedia specialist	08/31/18	4	03/01/19	Will advertise in February	145,980	0	145,980
6504 1.00 Archivist I	11/30/18	1	04/01/19	Will advertise in February	137,045	0	137,045
6.00					\$702,470	\$75,075	\$777,545
<b>709 - Council on the Arts</b>							
0.00 None					\$0	\$0	\$0
<b>720 - Game and Fish Department</b>							
6546 1.00 Programmer analyst II	09/01/18	5	05/01/19	Position is part of information technology unification	\$0	\$0	\$0

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Salary and Fringe Benefit Amounts  
Included in the 2019-21 Biennium  
Executive Budget

Agency/Position No./Description	Date Vacated	Number of Months Vacant	Date Expected to Be Filled	Current Status/Agency Response	Executive Budget		
					General Fund	Special Funds	Total
6595 1.00 Public information specialist III	06/01/18	8	04/01/19	Held open until Governor's executive budget address - Anticipate hiring in April	0	186,238	186,238
6607 1.00 Administrative assistant I	08/01/18	6	04/01/19	Held open until Governor's executive budget address - Anticipate hiring in April	0	136,400	136,400
<u>3.00</u>					<u>\$0</u>	<u>\$322,638</u>	<u>\$322,638</u>
<b>750 - Parks and Recreation Department</b>							
6705 1.00 Computer & network specialist III	07/01/18	6	Not filling	Position is part of information technology unification	\$0	\$0	\$0
<u>1.00</u>					<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<b>770 - State Water Commission</b>							
6733 1.00 Water resource engineer II	10/24/18	2	02/01/19	Offer made and accepted	\$0	\$181,351	\$181,351
6754 1.00 Hydrologist III	11/01/18	2	02/15/19	Reviewing job description and advertisement	0	199,711	199,711
6779 1.00 Natural resource economist	09/15/18	3	02/15/19	Interviewing	0	200,061	200,061
28961 1.00 Water resource administrator I	12/04/18	1	02/15/19	Reviewing job description and advertisement	0	172,519	172,519
<u>4.00</u>					<u>\$0</u>	<u>\$753,642</u>	<u>\$753,642</u>
<b>801 - Department of Transportation</b>							
6818 1.00 Deputy director for business support	06/30/17	18	04/01/19	Unfunded in executive budget - Information technology unification	\$0	\$0	\$0
6823 1.00 Administrative assistant II	04/30/18	8	04/01/19	Under executive review	0	139,055	139,055
6826 1.00 Attorney II	09/03/18	4	04/01/19	Under executive review	0	223,791	223,791
6831 1.00 Programmer analyst II	09/25/18	3	04/01/19	Unfunded in executive budget - Information technology unification	0	0	0
6833 1.00 Computer & network specialist III	04/06/18	9	03/01/19	Advertising to fill position; closes 1/24 - Unfunded in executive budget - Information technology unification	0	0	0
6852 1.00 Telecommunications analyst II	10/31/18	2	04/01/19	Unfunded in executive budget - Information technology unification	0	0	0
6855 1.00 Transportation management officer I	10/01/18	3	01/14/19	Hired	0	165,115	165,115
6864 1.00 Transportation management officer I	10/31/18	2	04/01/19	Under executive review	0	179,571	179,571
6913 1.00 Licensing specialist I	12/17/18	0	01/16/19	Hired	0	130,842	130,842
6936 1.00 Licensing specialist I	11/02/18	2	01/01/19	Hired	0	130,842	130,842
6941 1.00 Licensing specialist I	12/27/18	0	04/01/19	Under executive review	0	130,842	130,842
6963 1.00 Transportation project manager	04/30/17	20	04/01/19	Under executive review	0	194,567	194,567
6964 1.00 Planner IV	04/30/18	8	04/01/19	Under executive review	0	267,175	267,175
7019 1.00 Transportation engineer I	05/01/18	8	03/01/19	Job posting pending	0	187,097	187,097
7020 1.00 Environmental scientist II	04/24/18	8	03/01/19	Job posting pending	0	185,768	185,768
7042 1.00 Transportation senior manager	06/30/18	6	04/01/19	Job posting pending	0	222,187	222,187
7045 1.00 Transportation engineer III	12/17/18	0	03/01/19	Advertising to fill position; closes 1/21	0	247,111	247,111
7054 1.00 Transportation project manager	03/07/17	21	04/01/19	Under executive review	0	194,823	194,823
7065 1.00 Archeologist II	12/31/18	0	03/01/19	Advertising to fill position; closes 1/24	0	247,912	247,912
7086 1.00 Business operations manager	02/20/18	10	04/01/19	Under executive review	0	210,020	210,020
7122 1.00 Transportation services supervisor II, Bismarck NE	08/16/18	4	02/01/19	Job offer pending	0	178,528	178,528
7140 1.00 Transportation technician II, Center	11/16/18	1	04/01/19	Job posting pending	0	158,313	158,313
7141 1.00 Transportation senior manager	08/01/18	5	04/01/19	Job posting pending	0	222,300	222,300
7146 1.00 Transportation technician II, Bismarck	12/07/18	1	04/01/19	Job posting pending	0	158,409	158,409
7153 1.00 Transportation technician II	08/02/18	5	01/01/19	Filled	0	164,492	164,492
7185 1.00 Transportation technician I, Valley City West	12/31/18	0	02/01/19	Hired	0	193,359	193,359
7208 1.00 Fleet & equipment technician III	08/10/18	5	04/01/19	Advertising to fill position (open until filled)	0	152,017	152,017
7265 1.00 Transportation technician II, Parshall	12/31/18	0	04/01/19	Advertising to fill position (open until filled)	0	167,838	167,838
7289 1.00 Transportation technician II	11/01/18	2	01/01/19	Hired	0	158,409	158,409
7299 1.00 Transportation technician II, Killdeer/Halliday	12/01/18	1	04/01/19	Advertising to fill position (open until filled)	0	158,409	158,409
7300 1.00 Transportation services supervisor II, Richardton	02/28/18	10	04/01/19	Under executive review	0	179,245	179,245
7302 1.00 Transportation technician II, Belfield	07/31/18	5	04/01/19	Advertising to fill position (open until filled)	0	158,409	158,409
7321 1.00 Transportation technician II, Killdeer/Halliday	12/01/18	1	04/01/19	Advertising to fill position (open until filled)	0	158,409	158,409
7328 1.00 Transportation technician I, Larimore	12/01/18	1	02/04/19	Hired	0	158,409	158,409
7363 1.00 Transportation technician II, Michigan	12/01/18	1	02/11/19	Hired	0	163,154	163,154
7378 1.00 Transportation technician I, Crosby	11/27/17	13	04/01/19	Advertising to fill position	0	158,409	158,409
7383 1.00 Transportation technician II, Watford City	08/02/18	5	04/01/19	Advertising to fill position	0	158,409	158,409
7387 1.00 Transportation technician I, Williston North	02/16/18	10	04/01/19	Advertising to fill position	0	158,409	158,409
7389 1.00 Transportation technician II, Stanley	06/25/18	6	04/01/19	Advertising to fill position	0	158,409	158,409
7392 1.00 Transportation technician I, Stanley	04/30/18	8	04/01/19	Advertising to fill position	0	158,409	158,409
7394 1.00 Transportation technician II, Williston South	08/01/18	5	04/01/19	Advertising to fill position	0	158,409	158,409
7402 1.00 Transportation technician I, Watford City	04/30/17	20	04/01/19	Advertising to fill position	0	158,409	158,409
7403 1.00 Transportation technician II, Watford City	11/16/18	1	04/01/19	Advertising to fill position	0	159,412	159,412
7407 1.00 Transportation technician III, New Town	12/01/18	1	04/01/19	Job posting pending	0	175,579	175,579

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Agency/Position No./Description	Date Vacated	Number of Months Vacant January 2019	Date Expected to Be Filled	Current Status/Agency Response	Salary and Fringe Benefit Amounts Included in the 2019-21 Biennium Executive Budget		
					General Fund	Special Funds	Total
					7471 1.00 Pilot	02/01/18	11
7485 1.00 Programmer analyst II	09/18/18	3	04/01/19	Unfunded in executive budget - Information technology unification	0	0	0
7501 1.00 Transportation engineer manager/team lead	12/01/18	1	01/01/19	Filled	0	279,902	279,902
7511 1.00 Fleet & equipment technician III	06/30/17	18	04/01/19	Under executive review	0	173,218	173,218
7517 1.00 Transportation technician I, Pekin	11/21/17	13	04/01/19	Under executive review	0	164,492	164,492
7518 1.00 Transportation technician II, Jamestown	12/17/18	0	02/01/19	Hired	0	158,409	158,409
7535 1.00 Maintenance mechanic II	11/19/18	1	02/01/19	Advertising to fill position/interviewing	0	156,803	156,803
7544 1.00 Fleet & equipment technician III	09/19/17	15	04/01/19	Advertising to fill position (open until filled)	0	185,902	185,902
7547 1.00 Storekeeper II	12/31/18	0	04/01/19	Job posting pending	0	151,182	151,182
7606 1.00 Transportation engineer II	07/06/18	6	03/01/19	Job posting pending	0	187,097	187,097
7618 1.00 Highway maintenance coordinator	12/31/15	35	04/01/19	Advertising to fill position (open until filled)	0	232,034	232,034
7629 1.00 Engineering technician II	04/20/18	8	03/01/19	Job posting pending	0	129,728	129,728
7645 1.00 Engineering technician II	08/21/18	4	03/01/19	Job posting pending	0	129,728	129,728
7647 1.00 Transportation engineer I	06/21/18	6	04/01/19	Under executive review	0	187,097	187,097
7667 1.00 Engineering technician IV	09/27/18	3	04/01/19	Job posting pending	0	184,755	184,755
7701 1.00 Transportation engineer III	04/30/18	8	04/01/19	Under executive review	0	217,667	217,667
7704 0.25 Engineering technician II	-	-	N/A	Department accommodation	0	0	0
7717 1.00 Transportation engineer III	11/30/17	13	03/01/19	Advertising to fill position; closes 1/17	0	217,667	217,667
7740 1.00 Administrative assistant II	12/31/18	0	02/01/19	Advertising to fill position/interviewing	0	139,055	139,055
7749 1.00 Engineering technician II	05/12/18	8	01/03/19	Hired	0	138,489	138,489
7756 1.00 Transportation engineer II	09/30/18	3	04/01/19	Job posting pending	0	209,971	209,971
7760 1.00 Transportation engineer III	12/31/18	0	02/04/19	Hired	0	239,525	239,525
7770 1.00 Engineering technician II	04/20/17	20	04/01/19	Advertising to fill position	0	129,728	129,728
7783 1.00 Engineering technician III	07/15/18	5	03/01/19	Job posting pending	0	149,865	149,865
7799 1.00 Transportation engineer III	06/30/18	6	03/01/19	Job posting pending	0	217,667	217,667
7810 1.00 Transportation engineer II	06/16/18	6	04/01/19	Job posting pending	0	187,097	187,097
7814 1.00 Surveyor III	03/25/17	21	04/01/19	Under executive review	0	218,458	218,458
10317 1.00 Transportation engineer I	11/15/18	2	03/01/19	Advertising to fill position; closes 1/22	0	187,097	187,097
24489 1.00 Transportation technician I, New Town	10/31/18	2	04/01/19	Advertising to fill position	0	158,409	158,409
24490 1.00 Transportation technician II, Watford City	09/20/18	3	04/01/19	Advertising to fill position	0	158,409	158,409
28211 1.00 Transportation technician III, Bismarck NE	12/31/18	0	02/15/19	Advertising to fill position/interviewing	0	178,636	178,636
29529 1.00 Environmental scientist II	09/28/18	3	04/01/19	Under executive review	0	177,515	177,515
<u>75.25</u>					<u>\$0</u>	<u>\$12,490,652</u>	<u>\$12,490,652</u>
<u>660.98</u>	Total all agencies				<u>\$38,455,781</u>	<u>\$40,157,131</u>	<u>\$78,612,912</u>

NOTE: This report does not include North Dakota University System campuses.

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Prepared by the Legislative Council staff  
for House EE  
February 4, 2019

**HOUSE BILL NO. 1020**  
**LISTING OF PROPOSED CHANGES TO THE BASE BUDGET**

**Department - NDSU Main Research Center**

**Proposed funding changes:**

<b>Description</b>	<b>FTE</b>	<b>General Fund</b>	<b>Special Funds</b>	<b>Total</b>
1 Adjusts funding for miscellaneous expenses		(\$2,955,742)	\$3,000,000	\$44,258
2 Reduces funding for capital bond payments		(\$65,091)	\$0	(\$65,091)
3 Reduces capital funding from special funds		\$0	(\$5,997,398)	(\$5,997,398)
4 Adds SIIF funding for extraordinary repairs		\$0	\$1,440,465	\$1,440,465
5 Adds funding for compensation changes		\$1,837,917	\$1,214,472	\$3,052,389
6 Adds one-time funding for a Williston seed cleaning plant		\$750,000	\$0	\$750,000
7 Adds one-time funding from donations for a Williston greenhouse		\$0	\$500,000	\$500,000
7 Base payroll adjustment	3.96			\$0
Total proposed funding changes	<u>3.96</u>	<u>(\$432,916)</u>	<u>\$157,539</u>	<u>(\$275,377)</u>

**Other proposed changes:**

- 1 Add carryover section for Williston seed cleaning plant (19.0208.01001 - Senator Bekkedahl)
- 2
- 3
- 4

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for House EE  
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**HOUSE BILL NO. 1020**  
**LISTING OF PROPOSED CHANGES TO THE BASE BUDGET**

**Department - Northern Crops Institute**

**Proposed funding changes:**

<b>Description</b>	<b>FTE</b>	<b>General Fund</b>	<b>Special Funds</b>	<b>Total</b>
1 Adjusts funding for miscellaneous expenses		(\$37,738)	\$100,000	\$62,262
2 Adds funding for compensation changes		\$87,154	\$37,010	\$124,164
3 Base payroll adjustment	1.00			\$0
4				\$0
5				\$0
6				\$0
7				\$0
Total proposed funding changes	<u>1.00</u>	<u>\$49,416</u>	<u>\$137,010</u>	<u>\$186,426</u>

**Other proposed changes:**

- 1
- 2
- 3
- 4

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HOUSE BILL NO. 1020  
LISTING OF PROPOSED CHANGES TO THE BASE BUDGET

Department - NDSU Extension Service

Proposed funding changes:

Description	FTE	General Fund	Special Funds	Total
1 Adds funding for compensation changes		\$1,084,918	\$982,267	\$2,067,185
2 Increases funding for miscellaneous expenses, including the removal of 4H fees		\$100,000	\$0	\$100,000
3 Base payroll adjustment	(10.47)			\$0
4				\$0
5				\$0
6				\$0
7				\$0
Total proposed funding changes	<u>(10.47)</u>	<u>\$1,184,918</u>	<u>\$982,267</u>	<u>\$2,167,185</u>

Other proposed changes:

- 1
- 2
- 3
- 4

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Prepared by the Legislative Council staff  
for House EE  
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**HOUSE BILL NO. 1020**  
**LISTING OF PROPOSED CHANGES TO THE BASE BUDGET**

**Department - Branch research centers**

**Proposed funding changes:**

<b>Description</b>	<b>FTE</b>	<b>General Fund</b>	<b>Special Funds</b>	<b>Total</b>
1 Reduces funding for operating expenses		(\$1,202,560)	\$0	(\$1,202,560)
2 Reduces funding for capital bond payments		(\$23,091)	\$0	(\$23,091)
3 Adds funding for the Oakes irrigation site at the Carrington research center		\$0	\$200,000	\$200,000
4 Adds funding for compensation changes		\$663,855	\$259,337	\$923,192
5 Base payroll adjustment	(0.48)			\$0
6				\$0
7				\$0
Total proposed funding changes	<u>(0.48)</u>	<u>(\$561,796)</u>	<u>\$459,337</u>	<u>(\$102,459)</u>

**Other proposed changes:**

- 1 Add an exemption section for the \$1.5 million of special funds authority for the Williston seed cleaning plant.
- 2
- 3
- 4

A441  
HB 1020  
2/4/2019

Prepared by the Legislative Council staff  
for House EE  
February 4, 2019

**HOUSE BILL NO. 1020**  
**LISTING OF PROPOSED CHANGES TO THE BASE BUDGET**

**Department - Upper Great Plains Transportation Institute**

**Proposed funding changes:**

<b>Description</b>	<b>FTE</b>	<b>General Fund</b>	<b>Special Funds</b>	<b>Total</b>
1 Reduce funding for miscellaneous expenses (2% base general fund)		(\$70,863)		(\$70,863)
2 Adds funding for compensation changes		\$141,095	\$257,255	\$398,350
3 Adds ongoing funding to continue the road and bridge study (Check with GO)		\$975,000	\$0	\$975,000
4				\$0
5				\$0
6				\$0
7				\$0
Total proposed funding changes		<u>\$1,045,232</u>	<u>\$257,255</u>	<u>\$1,302,487</u>

**Other proposed changes:**

- 1
- 2
- 3
- 4

P.S



Att 1  
 HB 1020  
 2/8/2019

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1020

Page 1, replace lines 17 through 24 with:

	Base Level	Adjustments or Enhancements	Appropriation
Extension service	\$51,188,489	\$2,167,185	\$53,355,674
Soil conservation committee	1,091,520	0	1,091,520
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	26,646,689	982,267	27,628,956
Total general fund	\$25,633,320	\$1,184,918	\$26,818,238
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 3 through 9 with:

	Base Level	Adjustments or Enhancements	Appropriation
Northern crops institute	\$3,642,721	\$186,426	\$3,829,147
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	1,755,830	137,010	1,892,840
Total general fund	\$1,886,891	\$49,416	\$1,936,307
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 12 through 19 with:

	Base Level	Adjustments or Enhancements	Appropriation
Upper great plains transportation institute	\$22,060,242	\$777,487	\$22,837,729
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	18,617,068	257,255	18,874,323
Total general fund	\$3,443,174	\$520,232	\$3,963,406
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 22 through 28 with:

	Base Level	Adjustments or Enhancements	Appropriation
Main research center	\$108,642,243	(\$775,377)	\$107,866,866
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	59,084,828	157,539	59,242,367
Total general fund	\$49,557,415	(\$932,916)	\$48,624,499
Full-time equivalent positions	336.12	3.93	340.05"

Page 3, replace lines 1 through 13 with:

	Base Level	Adjustments or Enhancements	Appropriation
Dickinson research center	\$6,825,551	(\$152,469)	\$6,673,082
Central grasslands research center	3,423,624	(56,881)	3,366,743
Hettinger research center	4,975,133	(22,900)	4,952,233

Langdon research center	2,964,607	(16,696)	2,947,911
North central research center	4,953,652	314	4,953,966
Williston research center	5,118,890	(50,125)	5,068,765
Carrington research center	9,175,491	198,300	9,373,791
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	20,281,691	459,338	20,741,029
Total general fund	\$17,155,257	(\$559,795)	\$16,595,462
Full-time equivalent positions	110.29	(0.48)	109.81"

Page 3, replace lines 16 through 20 with:

"		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
Agronomy seed farm	\$1,536,129	\$26,205	\$1,562,334
Total special funds	\$1,536,129	\$26,205	\$1,562,334
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 23 through 27 with:

"		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
Grand total general fund	\$97,676,057	\$261,855	\$97,937,912
Grand total other funds	127,922,235	2,019,614	129,941,849
Grand total all funds	\$225,598,292	\$2,281,469	\$227,879,761"

Page 3, remove lines 30 and 31

Page 4, replace lines 1 through 5 with:

"	<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
Seed cleaning plants		\$1,500,000	\$750,000
Extraordinary repairs		0	1,440,465
Junior master gardener program		15,000	0
Road and bridge asset management system		300,000	0
Total all funds		\$1,815,000	\$2,190,465
Total other funds		1,700,000	1,940,465
Total general fund		\$115,000	\$250,000"

Page 4, after line 13, insert:

**"SECTION 4. ESTIMATED INCOME - STRATEGIC INVESTMENT AND IMPROVEMENTS FUND.** The estimated income line item in subdivision 4 of section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs."

Page 5, after line 7, insert:

**"SECTION 10. EXEMPTION - WILLISTON SEED CLEANING PLANT.** The \$1,500,000 of special funds appropriation authority for the Williston research extension center included in subdivision 5 of section 1 of 2017 Senate Bill No. 2020 for a seed cleaning plant is not subject to the provisions of section 54-44.1-11 and may be continued and expended by the Williston research extension center for the seed cleaning plant during the biennium beginning July 1, 2019, and ending June 30, 2021."

Re-number accordingly

AM 1  
 HB 1020  
 2/8/2019

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of House Action**

	<b>Base Budget</b>	<b>House Changes</b>	<b>House Version</b>
<b>Transportation Institute</b>			
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	<u>18,617,068</u>	<u>257,255</u>	<u>18,874,323</u>
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE	43.88	0.00	43.88
<b>Branch Research Centers</b>			
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	<u>20,281,691</u>	<u>459,338</u>	<u>20,741,029</u>
General fund	\$17,155,257	(\$559,795)	\$16,595,462
FTE	110.29	(0.48)	109.81
<b>NDSU Extension Service</b>			
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	<u>26,646,689</u>	<u>982,267</u>	<u>27,628,956</u>
General fund	\$25,633,320	\$1,184,918	\$26,818,238
FTE	252.98	(10.47)	242.51
<b>Northern Crops Institute</b>			
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	<u>1,755,830</u>	<u>137,010</u>	<u>1,892,840</u>
General fund	\$1,886,891	\$49,416	\$1,936,307
FTE	11.80	1.00	12.80
<b>Main Research Center</b>			
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	<u>59,084,828</u>	<u>157,539</u>	<u>59,242,367</u>
General fund	\$49,557,415	(\$932,916)	\$48,624,499
FTE	336.12	3.93	340.05
<b>Agronomy Seed Farm</b>			
Total all funds	\$1,536,129	\$26,205	\$1,562,334
Less estimated income	<u>1,536,129</u>	<u>26,205</u>	<u>1,562,334</u>
General fund	\$0	\$0	\$0
FTE	3.00	0.00	3.00
<b>Bill total</b>			
Total all funds	\$225,598,292	\$2,281,469	\$227,879,761
Less estimated income	<u>127,922,235</u>	<u>2,019,614</u>	<u>129,941,849</u>
General fund	\$97,676,057	\$261,855	\$97,937,912
FTE	758.07	(6.02)	752.05

**House Bill No. 1020 - Transportation Institute - House Action**

	<b>Base Budget</b>	<b>House Changes</b>	<b>House Version</b>
Upper Great Plains Trans. Institute	\$22,060,242	\$777,487	\$22,837,729
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	<u>18,617,068</u>	<u>257,255</u>	<u>18,874,323</u>
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE	43.88	0.00	43.88

**Department 627 - Transportation Institute - Detail of House Changes**

Att 1  
HB 1020  
2/8/2019

	Adds Funding for Salary and Benefit Increases <sup>1</sup>	Adjusts Funding for Miscellaneous Expenses <sup>2</sup>	Adds Funding for a Road and Bridge Study <sup>3</sup>	Total House Changes
Upper Great Plains Trans. Institute	\$398,350	(\$70,863)	\$450,000	\$777,487
Total all funds	\$398,350	(\$70,863)	\$450,000	\$777,487
Less estimated income	257,255	0	0	257,255
General fund	\$141,095	(\$70,863)	\$450,000	\$520,232
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$83,222	\$136,645	\$219,867
Health insurance increase	57,873	120,610	178,483
Total	\$141,095	\$257,255	\$398,350

<sup>2</sup> Funding is reduced by \$70,863 from the general fund for miscellaneous expenses.

<sup>3</sup> Ongoing funding of \$450,000 from the general fund is added to continue the road and bridge study.

**House Bill No. 1020 - Branch Research Centers - House Action**

	Base Budget	House Changes	House Version
Dickinson Research Center	\$6,825,551	(\$152,469)	\$6,673,082
Central Grasslands Research Center	3,423,624	(56,881)	3,366,743
Hettinger Research Center	4,975,133	(22,900)	4,952,233
Langdon Research Center	2,964,607	(16,696)	2,947,911
North Central Research Center	4,953,652	314	4,953,966
Williston Research Center	5,118,890	(50,125)	5,068,765
Carrington Research Center	9,175,491	198,300	9,373,791
Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
Less estimated income	20,281,691	459,338	20,741,029
General fund	\$17,155,257	(\$559,795)	\$16,595,462
FTE	110.29	(0.48)	109.81

**Department 628 - Branch Research Centers - Detail of House Changes**

	Removes FTE Position <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Reduces Funding for Operating Expenses <sup>3</sup>	Adds Funding for Oakes Irrigation Site <sup>4</sup>	Reduces Funding for Capital Bond Payments <sup>5</sup>	Total House Changes
Dickinson Research Center		\$110,917	(\$263,386)			(\$152,469)
Central Grasslands Research Center		82,870	(130,969)		(\$8,782)	(56,881)
Hettinger Research Center		118,850	(141,750)			(22,900)
Langdon Research Center		76,755	(93,451)			(16,696)
North Central Research Center		117,939	(103,316)		(14,309)	314
Williston Research Center		148,606	(198,731)			(50,125)
Carrington Research Center		267,257	(268,957)	\$200,000		198,300
Total all funds	\$0	\$923,194	(\$1,200,560)	\$200,000	(\$23,091)	(\$100,457)
Less estimated income	0	259,338	0	200,000	0	459,338
General fund	\$0	\$663,856	(\$1,200,560)	\$0	(\$23,091)	(\$559,795)
FTE	(0.48)	0.00	0.00	0.00	0.00	(0.48)

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, the branch research centers removed 0.48 FTE

positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	<u>General Fund</u>	<u>Other Funds</u>	<u>Total</u>
<b>Dickinson Research Center</b>			
Salary increase	\$49,814	\$6,041	\$55,855
Health insurance increase	<u>50,600</u>	<u>4,462</u>	<u>55,062</u>
Total	\$100,414	\$10,503	\$110,917
<b>Central Grasslands Research Center</b>			
Salary increase	\$36,824	\$1,424	\$38,248
Health insurance increase	<u>42,390</u>	<u>2,232</u>	<u>44,622</u>
Total	\$79,214	\$3,656	\$82,870
<b>Hettinger Research Center</b>			
Salary increase	\$45,284	\$11,098	\$56,382
Health insurance increase	<u>44,620</u>	<u>17,848</u>	<u>62,468</u>
Total	\$89,904	\$28,946	\$118,850
<b>Langdon Research Center</b>			
Salary increase	\$33,925	\$2,671	\$36,596
Health insurance increase	<u>36,813</u>	<u>3,346</u>	<u>40,159</u>
Total	\$70,738	\$6,017	\$76,755
<b>North Central Research Center</b>			
Salary increase	\$38,586	\$21,345	\$59,931
Health insurance increase	<u>28,781</u>	<u>29,227</u>	<u>58,008</u>
Total	\$67,367	\$50,572	\$117,939
<b>Williston Research Center</b>			
Salary increase	\$66,310	\$15,366	\$81,676
Health insurance increase	<u>49,082</u>	<u>17,848</u>	<u>66,930</u>
Total	\$115,392	\$33,214	\$148,606
<b>Carrington Research Center</b>			
Salary increase	\$71,665	\$52,806	\$124,471
Health insurance increase	<u>69,162</u>	<u>73,624</u>	<u>142,786</u>
Total	\$140,827	\$126,430	\$267,257
<b>Total</b>			
Salary increase	\$342,408	\$110,751	\$453,159
Health insurance increase	<u>321,448</u>	<u>148,587</u>	<u>470,035</u>
Grand total	\$663,856	\$259,338	\$923,194

<sup>3</sup> Funding is reduced by \$1,200,560 from the general fund for operating expenses.

<sup>4</sup> Funding of \$200,000 from other funds is added for the Oakes irrigation site at the Carrington Research Center.

<sup>5</sup> Funding is reduced by \$23,091 from the general fund for capital bond payments.

**House Bill No. 1020 - NDSU Extension Service - House Action**

	<u>Base Budget</u>	<u>House Changes</u>	<u>House Version</u>
Extension Service	\$51,188,489	\$2,167,185	\$53,355,674
Soil Conservation Committee	<u>1,091,520</u>		<u>1,091,520</u>
Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
Less estimated income	<u>26,646,689</u>	<u>982,267</u>	<u>27,628,956</u>
General fund	\$25,633,320	\$1,184,918	\$26,818,238
FTE	252.98	(10.47)	242.51

**Department 630 - NDSU Extension Service - Detail of House Changes**

Att-1  
HB 1020  
2/8/2019

	Removes FTE Positions <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adds Funding for Miscellaneous Expenses <sup>3</sup>	Total House Changes
Extension Service		\$2,067,185	\$100,000	\$2,167,185
Soil Conservation Committee				
Total all funds	\$0	\$2,067,185	\$100,000	\$2,167,185
Less estimated income	0	982,267	0	982,267
General fund	\$0	\$1,084,918	\$100,000	\$1,184,918
FTE	(10.47)	0.00	0.00	(10.47)

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, NDSU Extension Service removed 10.47 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$577,488	\$473,054	\$1,050,542
Health insurance increase	507,430	509,213	1,016,643
Total	\$1,084,918	\$982,267	\$2,067,185

<sup>3</sup> Funding of \$100,000 from the general fund is added for miscellaneous expenses.

**House Bill No. 1020 - Northern Crops Institute - House Action**

	Base Budget	House Changes	House Version
Northern Crops Institute	\$3,642,721	\$186,426	\$3,829,147
Total all funds	\$3,642,721	\$186,426	\$3,829,147
Less estimated income	1,755,830	137,010	1,892,840
General fund	\$1,886,891	\$49,416	\$1,936,307
FTE	11.80	1.00	12.80

**Department 638 - Northern Crops Institute - Detail of House Changes**

	Adds One FTE Position <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Total House Changes
Northern Crops Institute		\$124,164	\$62,262	\$186,426
Total all funds	\$0	\$124,164	\$62,262	\$186,426
Less estimated income	0	37,010	100,000	137,010
General fund	\$0	\$87,154	(\$37,738)	\$49,416
FTE	1.00	0.00	0.00	1.00

<sup>1</sup> Pursuant to Section 10 of Chapter 45 of the 2017 Session Laws, the Northern Crops Institute added 1.00 FTE position.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$46,996	\$19,162	\$66,158
Health insurance increase	40,158	17,848	58,006
Total	\$87,154	\$37,010	\$124,164

<sup>3</sup> Funding is adjusted by \$62,262 for miscellaneous expenses, including a reduction of \$37,738 from the general fund and an increase of \$100,000 from other funds.

**House Bill No. 1020 - Main Research Center - House Action**

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	Base Budget	House Changes	House Version
Main Research Center	\$108,642,243	(\$775,377)	\$107,866,866
Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
Less estimated income	59,084,828	157,539	59,242,367
General fund	\$49,557,415	(\$932,916)	\$48,624,499
FTE	336.12	3.93	340.05

**Department 640 - Main Research Center - Detail of House Changes**

	Adds FTE Positions <sup>1</sup>	Adds Funding for Salary and Benefit Increases <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Reduces Funding for Capital Bond Payments <sup>4</sup>	Reduces Capital Funding from Other Funds <sup>5</sup>	Adds One-Time Funding for Extraordinary Repairs <sup>6</sup>
Main Research Center		\$3,052,389	\$44,258	(\$65,091)	(\$5,997,398)	\$1,440,465
Total all funds	\$0	\$3,052,389	\$44,258	(\$65,091)	(\$5,997,398)	\$1,440,465
Less estimated income	0	1,214,472	3,000,000	0	(5,997,398)	1,440,465
General fund	\$0	\$1,837,917	(\$2,955,742)	(\$65,091)	\$0	\$0
FTE	3.93	0.00	0.00	0.00	0.00	0.00

	Adds One-Time Funding for a Williston Seed Cleaning Plant <sup>7</sup>	Total House Changes
Main Research Center	\$750,000	(\$775,377)
Total all funds	\$750,000	(\$775,377)
Less estimated income	500,000	157,539
General fund	\$250,000	(\$932,916)
FTE	0.00	3.93

<sup>1</sup> Pursuant to Section 10 of Chapter 45 if the 2017 Session Laws, the main research center added 3.93 FTE positions.

<sup>2</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	General Fund	Other Funds	Total
Salary increase	\$1,039,641	\$593,352	\$1,632,993
Health insurance increase	798,276	621,120	1,419,396
Total	\$1,837,917	\$1,214,472	\$3,052,389

<sup>3</sup> Funding is adjusted by \$44,258 for miscellaneous expenses, including a reduction of \$2,955,742 from the general fund and an increase of \$3,000,000 from other funds.

<sup>4</sup> Funding is reduced by \$65,091 from the general fund for capital bond payments.

<sup>5</sup> Capital funding is reduced by \$5,997,398 from other funds.

<sup>6</sup> One-time funding of \$1,440,465 from the strategic investment and improvements fund is added for extraordinary repairs.

<sup>7</sup> One-time funding of \$750,000 is added for a Williston seed cleaning plant, including \$250,000 from the general fund and \$500,000 from other funds.

**House Bill No. 1020 - Agronomy Seed Farm - House Action**

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2/18/2019

	Base Budget	House Changes	House Version
Agronomy Seed Farm	\$1,536,129	\$26,205	\$1,562,334
Total all funds	\$1,536,129	\$26,205	\$1,562,334
Less estimated income	1,536,129	26,205	1,562,334
General fund	\$0	\$0	\$0
FTE	3.00	0.00	3.00

**Department 649 - Agronomy Seed Farm - Detail of House Changes**

	Adds Funding for Salary and Benefit Increases <sup>1</sup>	Total House Changes
Agronomy Seed Farm	\$26,205	\$26,205
Total all funds	\$26,205	\$26,205
Less estimated income	26,205	26,205
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> The following funding is added for 2019-21 biennium salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month:

	<u>Other Funds</u>
Salary increase	\$12,819
Health insurance increase	13,386
Total	\$26,205

**House Bill No. 1020 - Other Changes - House Action**

This amendment also adds a new section to allow funds appropriated for the 2017-19 biennium for a Williston seed cleaning plant to be continued and spent during the 2019-21 biennium.



**Department 627 - Upper Great Plains Transportation Institute  
House Bill No. 1020**

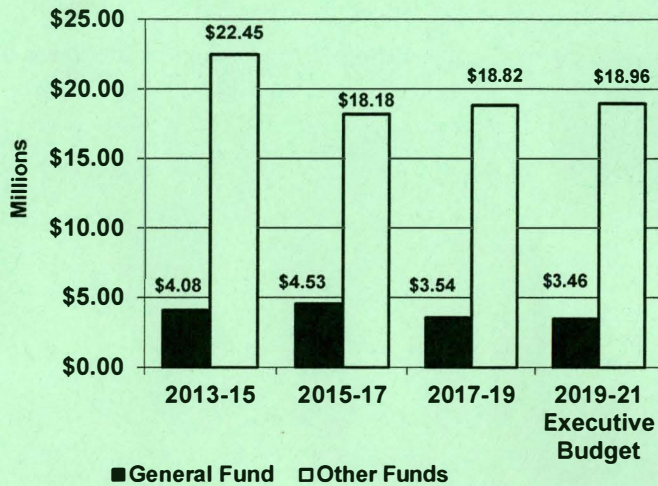
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	43.88	\$3,464,200	\$18,957,222	\$22,421,422
2017-19 Legislative Appropriations	43.88	3,543,174	18,817,068	22,360,242
Increase (Decrease)	0.00	(\$78,974)	\$140,154	\$61,180

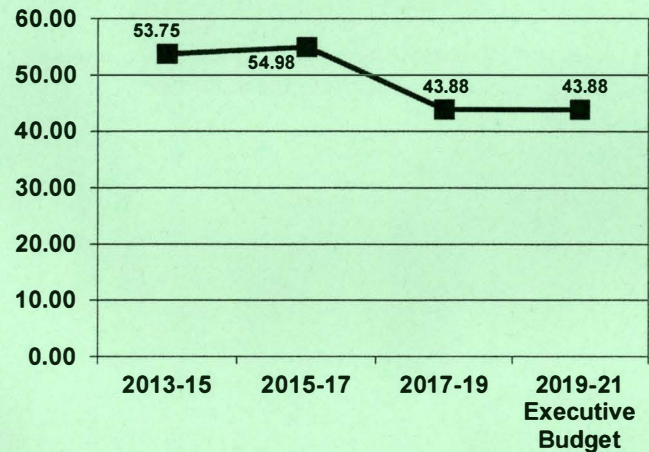
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$3,464,200	\$0	\$3,464,200
2017-19 Legislative Appropriations	3,443,174	100,000	3,543,174
Increase (Decrease)	\$21,026	(\$100,000)	(\$78,974)

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$3,464,200	\$18,957,222	\$22,421,422
2019-21 Base Level	3,443,174	18,617,068	22,060,242
Increase (Decrease)	\$21,026	\$340,154	\$361,180

**First House Action**

Attached is a comparison worksheet detailing first house changes to base level funding and the executive budget.

**Executive Budget Highlights  
(With First House Changes in Bold)**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$366,916 is for salary increases, \$151,153 is for health insurance increases, and \$15,270 is for retirement contribution increases. <b>The House added funding for salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. The House did not add funding for retirement contribution increases.</b>	\$193,185	\$340,154	\$533,339
2. Reduces funding for miscellaneous expenses. <b>The House reduced funding for miscellaneous expenses by \$70,863.</b>	(\$172,159)	\$0	(\$172,159)

### **Other Sections in House Bill No. 1020**

**Additional income appropriation** - Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**FTE position adjustments** - Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provides that any adjustments be reported to the Office of Management and Budget and Budget Section.

**Unexpended general fund - Excess income** - Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.

### **Continuing Appropriations**

There are no continuing appropriations for this agency.

### **Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

### **Major Related Legislation**

**House Bill No. 1066** - Provides for allocations from the state share of oil and gas taxes to the municipal infrastructure fund and the county and township infrastructure fund. Permitted uses of money in the funds includes road and bridge infrastructure projects.

**Senate Bill No. 2176** - Provides for a legislative management study of a road train pilot program and requires consultation with the Upper Great Plains Transportation Institute.

**Upper Great Plains Transportation Institute - Budget No. 627**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	43.88	\$3,443,174	\$18,617,068	\$22,060,242	43.88	\$3,443,174	\$18,617,068	\$22,060,242
<b>2019-21 Ongoing Funding Changes</b>								
Salary increase		\$132,904	\$234,012	\$366,916		\$83,222	\$136,645	\$219,867
Health insurance increase		54,750	96,403	151,153		57,873	120,610	178,483
Retirement contribution increase		5,531	9,739	15,270				0
Reduce funding for miscellaneous expenses		(172,159)		(172,159)		(70,863)		(70,863)
Add funding for a road and bridge study				0		450,000		450,000
Total ongoing funding changes	0.00	\$21,026	\$340,154	\$361,180	0.00	\$520,232	\$257,255	\$777,487
<b>One-time funding items</b>								
No one-time funding items				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$21,026	\$340,154	\$361,180	0.00	\$520,232	\$257,255	\$777,487
<b>2019-21 Total Funding</b>	43.88	\$3,464,200	\$18,957,222	\$22,421,422	43.88	\$3,963,406	\$18,874,323	\$22,837,729

**Other Sections for Upper Great Plains Transportation Institute - Budget No. 627**

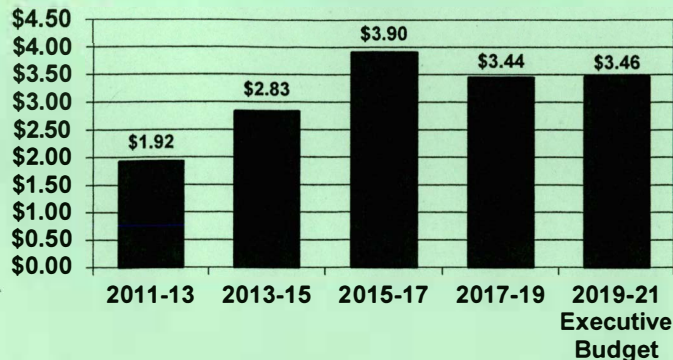
	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.

Department 627 - Upper Great Plains Transportation Institute

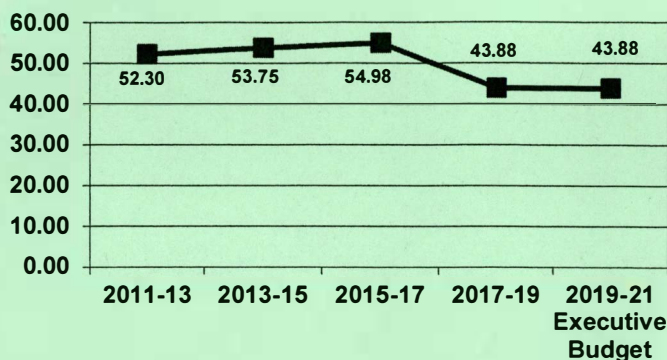
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$1,919,628	\$2,826,824	\$3,900,791	\$3,443,174	\$3,464,200
Increase (decrease) from previous biennium	N/A	\$907,196	\$1,073,967	(\$457,617)	\$21,026
Percentage increase (decrease) from previous biennium	N/A	47.3%	38.0%	(11.7%)	0.6%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	47.3%	103.2%	79.4%	80.5%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

#### 2013-15 Biennium

- 1. Added funding to match new federal grants \$750,000
- 2. Added 2 FTE positions \$349,908

#### 2015-17 Biennium

- 1. Increased funding for rentals, leases, and professional services \$300,548
- 2. Increased funding to reflect anticipated decreases in federal grants and to aid in obtaining federal grants \$300,548
- 3. Added funding for a road and bridge asset management system \$793,000

#### 2017-19 Biennium

- 1. Removed 1.3 FTE positions and reduced funding for salaries and operating expenses (\$213,402)
- 2. Reduced general fund appropriations by 3 percent (\$106,917)
- 3. Adjusted funding sources (\$200,000)

#### 2019-21 Biennium (Executive Budget Recommendation)

- 1. Reduces funding for miscellaneous expenses. The House reduced funding for miscellaneous expenses by \$70,863. (\$172,159)

Department 628 - Branch Research Centers  
House Bill No. 1020

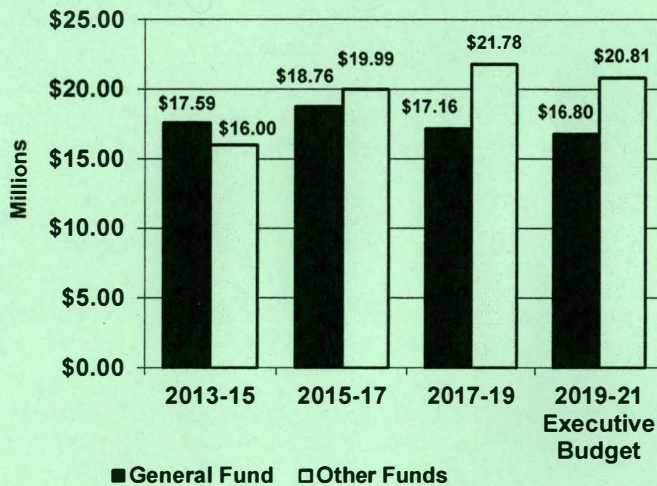
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	109.81	\$16,795,558	\$20,807,242	\$37,602,800
2017-19 Legislative Appropriations	110.29	17,155,257	21,781,691	38,936,948
Increase (Decrease)	(0.48)	(\$359,699)	(\$974,449)	(\$1,334,148)

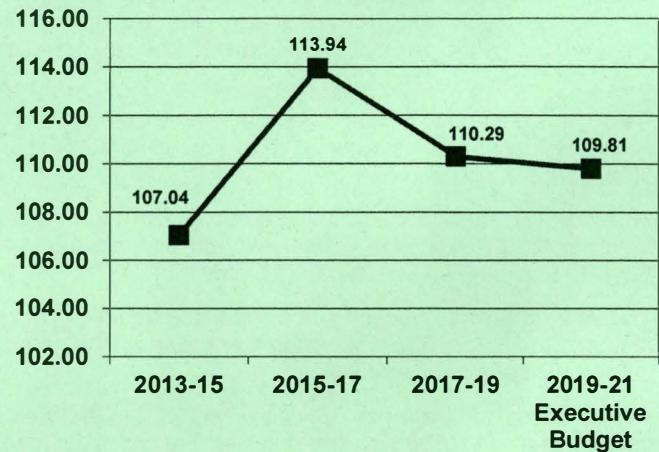
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$16,795,558	\$0	\$16,795,558
2017-19 Legislative Appropriations	17,155,257	0	17,155,257
Increase (Decrease)	(\$359,699)	\$0	(\$359,699)

Agency Funding



FTE Positions



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$16,795,558	\$20,807,242	\$37,602,800
2019-21 Base Level	17,155,257	20,281,691	37,436,948
Increase (Decrease)	(\$359,699)	\$525,551	\$165,852

**First House Action**

Attached is a comparison worksheet detailing first house changes to base level funding and the executive budget.

**Executive Budget Highlights  
(With First House Changes in Bold)**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$756,222 is for salary increases, \$398,092 is for health insurance increases, and \$35,189 is for retirement contribution increases. <b>The House added funding for salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. The House did not add funding for retirement contribution increases.</b>	\$863,952	\$325,551	\$1,189,503
<b>Dickinson Research Center</b>			
2. Reduces funding for operating expenses	(\$263,386)	\$0	(\$263,386)
<b>Central Grasslands Research Center</b>			
3. Reduces funding for operating expenses	(\$130,969)	\$0	(\$130,969)

4. Adjusts funding for capital bond payments	(\$8,782)	\$0	(\$8,782)
<b>Hettinger Research Center</b>			
5. Reduces funding for operating expenses	(\$141,750)	\$0	(\$141,750)
<b>Langdon Research Center</b>			
6. Reduces funding for operating expenses	(\$93,451)	\$0	(\$93,451)
<b>North Central Research Center</b>			
7. Reduces funding for operating expenses	(\$103,316)	\$0	(\$103,316)
8. Adjusts funding for capital bond payments	(\$14,309)	\$0	(\$14,309)
<b>Williston Research Center</b>			
9. Reduces funding for operating expenses	(\$198,731)	\$0	(\$198,731)
<b>Carrington Research Center</b>			
10. Reduces funding for operating expenses	(\$268,957)	\$0	(\$268,957)
11. Adds funding for the Oakes irrigation site	\$0	\$200,000	\$200,000

### **Other Sections in House Bill No. 1020**

**Additional income appropriation** - Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Dickinson Research Extension Center mineral rights income** - Section 5 authorizes the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.

**Williston Research Extension Center mineral rights income** - Section 6 directs the Williston Research Extension Center to report to the 67<sup>th</sup> Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.

**Transfer authority** - Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provides that any adjustments be reported to the Office of Management and Budget and Budget Section.

**Unexpended general fund - Excess income** - Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the branch research centers into the 2021-23 biennium.

**Exemption - Williston seed cleaning plant** - Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

### **Continuing Appropriations**

There are no continuing appropriations for this agency.

### **Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

### **Major Related Legislation**

**Senate Bill No. 2055** - Repeals authority approved by the 2013 Legislative Assembly to convey research center land in Ward County and Williams County.

**Branch Research Centers - Budget No. 628**

**House Bill No. 1020**

**Base Level Funding Changes**

	Executive Budget Recommendation				House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	110.29	\$17,155,257	\$20,281,691	\$37,436,948	110.29	\$17,155,257	\$20,281,691	\$37,436,948
<b>2019-21 Ongoing Funding Changes</b>								
Base payroll changes	(0.48)			\$0	(0.48)			\$0
Salary increase		\$550,257	\$205,965	756,222		\$342,408	\$110,751	453,159
Health insurance increase		288,089	110,003	398,092		321,448	148,587	470,035
Retirement contribution increase		25,606	9,583	35,189				0
Reduce funding for travel, miscellaneous supplies, repairs, and operating fees and services		(1,200,560)		(1,200,560)		(1,200,560)		(1,200,560)
Add funding for Oakes irrigation site			200,000	200,000			200,000	200,000
Reduce funding for capital bond payments		(23,091)		(23,091)		(23,091)		(23,091)
<b>Total ongoing funding changes</b>	<b>(0.48)</b>	<b>(\$359,699)</b>	<b>\$525,551</b>	<b>\$165,852</b>	<b>(0.48)</b>	<b>(\$559,795)</b>	<b>\$459,338</b>	<b>(\$100,457)</b>
<b>One-time funding items</b>								
No one-time funding items				\$0				\$0
<b>Total one-time funding changes</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Changes to Base Level Funding</b>	<b>(0.48)</b>	<b>(\$359,699)</b>	<b>\$525,551</b>	<b>\$165,852</b>	<b>(0.48)</b>	<b>(\$559,795)</b>	<b>\$459,338</b>	<b>(\$100,457)</b>
<b>2019-21 Total Funding</b>	<b>109.81</b>	<b>\$16,795,558</b>	<b>\$20,807,242</b>	<b>\$37,602,800</b>	<b>109.81</b>	<b>\$16,595,462</b>	<b>\$20,741,029</b>	<b>\$37,336,491</b>

**Other Sections for Branch Research Centers - Budget No. 628**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Other Sections for Branch Research Centers - Budget No. 628**

	<u>Executive Budget Recommendation</u>	<u>House Version</u>
Dickinson Research Extension Center mineral rights income	Section 4 would authorize the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.	Section 5 authorizes the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.
Williston Research Extension Center mineral rights income	Section 5 would direct the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.	Section 6 directs the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the branch research centers into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the branch research centers into the 2021-23 biennium.
Exemption - Williston seed cleaning plant		Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

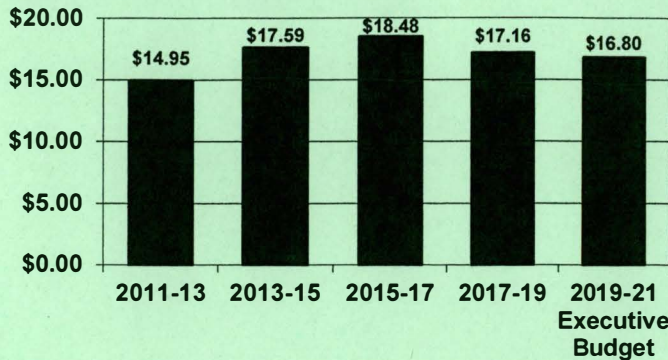


Department 628 - Branch Research Centers

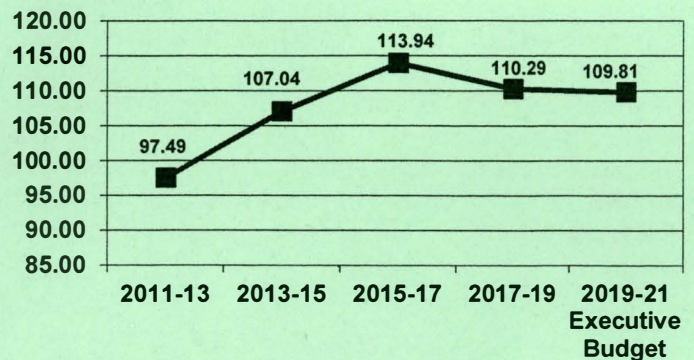
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$14,945,208	\$17,585,702	\$18,483,636	\$17,155,257	\$16,795,558
Increase (decrease) from previous biennium	N/A	\$2,640,494	\$897,934	(\$1,328,379)	(\$359,699)
Percentage increase (decrease) from previous biennium	N/A	17.7%	5.1%	(7.2%)	(2.1%)
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	17.7%	23.7%	14.8%	12.4%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

#### 2013-15 Biennium

- Added funding for 4 new FTE positions, one each at the Central Grasslands Research Center, Hettinger Research Center, North Central Research Center, and Carrington Research Center \$650,000
- Increased funding for operating expenses (Enhancing Research Capacity Initiative) \$560,000
- Added funding for variety testing, crop pathology, and dryland crop improvement (Crop Initiative) \$360,000

#### 2015-17 Biennium

- Added funding for 1 FTE animal science technical support position for the Hettinger Research Center \$130,000
- Added funding for 2 FTE crop disease research positions at the Williston Research Center \$330,000
- Increased funding for operating expenses \$210,000
- Increased funding for equipment over \$5,000 \$550,000

#### 2017-19 Biennium

- Removed 3.65 FTE positions (\$642,408)
- Adjusted funding sources and made additional unspecified general fund reductions (\$1,086,573)

#### 2019-21 Biennium (Executive Budget Recommendation)

- Reduces funding for travel, miscellaneous supplies, repairs, and operating fees and services (\$1,200,560)

**Department 630 - NDSU Extension Service  
House Bill No. 1020**

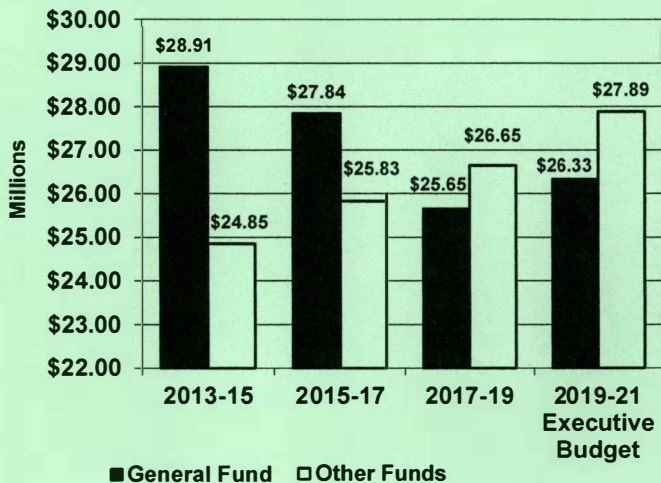
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	242.51	\$26,328,788	\$27,886,984	\$54,215,772
2017-19 Legislative Appropriations	252.98	25,648,320	26,646,689	52,295,009
Increase (Decrease)	(10.47)	\$680,468	\$1,240,295	\$1,920,763

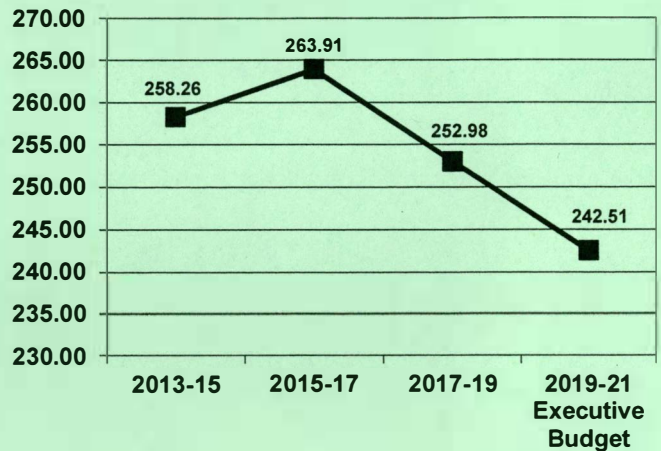
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$25,983,788	\$345,000	\$26,328,788
2017-19 Legislative Appropriations	25,633,320	15,000	25,648,320
Increase (Decrease)	\$350,468	\$330,000	\$680,468

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$26,328,788	\$27,886,984	\$54,215,772
2019-21 Base Level	25,633,320	26,646,689	52,280,009
Increase (Decrease)	\$695,468	\$1,240,295	\$1,935,763

**First House Action**

Attached is a comparison worksheet detailing first house changes to base level funding and the executive budget.

**Executive Budget Highlights  
(With First House Changes in Bold)**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$1,752,793 is for salary increases, \$860,997 is for health insurance increases, and \$40,305 is for retirement contribution increases. <b>The House added funding for salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. The House did not add funding for retirement contribution increases.</b>	\$1,413,800	\$1,240,295	\$2,654,095
2. Reduces funding for miscellaneous expenses. <b>The House added \$100,000 for miscellaneous expenses.</b>	(\$1,063,332)	\$0	(\$1,063,332)

3. Adds <b>one-time funding</b> for website and digital upgrades. <b>The House did not provide funding for website and digital upgrades.</b>	\$345,000	\$0	\$345,000
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**Other Sections in House Bill No. 1020**

**Additional income appropriation** - Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Transfer authority** - Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provides that any adjustments be reported to the Office of Management and Budget and Budget Section.

**Unexpended general fund - Excess income** - Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the NDSU Extension Service into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

The State Auditor's office reported NDSU did not have adequate journal entry approval for the Agricultural Experiment Station and Extension Service.

**Major Related Legislation**

At this time, no major related legislation is under consideration affecting this agency.

**NDSU Extension Service - Budget No. 630**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	252.98	\$25,633,320	\$26,646,689	\$52,280,009	252.98	\$25,633,320	\$26,646,689	\$52,280,009
<b>2019-21 Ongoing Funding Changes</b>								
Base payroll changes	(10.47)			\$0	(10.47)			\$0
Salary increase		\$933,689	\$819,104	1,752,793		\$577,488	\$473,054	1,050,542
Health insurance increase		458,641	402,356	860,997		507,430	509,213	1,016,643
Retirement contribution increase		21,470	18,835	40,305				0
Reduce funding for miscellaneous expenses		(1,063,332)		(1,063,332)				0
Increase funding for miscellaneous expenses				0		100,000		100,000
<b>Total ongoing funding changes</b>	<b>(10.47)</b>	<b>\$350,468</b>	<b>\$1,240,295</b>	<b>\$1,590,763</b>	<b>(10.47)</b>	<b>\$1,184,918</b>	<b>\$982,267</b>	<b>\$2,167,185</b>
<b>One-time funding items</b>								
Add one-time funding for website and digital upgrades		\$345,000		\$345,000				\$0
<b>Total one-time funding changes</b>	<b>0.00</b>	<b>\$345,000</b>	<b>\$0</b>	<b>\$345,000</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Changes to Base Level Funding</b>	<b>(10.47)</b>	<b>\$695,468</b>	<b>\$1,240,295</b>	<b>\$1,935,763</b>	<b>(10.47)</b>	<b>\$1,184,918</b>	<b>\$982,267</b>	<b>\$2,167,185</b>
<b>2019-21 Total Funding</b>	<b>242.51</b>	<b>\$26,328,788</b>	<b>\$27,886,984</b>	<b>\$54,215,772</b>	<b>242.51</b>	<b>\$26,818,238</b>	<b>\$27,628,956</b>	<b>\$54,447,194</b>

**Other Sections for NDSU Extension Service - Budget No. 630**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

**Other Sections for NDSU Extension Service - Budget No. 630**

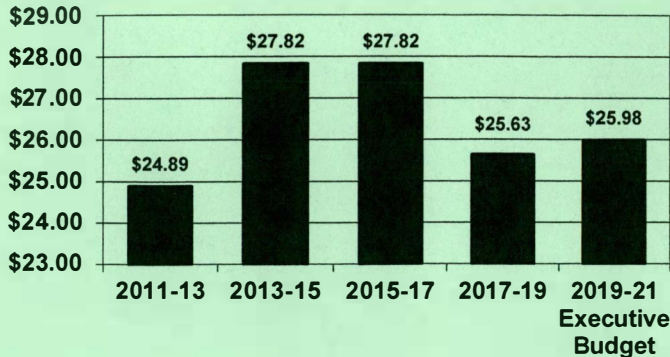
	<u>Executive Budget Recommendation</u>	<u>House Version</u>
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the NDSU Extension Service into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the NDSU Extension Service into the 2021-23 biennium.

Department 630 - NDSU Extension Service

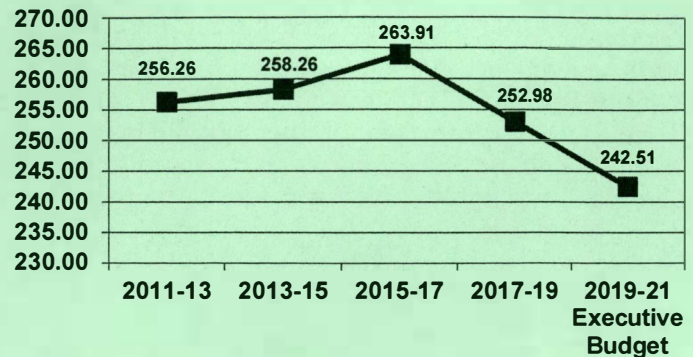
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$24,885,644	\$27,824,265	\$27,824,562	\$25,633,320	\$25,983,788
Increase (decrease) from previous biennium	N/A	\$2,938,621	\$297	(\$2,191,242)	\$350,468
Percentage increase (decrease) from previous biennium	N/A	11.8%	0.0%	(7.9%)	1.4%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	11.8%	11.8%	3.0%	4.4%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

#### 2013-15 Biennium

- Added funding for 1 FTE area livestock specialist position and 1 FTE crop protection technician position \$370,000
- Added funding for the Rural Leadership North Dakota program \$125,000
- Added funding for summer internships \$250,000
- Increased funding for soil conservation district grants to provide a total of \$1,137,800 \$150,000
- Added funding for operating support for livestock production economics \$150,000

#### 2015-17 Biennium

- Added funding for 1 FTE livestock specialist position at the Hettinger Research Extension Center \$240,000
- Increased funding for soil conservation district grants to provide a total of \$1,212,800 (this item was affected by August 2016 budget reductions) \$75,000

#### 2017-19 Biennium

- Reduced funding for salaries, including removal of 10.93 FTE positions (\$1,619,206)
- Adjusted funding for operating expenses \$175,557
- Reduced funding for equipment (\$300,000)
- Additional unspecified general fund reduction (\$1,096,343)

#### 2019-21 Biennium (Executive Budget Recommendation)

- Reduces funding for miscellaneous expenses. The House added \$100,000 for miscellaneous expenses. (\$1,063,332)

Department 638 - Northern Crops Institute  
House Bill No. 1020

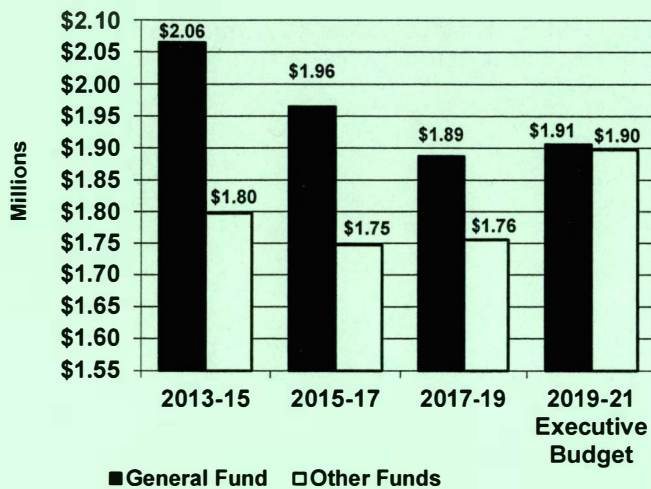
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	12.80	\$1,905,767	\$1,897,853	\$3,803,620
2017-19 Legislative Appropriations	11.80	1,886,891	1,755,830	3,642,721
Increase (Decrease)	1.00	\$18,876	\$142,023	\$160,899

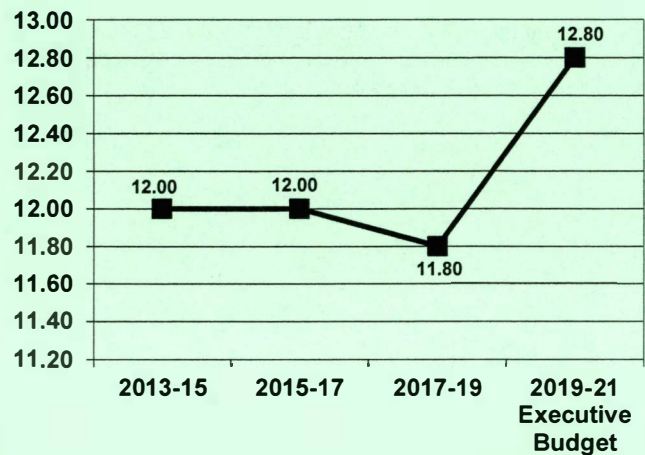
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$1,905,767	\$0	\$1,905,767
2017-19 Legislative Appropriations	1,886,891	0	1,886,891
Increase (Decrease)	\$18,876	\$0	\$18,876

Agency Funding



FTE Positions



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$1,905,767	\$1,897,853	\$3,803,620
2019-21 Base Level	1,886,891	1,755,830	3,642,721
Increase (Decrease)	\$18,876	\$142,023	\$160,899

**First House Action**

Attached is a comparison worksheet detailing first house changes to base level funding and the executive budget.

**Executive Budget Highlights  
(With First House Changes in Bold)**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$110,410 is for salary increases, \$49,127 is for health insurance increases, and \$1,362 is for retirement contribution increases. <b>The House added funding for salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. The House did not add funding for retirement contribution increases.</b>	\$113,221	\$47,678	\$160,899
2. Adjusts funding for miscellaneous expenses. <b>The House reduced funding from the general fund by \$37,738 and increased funding from other funds by \$100,000 for miscellaneous expenses.</b>	(\$94,345)	\$94,345	\$0

### **Other Sections in House Bill No. 1020**

**Additional income appropriation** - Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Transfer authority** - Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provides that any adjustments be reported to the Office of Management and Budget and Budget Section.

**Unexpended general fund - Excess income** - Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Northern Crops Institute into the 2021-23 biennium.

### **Continuing Appropriations**

There are no continuing appropriations for this agency.

### **Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

### **Major Related Legislation**

**Senate Bill No. 2297** - Authorizes the issuance and provides \$10 million of bonds and appropriates the proceeds for the Northern Crops Institute building project. The bill requires the Northern Crops Institute to obtain and utilize at least \$8 million of federal and other funds for the project.



**Northern Crops Institute - Budget No. 638**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	11.80	\$1,886,891	\$1,755,830	\$3,642,721	11.80	\$1,886,891	\$1,755,830	\$3,642,721
<b>2019-21 Ongoing Funding Changes</b>								
Base payroll changes	1.00			\$0	1.00			\$0
Salary increase		\$77,693	\$32,717	110,410		\$46,996	\$19,162	66,158
Health insurance increase		34,570	14,557	49,127		40,158	17,848	58,006
Retirement contribution increase		958	404	1,362				0
Adjust funding for miscellaneous expenses		(94,345)	94,345	0		(37,738)	100,000	62,262
Total ongoing funding changes	1.00	\$18,876	\$142,023	\$160,899	1.00	\$49,416	\$137,010	\$186,426
<b>One-time funding items</b>								
No one-time funding items				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	1.00	\$18,876	\$142,023	\$160,899	1.00	\$49,416	\$137,010	\$186,426
<b>2019-21 Total Funding</b>	12.80	\$1,905,767	\$1,897,853	\$3,803,620	12.80	\$1,936,307	\$1,892,840	\$3,829,147

**Other Sections for Northern Crops Institute - Budget No. 638**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

**Other Sections for Northern Crops Institute - Budget No. 638**

**Executive Budget Recommendation**

**House Version**

FTE position adjustments

Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provide that any adjustments be reported to the Office of Management and Budget.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Northern Crops Institute into the 2021-23 biennium.

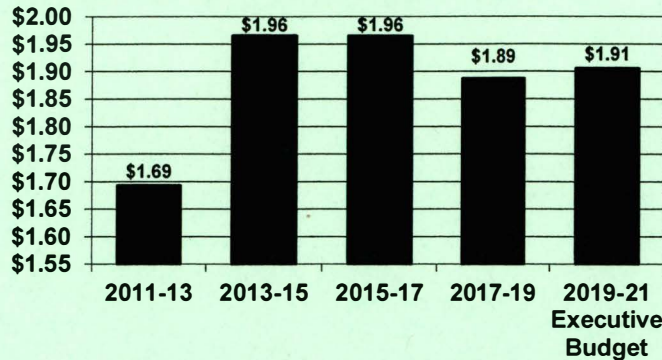
Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Northern Crops Institute into the 2021-23 biennium.

Department 638 - Northern Crops Institute

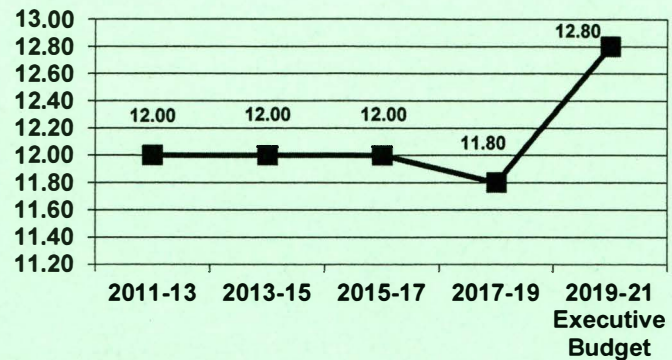
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$1,692,582	\$1,964,861	\$1,964,467	\$1,886,891	\$1,905,767
Increase (decrease) from previous biennium	N/A	\$272,279	(\$394)	(\$77,576)	\$18,876
Percentage increase (decrease) from previous biennium	N/A	16.1%	0.0%	(3.9%)	1.0%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	16.1%	16.1%	11.5%	12.6%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

**2013-15 Biennium**

- 1. Increased funding for equipment \$30,780

**2015-17 Biennium**

- 1. No major changes \$0

**2017-19 Biennium**

- 1. Reduced funding for equipment (\$200,000)
- 2. Restored funding for operating expenses \$137,691

**2019-21 Biennium (Executive Budget Recommendation)**

- 1. Adjusts funding source for miscellaneous expenses. The House reduced funding from the general fund for miscellaneous expenses by \$37,738. (\$94,345)

Department 640 - NDSU Main Research Center  
House Bill No. 1020

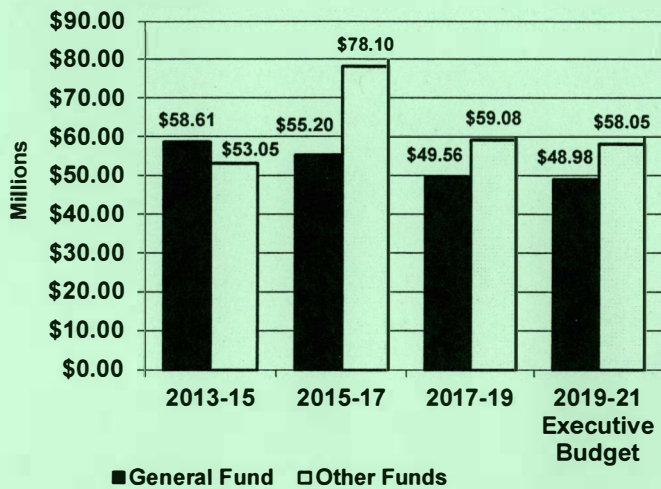
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	340.05	\$48,978,409	\$58,053,640	\$107,032,049
2017-19 Legislative Appropriations	336.12	49,557,415	59,084,828	108,642,243
Increase (Decrease)	3.93	(\$579,006)	(\$1,031,188)	(\$1,610,194)

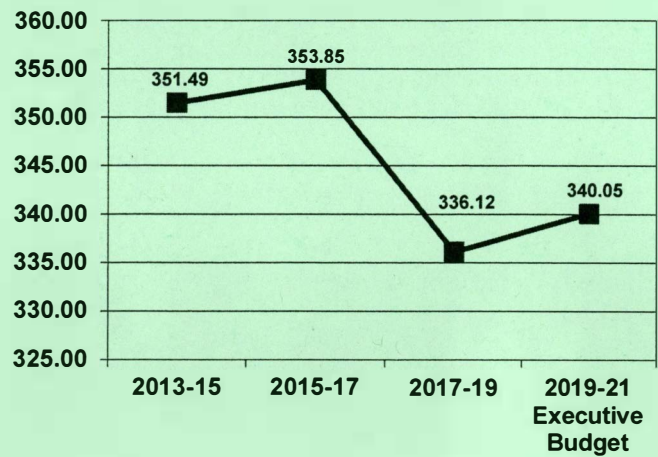
**Ongoing and One-Time General Fund Appropriations**

	Ongoing General Fund Appropriation	One-Time General Fund Appropriation	Total General Fund Appropriation
2019-21 Executive Budget	\$48,978,409	\$0	\$48,978,409
2017-19 Legislative Appropriations	49,557,415	0	49,557,415
Increase (Decrease)	(\$579,006)	\$0	(\$579,006)

Agency Funding



FTE Positions



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$48,978,409	\$58,053,640	\$107,032,049
2019-21 Base Level	49,557,415	59,084,828	108,642,243
Increase (Decrease)	(\$579,006)	(\$1,031,188)	(\$1,610,194)

**First House Action**

Attached is a comparison worksheet detailing first house changes to base level funding and the executive budget.

**Executive Budget Highlights  
(With First House Changes in Bold)**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$2,724,596 is for salary increases, \$1,202,117 is for health insurance increases, and \$40,859 is for retirement contribution increases. <b>The House added funding for salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. The House did not add funding for retirement contribution increases.</b>	\$2,441,827	\$1,525,745	\$3,967,572
2. Adjusts funding for miscellaneous expenses. <b>The House added \$3,000,000 from other funds instead of \$2,000,000, for a total increase of \$44,258 for miscellaneous expenses.</b>	(\$2,955,742)	\$2,000,000	(\$955,742)
3. Reduces funding for capital bond payments	(\$65,091)	\$0	(\$65,091)

4. Reduces capital funding from special funds	\$0	(\$5,997,398)	(\$5,997,398)
5. Adds <b>one-time funding</b> from the strategic investment and improvements fund for extraordinary repairs	\$0	\$1,440,465	\$1,440,465

**Other Sections in House Bill No. 1020**

**Additional income appropriation** - Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**Estimated income - Strategic investment and improvements fund** - Section 4 provides the estimated income line item for the Main Research Center includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs.

**Transfer authority** - Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

**FTE position adjustments** - Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provides that any adjustments be reported to the Office of Management and Budget and Budget Section.

**Unexpended general fund - Excess income** - Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Main Research Center into the 2021-23 biennium.

**Exemption - Williston seed cleaning plant** - Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

The State Auditor's office reported NDSU did not have adequate journal entry approval for the Agricultural Experiment Station and Extension Service.

**Major Related Legislation**

**Senate Bill No. 2055** - Repeals authority approved by the 2013 Legislative Assembly to convey research center land in Ward County and Williams County.

**Senate Bill No. 2297** - Authorizes this issuance of \$54 million of bonds and appropriates the proceeds for the NDSU agriculture products development center project. The bill requires NDSU to obtain and utilize at least \$6 million of federal and other funds for the project.

**NDSU Main Research Center - Budget No. 640**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	336.12	\$49,557,415	\$59,084,828	\$108,642,243	336.12	\$49,557,415	\$59,084,828	\$108,642,243
<b>2019-21 Ongoing Funding Changes</b>								
Base payroll changes	3.93			\$0	3.93			\$0
Salary increase		\$1,676,842	\$1,047,754	2,724,596		\$1,039,641	\$593,352	1,632,993
Health insurance increase		739,838	462,279	1,202,117		798,276	621,120	1,419,396
Retirement contribution increase		25,147	15,712	40,859				0
Adjust funding for miscellaneous expenses		(2,955,742)	2,000,000	(955,742)		(2,955,742)	3,000,000	44,258
Reduce funding for capital bond payments		(65,091)		(65,091)		(65,091)		(65,091)
Reduce capital funding from special funds			(5,997,398)	(5,997,398)			(5,997,398)	(5,997,398)
Total ongoing funding changes	3.93	(\$579,006)	(\$2,471,653)	(\$3,050,659)	3.93	(\$1,182,916)	(\$1,782,926)	(\$2,965,842)
<b>One-time funding items</b>								
Add one-time funding from the strategic investment and improvements fund for extraordinary repairs			\$1,440,465	\$1,440,465			\$1,440,465	\$1,440,465
Add one-time funding for a Williston seed cleaning plant				0		\$250,000	500,000	750,000
Total one-time funding changes	0.00	\$0	\$1,440,465	\$1,440,465	0.00	\$250,000	\$1,940,465	\$2,190,465
<b>Total Changes to Base Level Funding</b>	3.93	(\$579,006)	(\$1,031,188)	(\$1,610,194)	3.93	(\$932,916)	\$157,539	(\$775,377)
<b>2019-21 Total Funding</b>	340.05	\$48,978,409	\$58,053,640	\$107,032,049	340.05	\$48,624,499	\$59,242,367	\$107,866,866

**Other Sections for NDSU Main Research Center - Budget No. 640**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Estimated income - Strategic investment and improvements fund		Section 4 provides the estimated income line item in subdivision 4 of Section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs.

**Other Sections for NDSU Main Research Center - Budget No. 640**

**Executive Budget Recommendation**

**House Version**

Transfer authority

Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

FTE position adjustments

Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provide that any adjustments be reported to the Office of Management and Budget.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Main Research Center into the 2021-23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Main Research Center into the 2021-23 biennium.

Exemption - Williston seed cleaning plant

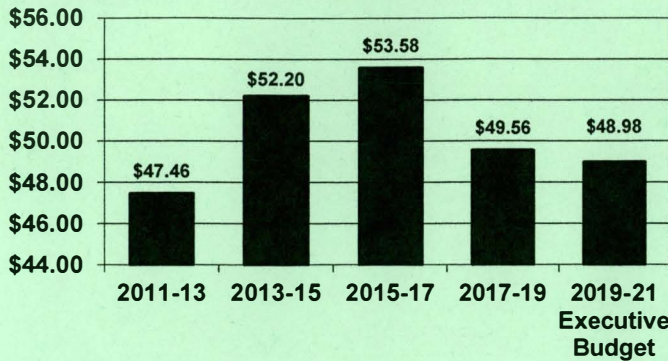
Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

Department 640 - NDSU Main Research Center

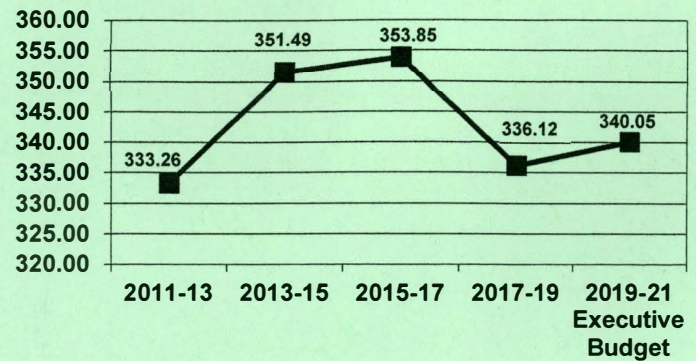
# Historical Appropriations Information

## Ongoing General Fund Appropriations Since 2011-13

Ongoing General Fund Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$47,464,748	\$52,199,521	\$53,581,255	\$49,557,415	\$48,978,409
Increase (decrease) from previous biennium	N/A	\$4,734,773	\$1,381,734	(\$4,023,840)	(\$579,006)
Percentage increase (decrease) from previous biennium	N/A	10.0%	2.6%	(7.5%)	(1.2%)
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	10.0%	12.9%	4.4%	3.2%

### Major Increases (Decreases) in Ongoing General Fund Appropriations

#### 2013-15 Biennium

- 1. Added funding for 3 FTE positions, including 1 nematologist, 1 nematology technician, and 1 crop development technician \$655,000

#### 2015-17 Biennium

- 1. Added funding for 2 FTE bioinformatics positions \$800,000
- 2. Added funding for precision agriculture operating expenses and grants \$600,000
- 3. Increased funding for equipment (this item was affected by August 2016 budget reductions) \$550,000

#### 2017-19 Biennium

- 1. Reduced funding for salaries and wages, including removal of 17.73 FTE positions (\$1,946,615)
- 2. Reduced funding for operating expenses (\$355,589)
- 3. Restored funding for equipment \$260,000
- 4. Additional budget reductions and funding adjustments (\$3,239,879)

#### 2019-21 Biennium (Executive Budget Recommendation)

- 1. Reduces general fund support for miscellaneous expenses (\$2,955,742)



**Department 649 - Agronomy Seed Farm  
House Bill No. 1020**

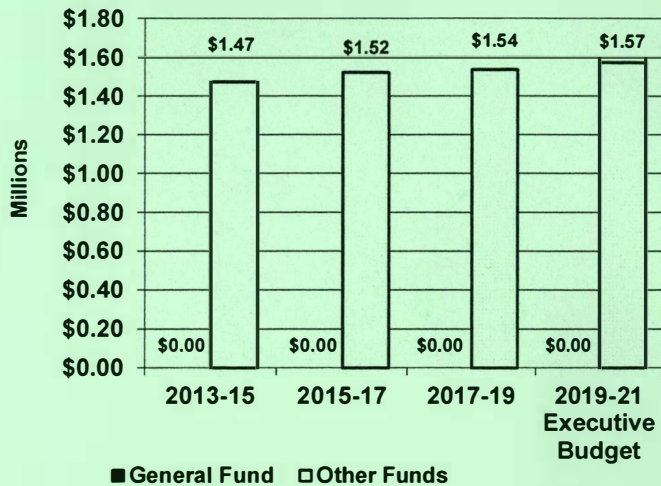
**Executive Budget Comparison to Prior Biennium Appropriations**

	FTE Positions	General Fund	Other Funds	Total
2019-21 Executive Budget	3.00	\$0	\$1,571,648	\$1,571,648
2017-19 Legislative Appropriations	3.00	0	1,536,129	1,536,129
Increase (Decrease)	0.00	\$0	\$35,519	\$35,519

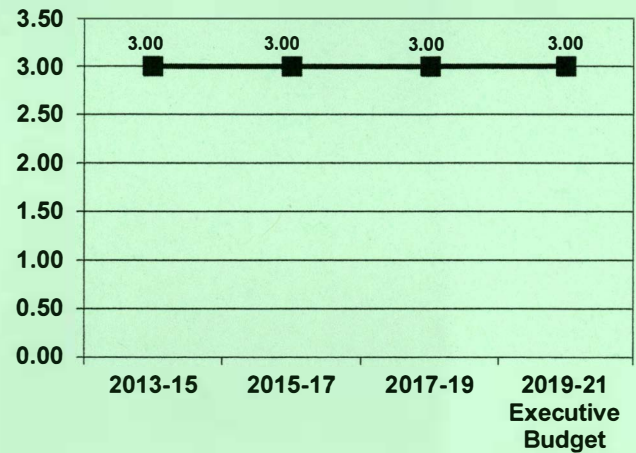
**Ongoing and One-Time Other Funds Appropriations**

	Ongoing Other Funds Appropriation	One-Time Other Funds Appropriation	Total Other Funds Appropriation
2019-21 Executive Budget	\$1,571,648	\$0	\$1,571,648
2017-19 Legislative Appropriations	1,536,129	0	1,536,129
Increase (Decrease)	\$35,519	\$0	\$35,519

**Agency Funding**



**FTE Positions**



**Executive Budget Comparison to Base Level**

	General Fund	Other Funds	Total
2019-21 Executive Budget	\$0	\$1,571,648	\$1,571,648
2019-21 Base Level	0	1,536,129	1,536,129
Increase (Decrease)	\$0	\$35,519	\$35,519

**First House Action**

Attached is a comparison worksheet detailing first house changes to base level funding and the executive budget.

**Executive Budget Highlights  
(With First House Changes in Bold)**

	General Fund	Other Funds	Total
1. Provides funding for state employee salary and benefit increases, of which \$21,393 relates to salary increases, \$11,337 is for health insurance increases, and \$2,789 is for retirement contribution increases. <b>The House added funding for salary adjustments of 2 percent per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. The House did not add funding for retirement contribution increases.</b>	\$0	\$35,519	\$35,519

**Other Sections in House Bill No. 1020**

**Additional income appropriation** - Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.

**FTE position adjustments** - Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provides that any adjustments be reported to the Office of Management and Budget and Budget Section.

**Unexpended general fund - Excess income** - Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.

**Continuing Appropriations**

There are no continuing appropriations for this agency.

**Significant Audit Findings**

At this time, there are no significant audit findings for this agency.

**Major Related Legislation**

At this time, no major legislation is under consideration affecting this agency.

**Agronomy Seed Farm - Budget No. 649**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	3.00	\$0	\$1,536,129	\$1,536,129	3.00	\$0	\$1,536,129	\$1,536,129
<b>2019-21 Ongoing Funding Changes</b>								
Salary increase			\$21,393	\$21,393			\$12,819	\$12,819
Health insurance increase			11,337	11,337			13,386	13,386
Retirement contribution increase			2,789	2,789				0
Total ongoing funding changes	0.00	\$0	\$35,519	\$35,519	0.00	\$0	\$26,205	\$26,205
<b>One-time funding items</b>								
No one-time funding items				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$0	\$35,519	\$35,519	0.00	\$0	\$26,205	\$26,205
<b>2019-21 Total Funding</b>	3.00	\$0	\$1,571,648	\$1,571,648	3.00	\$0	\$1,562,334	\$1,562,334

**Other Sections for Agronomy Seed Farm - Budget No. 649**

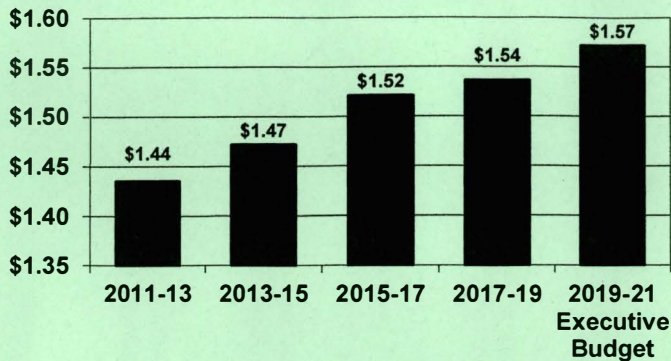
	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.

Department 649 - Agronomy Seed Farm

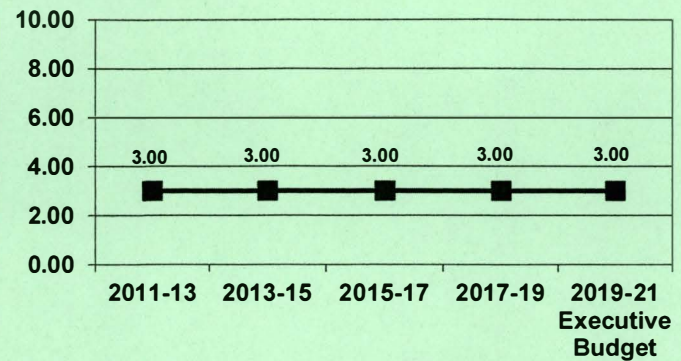
# Historical Appropriations Information

## Ongoing Other Funds Appropriations Since 2011-13

Ongoing Other Funds Appropriations (in Millions)



FTE Positions



Ongoing General Fund Appropriations					
	2011-13	2013-15	2015-17	2017-19	2019-21 Executive Budget
Ongoing general fund appropriations	\$1,435,168	\$1,471,759	\$1,521,007	\$1,536,129	\$1,571,648
Increase (decrease) from previous biennium	N/A	\$36,591	\$49,248	\$15,122	\$35,519
Percentage increase (decrease) from previous biennium	N/A	2.5%	3.3%	1.0%	2.3%
Cumulative percentage increase (decrease) from 2011-13 biennium	N/A	2.5%	6.0%	7.0%	9.5%

### Major Increases (Decreases) in Ongoing Other Funds Appropriations

**2013-15 Biennium**

1. No major changes \$0

**2015-17 Biennium**

1. No major changes \$0

**2017-19 Biennium**

1. No major changes \$0

**2019-21 Biennium (Executive Budget Recommendation)**

1. No major changes \$0

**GOVERNOR'S RECOMMENDATION FOR THE  
NORTH DAKOTA STATE UNIVERSITY EXTENSION  
SERVICE AS SUBMITTED BY THE  
OFFICE OF MANAGEMENT AND BUDGET**

**SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds as may be necessary, are appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, and from special funds derived from federal funds and other income, to the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm for the purpose of defraying the expenses of the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as follows:

Subdivision 1.

**NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE**

	Adjustments or		Appropriation
	Base Level	Enhancements	
Extension Service	\$51,188,489	\$1,935,763	\$53,124,252
Soil conservation committee	1,091,520	0	1,091,520
Total all funds	\$52,280,009	\$1,935,763	\$54,215,772
Less estimated income	26,646,689	1,240,295	27,886,984
Total general fund	\$25,633,320	\$695,468	\$26,328,788
Full-time equivalent positions	242.51	0.00	242.51

Subdivision 2.

**NORTHERN CROPS INSTITUTE**

	Adjustments or		Appropriation
	Base Level	Enhancements	
Northern Crops Institute	\$3,642,721	\$160,899	\$3,803,620
Total all funds	\$3,642,721	\$160,899	\$3,803,620
Less estimated income	1,755,830	142,023	1,897,853
Total general fund	\$1,886,891	\$18,876	\$1,905,767
Full-time equivalent positions	12.80	0.00	12.80

Subdivision 3.

UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

	Base Level	Adjustments or Enhancements	Appropriation
Upper great plains transportation institute	\$22,618,201	(\$196,779)	\$22,421,422
Total all funds	\$22,618,201	(\$196,779)	\$22,421,422
Less estimated income	18,717,068	240,154	18,957,222
Total general fund	\$3,901,133	(\$436,933)	\$3,464,200
Full-time equivalent positions	43.88	0.00	43.88

Subdivision 4.

MAIN RESEARCH CENTER

	Base Level	Adjustments or Enhancements	Appropriation
Main Research Center	\$109,217,936	(\$2,185,887)	\$107,032,049
Total all funds	\$109,217,936	(\$2,185,887)	\$107,032,049
Less estimated income	59,084,828	(1,031,188)	58,053,640
Total general fund	\$50,133,108	(\$1,154,699)	\$48,978,409
Full-time equivalent positions	340.05	0.00	340.05

Subdivision 5.

RESEARCH CENTERS

	Base Level	Adjustments or Enhancements	Appropriation
Dickinson Research Center	\$6,825,551	(\$118,534)	\$6,707,017
Central grasslands research center	3,423,624	(33,939)	3,389,685
Hettinger research center	4,975,133	9,565	4,984,698
Langdon research center	2,964,607	3,810	2,968,417
North central research center	4,953,652	35,851	4,989,503
Williston research center	5,118,890	(1,271)	5,117,619
Carrington research center	9,175,491	270,370	9,445,861
Total all funds	\$37,436,948	\$165,852	\$37,602,800
Less estimated income	20,281,691	525,551	20,807,242
Total general fund	\$17,155,257	(\$359,699)	\$16,795,558
Full-time equivalent positions	109.81	0.00	109.81

Subdivision 6.

AGRONOMY SEED FARM

	Base Level	Adjustments or Enhancements	Appropriation
Agronomy Seed Farm	\$1,536,129	\$35,519	\$1,571,648
Total Special funds	\$1,536,129	\$35,519	\$1,571,648

## Subdivision 7.

## BILL TOTAL

	Base Level	Adjustments or Enhancements	Appropriation
Grant total general fund	\$98,709,709	(\$1,236,987)	\$97,472,722
Grant total other funds	128,022,235	1,152,354	129,174,589
Grand total all funds	\$226,731,944	(\$84,633)	\$226,647,311

**SECTION 2. ONE-TIME FUNDING - EFFECT ON BASE BUDGET - REPORT TO SIXTY-SEVENTH LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fifth legislative assembly for the 2017-19 biennium and the 2019-21 one-time funding items included in the appropriation in section 1 of this Act:

One-Time Funding Description	2017-19	2019-21
Seed Cleaning Plants	\$1,500,000	\$0
Road and bridge asset management system	300,000	0
Junior master gardener program	15,000	0
Extension service web strategy & content re-imaging	0	345,000
Extraordinary repairs	0	1,440,465
Total all funds	\$1,815,000	\$1,785,465
Total other funds	1,700,000	1,440,465
Total general fund	\$115,000	\$345,000

The 2019-21 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The extension service and main research center shall report to the appropriations committees of the sixty-seventh legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2019 and ending June 30, 2021.

**SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount included in the grand total special funds appropriation line item in section 1 of this Act, any other income, including funds from federal acts, private grants, gifts, and donations, or from other sources received by the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, except as otherwise provided by law, is appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Williston research extension center shall report to the sixty-seventh legislative assembly on amounts received and spent from mineral royalties, leases, or easements in the biennium beginning July 1, 2017, and ending June 30, 2019 and the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural research and education and appropriate branch research center directors, the director of the main research center may transfer appropriation authority within subdivisions 1, 2, 4, and 5 of section 1 of this Act. Any amounts transferred must be reported to the director of the office of management and budget.

**SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The board of higher education may adjust or increase full-time equivalent positions as needed for the entities in section 1 of this Act, subject to availability of funds. The board shall report any adjustments to the office of management and budget pursuant to this section.

**SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended general fund appropriation authority to and any excess income received by entities listed in section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or revenues are available and may be expended by those entities, during the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 9. EXEMPTION.** The amounts appropriated for the veterinary diagnostic laboratory and the seed cleaning plants contained in subdivision 4 of section 1 of chapter 20 of the 2017 Sessions Laws, are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or related revenues are available and may be expended during the biennium beginning July 1, 2019, and ending June 30, 2021.



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## Upper Great Plains Transportation Institute 2019-2021 Budget Request

Presented to  
the Senate Appropriations Committee  
by Denver Tolliver, Director  
March 20, 2019

**NDSU** UPPER GREAT PLAINS  
TRANSPORTATION INSTITUTE

UGPTI

### Contents

- Major components comprising the "base level" amounts of UGPTI's budget
- Changes to base level made by House
- SBHE and Advisory Council recommendations
- UGPTI's budget request to the Senate
- Benefits of UGPTI's program request

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### UGPTI's 2017-2019 Base Level Budget

Line	Item	Amount	Percent
1.	General funds	\$3,443,174	15.5%
2.	Special funds	\$6,338,850	28.5%
3.	Federal funds	\$12,478,218	56.0%
4.	All funding sources	\$22,260,242	100.0%

### 2019-2021 Budget Passed by House

Item	Base Level	Adjustment	Appropriation
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less est. income	\$18,617,068	\$257,255	\$18,874,323
General fund	\$3,443,174	\$520,232	\$3,963,406
FTE positions	43.88	0.00	43.88

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## Detailed Changes Made by House

Item	Adjustments or Enhancements			
	Salary & Benefit Increases	Misc. Expenses	Road & Bridge Study	Total House Changes
Total all funds	\$398,350	(\$70,863)	\$450,000	\$777,487
Less est. income	\$257,255	\$0	\$0	\$257,255
General fund	\$141,095	(\$70,863)	\$450,000	\$520,232

## Recommendation of SBHE and UGPTI Advisory Council

Item	Amount
Base level budget	\$3,443,174
<b>County road &amp; bridge center</b>	<b>\$975,000</b>
Total general fund request	\$4,418,174

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## Economic Importance of County and Local Roads

- County & township roads are heavily utilized for
  - Movements from farms to storage/transfer facilities
  - Crude oil movements from wells to pipeline and rail transfer facilities by truck
  - Inputs for oil and ag. production: often delivered by truck to dispersed production sites located off the state highway system
- County and township roads are essential to the state's rural economy

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## Benefits of Road Investments

- According to FHWA, average benefit/cost ratio from highway and bridge investment (considering all benefits) > 5.0
- B/C ratio > 2 for resurfacing low volume rural roads
- Broader benefits to the economy are much greater
  - Reduction in total industry logistics costs
  - Multiplier effects from lower input prices

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# 1  
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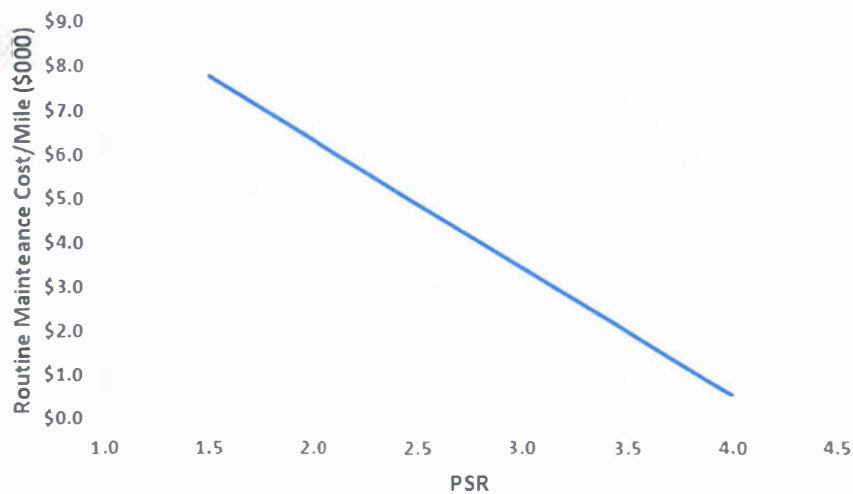
## Effect of Road Condition on Trucking Cost

Road Condition	Present Serviceability Rating (PSR)	Cost Index
Excellent	5	0.91
Good	4	0.93
<b>Fair</b>	<b>3</b>	<b>1.00</b>
Poor	2	1.14
Very Poor	1	1.26

Source: TRB Special Report 227

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## Effect of Road Condition on Maintenance Cost



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## Impact of Deferring Road Investment

Improvement	Thickness (inches)	PSR Threshold	Cost/Mile (\$000)
Thin Overlay	2	2.5	\$200
Structural Overlay	4	2.0	\$375
Rehabilitation		1.8	\$600-\$1,000
Reconstruction		< 1.8	\$1,250

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## Biennial Condition/Needs Report

- UGPTI will collect traffic data in partnership with NDDOT > 1,000 locations on county/local roads
- Develop current estimates of surface conditions
- Forecast truck traffic levels from economic activity in the state: specifically
  - Oil, produced water, drilling inputs
  - Crop production
  - Processing/manufacturing
- Inputs used to predict resurfacing, rehabilitation, graveling and other maintenance needs

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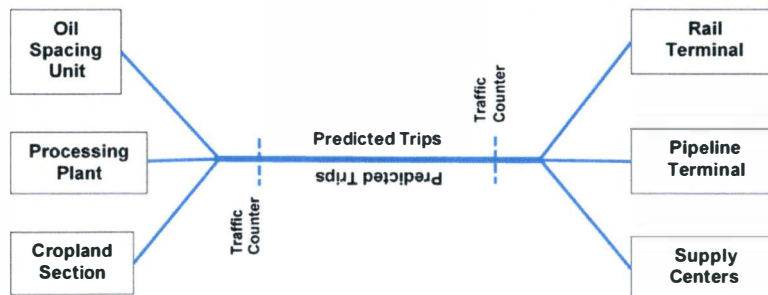
## History of UGPTI Studies

- In 2012, 2014, and 2016 UGPTI provided the Legislature with reports of needed investments in county, township, tribal roads
- Studies were financed with one-time appropriations
- No funding was provided for a 2017-19 study
- Latest traffic, road condition, and investment needs estimates are three years old

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## UPGTI's Traffic Model



Truck trips predicted from and to each oil spacing unit, cropland section, and major processing plant → Predicted trips accumulated for road segments → Predicted trips compared to observed truck volumes on principal road segments → Model is calibrated against observed traffic levels in the base year

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## Road Asset Management

- Holistic approach that minimizes long-term cost and makes roads last longer under heavy traffic
- Preserve road condition by applying the best treatment at the proper time
- \$1 spent on maintenance at the right time could save \$4 to \$5 in the future
- Ultimate vision: all counties use same system
  - Generate consistent condition/performance measures
  - Ensure consistency/compatibility across counties
  - Avoid duplication of efforts and minimize cost

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## Near-Term Objectives

- Continue development of online Geographic Roadway Inventory (GRIT) and mapping tools
- Already being used by many counties
- Current information, available from all sources:
  - Roadway width, surface, type, etc.
  - Condition
  - Truck traffic
  - Construction history and improvements plans
- Consistent data that can produce statewide performance measures

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## Decision Support Tools

- Surface selection (paved vs. aggregate surface)
- Preservation treatment selection
  - Select from improvement types: thin overlay, structural overlay, rehabilitation, shoulder improvements, etc.
  - Maintenance treatments: e.g., chip seal, crack sealing, patching, microsurfacing
  - Unpaved roads: frequencies of blading, graveling, dust control, gravel depth

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## Benefits of County Road/Bridge Program

- ≈ 6,000 miles of paved county road in North Dakota
- Should be resurfaced ideally when PSR reaches 2.5
- Without UGPTI's biennial study, road investments could be pushed into the future
- Deferring investment until rehab. increases capital cost by \$400k to \$1 million dollars per mile
- If just one 5-mile segment is identified, improved in a timely manner, and rehab. is avoided, \$2 million to \$4 million can be saved.

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## Benefits of County Road/Bridge Program (Continued)

- Based on 2016 study, it is likely that 10% of paved county road-miles have PSR values > 2.5
- Another 14% have PSR values from 2.5 to < 3.0
- If investments in just 100 miles of these roads are optimized, UGPTI's program will save the State \$40 million to \$80 million in capital costs
- If investments in 500 miles of county road are optimized, UGPTI's program will save the State \$200 million to \$400 million in capital costs

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Thank you!

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# 2

Cover

**North Dakota State University  
Upper Great Plains Transportation Institute  
Agency 627  
Denver Tolliver, Director**

## **2019-2021 Biennial Budget Request**

**Presented to:  
The Senate Appropriations Committee**

**March 20, 2019**

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## INTRODUCTION

Greetings, Chairman Holmberg and members of the Senate Appropriations Committee. My name is Denver Tolliver. I am the director of North Dakota State University's Upper Great Plains Transportation Institute (UGPTI). Thank you for the opportunity to present the UGPTI's 2019-2021 budget request to you. In my presentation, I will discuss:

- The major components making up the "base level" amounts of UGPTI's budget
- 2019-21 budget changes to the "base level" made by the House of Representatives
- A request to the Senate Appropriations committee for an adjustment to the House bill (with an explanation and justification for that request)

In addition to this narrative, I will be using slides during my presentation to make effective use of time. The slides will follow the narrative directly.

## 2017-2019 BASE LEVEL BUDGET

The Upper Great Plains Transportation Institute's base level budget is shown in Table 1, by funding source. These values represent UGPTI's current appropriations for the 2017-2019 biennium, minus carry over funds and one-time funding.

Table 1. UGPTI's 2017-2019 Base Level Budget: By Funding Source			
Line	Item	Amount	Percentage
1.	General funds	\$3,443,174	15.5%
2.	Special funds	\$6,338,850	28.5%
3.	Federal funds	\$12,478,218	56.0%
4.	All funding sources	\$22,260,242	100.0%

## GENERAL FUND COMPONENT

All of UGPTI's general funds are used for research, technology transfer, training, technical assistance, and other purposes directly related to the agency's mission. These activities comprise UGPTI's *Core Program*. UGPTI's general fund budget is distinct from NDSU's. The agencies' funds are not co-mingled.

## Critical Agency Objectives

UGPTI's research, training, and technical assistance activities that comprise its Core Program provide timely and essential information to state agencies, shippers, businesses, counties, townships, cities, and tribal governments. Some of the agency's leading objectives are to:<sup>1</sup>

- Support urban planning by offering expertise in: a) traffic analysis software (e.g., traffic signal optimization and simulation), b) metropolitan travel demand modeling, and c) automation of traffic data collection

<sup>1</sup> The objectives are not prioritized.

- Improve mobility by providing transit stakeholders, users, providers, suppliers, and agencies with the information and human resources needed to deliver cost-effective services in rural areas and small urban centers
- Enhance the competitiveness of North Dakota producers and businesses through freight transportation, supply chain, and logistics research
- Improve transportation infrastructure management through statewide models of economic production, truck traffic, road/bridge investment analysis, and asset management
- Support Vision Zero through an improved understanding of safety risks and mitigation strategies for rural areas and tribal communities, and through motor carrier safety research
- Enable the transfer of technology and information to state, local, and tribal units of government through technical assistance, training, and workforce development
- Facilitate the deployment of Intelligent Transportation Systems that use sensors, automated controls, and integrated communication systems to inform travelers and improve highway safety and efficiency

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### **Importance of General Funds**

Although state general funds comprise a minor percentage of UGPTI's overall budget, they are vital to the agency's success and sustainability. State funds are needed to match federal grants and provide continuity in times of delay or disruption in federal funding. Most federal grants require matching funds, which must consist entirely of non-federal funds or state planning and research dollars. Many of UGPTI's direct grants (such as the University Transportation Center grant) require a 100% match. UGPTI's general funds are the only dependable source of match for these grants.

### **SPECIAL FUND COMPONENT**

Special funds include grants and contracts from state and local agencies and private industry. Most of UGPTI's special funds originate from the North Dakota Department of Transportation (NDDOT) under a strategic agency partnership that has benefited North Dakota for the last four decades. In addition to NDDOT funding, an annual grant from the Wheat Commission has allowed UGPTI to continuously track and report on grain shipments exported from the state over time.

Several of North Dakota's Metropolitan Planning Organizations (MPOs) provide regular (although not necessarily annual) funding to UGPTI for travel demand modeling and technical assistance in urban transportation planning. The remainder of UGPTI's special funds consist of one-time funding from commodity groups, the South Dakota Department of Public Health (for safety studies), the Montana Department of Transportation, the Minnesota Department of Transportation, and counties in Minnesota.

While UGPTI receives funds from these organizations to cover the costs of specific studies, UGPTI does not assess fees or operate facilities that generate revenue on a continuous basis. The only fees assessed by UGPTI are those charged for short courses and workshops, which are only intended to reimburse the costs of these events.

### **FEDERAL FUNDS**

More than half of UGPTI's funding comes from federal grants and contracts. The vast majority originates from the U.S. Department of Transportation (U.S. DOT), including grants from the Office

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of the Secretary, Federal Highway Administration, Federal Transit Administration, Federal Motor Carrier Safety Administration, and the National Highway Traffic and Safety Administration. Some grants (such as the University Transportation Center grant) are provided directly to UGPTI by federal agencies. In other cases, the funds are “federal source funds” provided by third parties through the federal procurement process.

In addition to the U.S. DOT, the U.S. Department of Agriculture provides UGPTI with regular funding for transportation and market reports (typically less than \$50,000 per contract). Periodically, UGPTI receives grants from the U.S. Army Corps of Engineers. However, Corps of Engineers grants are infrequent and less than \$100,000 per award. From a federal funding perspective, UGPTI is almost entirely dependent upon the U.S. Department of Transportation.

Although federal funds are important to UGPTI’s budget, they have pre-determined uses. Federal funds must be used to analyze national priorities. They cannot be refocused on state and local issues. Ultimately, UGPTI has limited discretion in determining which critical issues are researched with federal funds, as these objectives are prescribed in law. Federal research funds are not a substitute for state research dollars.

### **BUDGET UNCERTAINTIES**

The Legislature’s special and federal funds appropriations enable UGPTI to collect grants and contracts up to the amounts shown in Table 1. These values represent the agency’s best projections of the authority needed to procure all funds that may become available during the biennium. These forecasts reflect historic grant levels, applications in progress, and anticipated RFPs.

Most grants are competitive in nature and subject to the budget constraints of the sponsoring agencies. Therefore, UGPTI’s federal and special funds appropriations reflect a range of uncertainties. The only hard dollars in UGPTI’s budget are the state general funds. Federal and special funds are provided at the discretion of intermediate agencies and are subject to the budget limits experienced by those agencies.

### **2019-2021 BUDGET PASSED BY THE HOUSE OF REPRESENTATIVES**

As shown in Table 2, the House added \$777,487 to UGPTI’s base level. Of this sum, \$257,255 reflects authority to collect additional special or federal funds. The remainder (\$520,232) represents an increase in general funds.

As shown in Table 3, the \$520,232 increase in general funds reflects adjustments in three underlying budget components. (1) The House added \$141,095 to UGPTI’s base level for 2019-21 biennium salary adjustments of 2% per year and increases in health insurance premiums from \$1,241 to \$1,427 per month. (2) UGPTI’s general fund was reduced by \$70,863 for “miscellaneous expenses.” This adjustment relates to the 5% general fund reduction required by the initial budget guidelines, which was included in the Executive Recommendation. The House reduced the cut from 5% to 2%. (3) The House then added \$450,000 in ongoing funding to continue the road and bridge study.

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Item	Base Level	Adjustments or Enhancements	Appropriation
Total all funds	\$22,060,242	\$777,487	\$22,837,729
Less estimated income	\$18,617,068	\$257,255	\$18,874,323
Total general fund	\$3,443,174	\$520,232	\$3,963,406
Full-time equivalent positions	43.88	0.00	43.88

Item	Adjustments or Enhancements			Total House Changes
	Salary and Benefit Increases	Miscellaneous Expenses	Road and Bridge Study	
Total all funds	\$398,350	(\$70,863)	\$450,000	\$777,487
Less estimated income	\$257,255	\$0	\$0	\$257,255
General fund	\$141,095	(\$70,863)	\$450,000	\$520,232

As shown in Table 4, \$257,255 of the \$398,350 budgeted for salary and health insurance increases must be paid from grants and contracts collected by UGPTI. Only 35% of the total increase would be paid from general funds.

Item	General Fund	Other Funds	Total
Salary increase	\$83,222	\$136,645	\$219,867
Health insurance increase	57,873	120,610	178,483
Total	\$141,095	\$257,255	\$398,350

## **REQUEST TO THE SENATE APPROPRIATIONS COMMITTEE**

In 2108, the State Board of Higher Education recommended the addition of \$975,000 to UGPTI's general fund budget for a county road and bridge planning center and \$500,000 for the establishment of a research program in transformative technologies. The latter program would focus on the deployment and impacts of vehicle automation and the utilization of real-time information systems in transportation planning. The State Board's recommendations are the same as those of UGPTI's Advisory Council.

In HB 1020, the House of Representatives rejected UGPTI's request for funding for the transformative technologies program. Therefore, this option is not included in UGPTI's request to the Senate Appropriations Committee. However, the House provided partial funding for the county road and bridge planning center. Therefore, this request is being carried forward to the Senate. However, UGPTI is requesting that the Senate fully fund the county road and bridge planning center, so that all the benefits described in the following paragraphs can be realized.



## BIENNIAL ROAD AND BRIDGE INVESTMENT NEEDS AND CONDITION REPORT

Movements from farms to initial storage or transfer facilities depend on county and township roads. Much of the crude oil produced in western North Dakota moves from wells to pipeline and rail transfer facilities by truck. Similarly, most of the inputs needed for oil production are delivered by truck to remote production sites located off the state highway system. County and township roads are heavily utilized in many areas of the state and are essential to the state's rural economy.

In 2012, 2014, and 2016 the Upper Great Plains Transportation Institute provided the Legislature with reports of needed investments in county, township, and tribal roads. These studies were financed with one-time appropriations. The Legislature did not provide funds for a study in the 2017-2019 biennium. Hence, UGPTI's latest traffic, road condition, and investment needs estimates are three years old. With a dynamic economy, it is important to have up-to-date information and forecasts of road conditions and investment needs when setting priorities and determining funding levels.

If this request is funded, UGPTI will collect traffic data in partnership with the NDDOT at more than 1,000 locations on county and local roads each biennium, develop current estimates of the surface conditions of all paved county and local roads, and forecast truck traffic levels resulting from economic activity in the state. These inputs will be used to predict the resurfacing, rehabilitation, graveling and other maintenance needs of county and local roads throughout the state for the next 20 years.

UGPTI's traffic model is illustrated in Figure 1. Truck trips are predicted from and to each oil spacing unit, cropland section, and major processing plant in the state. The predicted trips generated from each activity are accumulated for individual road segments. The predicted trips are compared to observed truck volumes (derived from UGPTI's traffic counts) on principal road segments. In this way, the model is calibrated against observed traffic levels in the base year. As this relationship suggests, detailed economic modeling and traffic data collection are both necessary on a regular basis to achieve the desired level of accuracy.

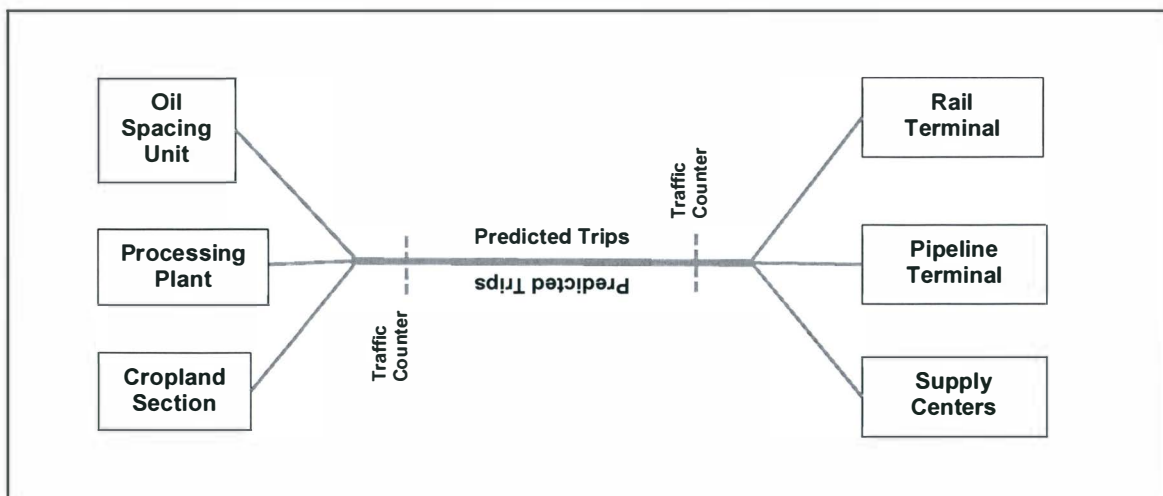


Figure 1. Truck Traffic Counting and Forecasting Process

County bridge replacement and maintenance needs are quantified in a similar manner, using a bridge

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deterioration model that considers age, traffic, and design factors, as well as typical inspection/maintenance needs. If this request is funded, UGPTI will prepare road and bridge reports for the Legislature and function as a center of expertise (and source of technical information) for counties, townships, and tribal governments. In addition, UGPTI will provide the information needed for legislative proposals such as Operation Prairie Dog.

**Impacts of Road Condition on Freight Costs**

Good roads are vital to North Dakota’s export competitiveness and economic development. Most freight travels the first and last miles in trucks. As shown in Table 5, trucking costs increase by more than 35% when road condition deteriorates from good (a Present Serviceability Rating (PSR) of 4) to very poor (a PSR of 1). These costs ripple throughout the economy, affecting merchandisers and producers.

Table 5. Trucking Cost as a Function of Road Condition		
Road Condition	Present Serviceability Rating (PSR)	Cost Index
Excellent	5	0.91
Good	4	0.93
<b>Fair</b>	<b>3</b>	<b>1.00</b>
Poor	2	1.14
Very Poor	1	1.26
Source: National Academies of Sciences. 1990. <i>New Trucks for Greater Productivity and Less Road Wear: An Evaluation of the Turner Proposal – Special Report 227</i> . Washington, DC.		

Trucking costs affect the net prices received by producers. By providing better roads, the Legislature is enhancing the competitiveness of North Dakota producers and increasing their access to markets.

**Benefits of Road Investments**

According to Federal Highway Administration, each dollar spent on roads, highways, and bridges returns more than \$5 in savings on vehicle maintenance and repairs; lower road, highway, and bridge maintenance costs; improved safety; and less fuel consumption and tailpipe emissions.<sup>2</sup> As shown in Figure 2, routine maintenance costs (such as patching and crack sealing) increase as road condition deteriorates. For example, routine maintenance cost is 60% greater at a PSR of 1.5 than at 2.5.

As shown in Table 6, deferring improvements ultimately increases capital costs. If a road can be resurfaced at the optimal time (e.g., PSR = 2.5) it can be restored to a smooth, serviceable highway (e.g., PSR ≥ 4.2) at minimal cost (e.g., \$200,000 per mile) with a thin 2-inch overlay. If, however, the improvement is deferred until the PSR drops to 2.0, a thicker overlay (e.g., 4 inches) will be needed at a higher cost (\$375,000 per mile). If the condition of the road deteriorates further (e.g., the PSR drops to 1.8), the existing surface and base layers will be too cracked, rutted, and deformed to provide structural support for an overlay. In this case, the layers must be removed (mined) and

<sup>2</sup> Kahn, M. and D. Levinson. *Fix It First, Expand It Second, Reward It Third: A New Strategy for America’s Highways*. The Brookings Institute, 2011.

blended with new material before being replaced on the subgrade. The minimum cost of such a mine and blend operation is \$600,000 per mile. In some cases, the roadway width may be insufficient for the thicker layers. If so, the road must be widened—in which case, the cost of rehabilitation could be as much as \$1 million per mile. If the PSR drops below 1.8 (e.g., to 1.5), the road must be fully reconstructed from the subgrade up at a cost of \$1.25 million per mile.

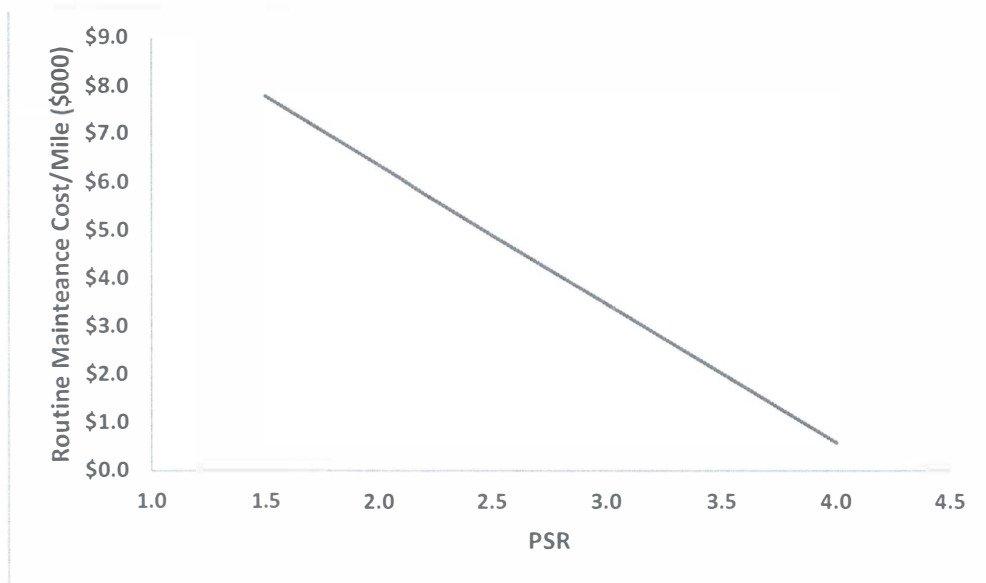


Figure 2 Change in Routine Maintenance Cost with Road Condition<sup>3</sup>

Improvement	Thickness (inches)	PSR Threshold	Cost per Mile (\$000)
Thin Overlay	2	2.5	\$200
Structural Overlay	4	2.0	\$375
Rehabilitation (Mine/Blend)		1.8	\$600-\$1,000
Reconstruction		< 1.8	\$1,250

As these illustrations suggest, timely road investments pay for themselves. The same is true of UGPTI’s biennial needs and condition studies. By quantifying the near-term investments needed, UGPTI’s studies return cost savings far greater than the costs of the studies themselves.

### Road Investment and Condition Monitoring

If the county road and bridge planning center is funded, the Upper Great Plains Transportation Institute will provide the Legislature with objective and consistent estimates of investment needs and measures of effectiveness—e.g., how road conditions are improving or stabilizing over time. With the assistance of counties and the NDDOT, UGPTI will maintain a list of all resurfacing,

<sup>3</sup> U.S. Department of Transportation. *Highway Economic Requirements System: Technical Report*, 2001, Table 5-10. Original source: Witczak, M. and G. Rada. *Microcomputer Solution of the Project Level PMS Life Cycle Cost Model*, University of Maryland, Department of Civil Engineering, December 1984.

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reconstruction, and surface improvements. Given this information, UGPTI can report effectiveness measures to the Legislature, such as the number of miles improved, trends in road condition, and the freight traffic volume benefitting from the investments.

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### ASSET MANAGEMENT PROGRAM

Capital investments in roads and bridges can be optimized through a timed sequence of preservation and maintenance activities. Without timely maintenance, roads may deteriorate more rapidly than anticipated. According to several studies, \$1 spent on maintenance at the right time (e.g., spending on crack seals, chip seals, and other surface treatments) could save \$4 to \$5 in the future.<sup>4</sup> When properly implemented, asset management can provide better road service for longer periods of time.

#### Basic Inventory

As envisioned, UGPTI’s asset management system will have several levels. The pace of implementation will be determined by the amount of funding available. The first level consists of a comprehensive (up to date) inventory of road and bridge assets. Each major segment of a county road between two junctions is part of this inventory. For each segment, the information shown in Table 7 will be compiled and updated biennially.

Length of segment	Road name
Number of lanes	Owner
Roadway width	Classification (e.g., CMC or local)
Surface type	Geo-coordinates (end points of the segment)
Shoulder type/width	Public grade crossings
Structures (bridges, culverts)	Traffic control devices

If a road segment includes a bridge that is part of the National Bridge Inventory (NBI), a set of attributes will be derived for the structure (e.g., design type, age, and weight limits) using its geo-coordinates. If the bridge’s weight limit is less than 80,000 pounds, smaller trucks must be used on the segment or the payload must be reduced, thus impacting logistical efficiency. In addition to bridges included in the National Bridge Inventory, UGPTI’s asset management system will include information on minor structures – i.e., those that are less than 20 feet in length. The number of minor structures exceeds the number of NBI bridges in North Dakota. An inventory of these smaller structures would allow for better infrastructure management and load-carrying decision making at the county level.

The attributes of an at-grade railroad crossing on a road segment can be accessed by querying FRA’s Grade Crossing Database, which includes the type of crossing protection and the average number of trains per day at the crossing. Although counties are not responsible for grade crossing improvements or maintenance, the presence of crossings on a segment may affect traffic flow and safety.

A key to ensuring that all inventory items are accurate and up to date is an easy to use tool that

<sup>4</sup> Kahn, M. and D. Levinson. *Fix It First, Expand It Second, Reward It Third: A New Strategy for America’s Highways*. The Brookings Institute, 2011.

allows local road managers to update the information online. This goal has been accomplished with the initial development of the Geographic Roadway Inventory Tool or GRIT. This web tool (which is already operational and in use by most counties in North Dakota) provides the capability to edit and maintain data in a geographical or map-based environment. In addition, GRIT provides online mapping tools that allow road managers and the public to view and understand the information. With GRIT, all the data collected by UGPTI each biennium will be geographically combined with basic inventory data updated by local road managers.

**Road Condition**

In addition to a basic inventory, Level 2 includes essential information about the condition and quality of a road (Table 8). The relevant characteristics may vary with the type of surface (paved versus aggregate). However, for a given surface, the information listed in Table 8 is essential to determining the condition and quality of the road. Ideally, all investments (using federal, state, or local funds) will be reflected in the improvement list.

<b>Table 8. Level 2 of Road Asset Management System – Condition and Quality</b>	
<b>Paved Surfaces</b>	<b>Aggregate Surfaces</b>
Surface condition rating	Aggregate class
Structural rating	Gravel depth
Improvements made	Date of last gravel placement
Dates of improvements	Blading frequency
Costs of improvements	Cost per mile

Substantial progress has been made during the last four years toward a consistent inventory of assets (Level 1) and surface conditions (Level 2). However, further development is necessary. By taking advantage of emergent technologies, many data collection efforts can be automated, thereby reducing the costs of maintaining an up-to-date inventory. A cost-effective method of collecting condition data can be achieved by deploying low-cost sensors in vehicles. With widespread use of these devices, the roughness of a road surface can be approximated by monitoring the motion, acceleration, and responses of vehicles. Once this new technology is deployed, road condition data can be collected each year on all segments in the state, not just on a sample of roads. Moreover, the condition assessments will be consistent from county to county and across segments.

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### Traffic and Operations

In Level 3, current estimates of traffic, truck factors, and roadway characteristics can be used to develop biennial assessments of the operational characteristics and utilization of roads. The average annual daily traffic (AADT), percent trucks, and distribution of traffic during the week and day are key indicators of traffic conditions and levels of service (Table 9). In addition, the annual equivalent single axle loads (or ESALs) are indicators of the structural demands being placed on roads.

AADT – all vehicles	Speed limit
Truck AADT (by class)	Directional traffic distribution
Weekday average daily traffic	Peak hour factor
Annual ESALs (paved roads)	No passing zones

### Decision Making Tools

The Surface Selection tool (which has already been developed) provides technical assistance in determining when an unpaved road could be economically paved, based on life-cycle cost comparisons of paved and unpaved roads. A traffic/road condition forecasting model (which will be added in the near future) will allow counties to estimate future rates of road deterioration (based on projected traffic levels) and the timing of future improvement needs. In addition, the development of a gravel road component will provide information about graveling frequency and depth, dust control applications, and other costs (such as blading frequency), which vary with levels of truck traffic (Table 10).

Function	Decision Information
Surface selection	Paved versus aggregate surface
Condition forecasting	Deterioration of condition with time and traffic
Remaining life	Remaining ESALs or equivalent truck trips
Preservation treatments	Type and timing of treatment

In Level 4, improvement selection tools will provide technical information about the many types of improvements that could be considered for a road segment. For paved roads, these options include a range of improvements such as a thin overlay, a structural overlay, rehabilitation, and shoulder improvements; as well as typical maintenance treatments such as crack seals, chip seals, patches, and microsurfacing. For unpaved roads, the improvement selection process will consider various frequencies of blading, graveling, and gravel depth.

### Consistent Comparable Measures

The ideal situation is for all counties in the state to use the same asset management system, which will generate consistent performance measures and allow UGPTI to develop comparable estimates of investment needs across jurisdictions. If each county develops its own system and measures, the Legislature must compare requests from individual counties based on different assumptions and metrics. If each county develops its own system, large-scale duplications of effort will result. With

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base-level funding, UGPTI can host an asset management system for the entire state and add functions over time to make it a decision making tool similar to the one used by Federal Highway Administration.

**CONCLUSION**

Thank you for the opportunity to present the Upper Great Plains Transportation Institute's 2019-2021 budget requests. UGPTI's general fund budget request (exclusive of the compensation package) is summarized in Table 11. I am asking the Senate Appropriations Committee not to cut UGPTI's starting base level budget and to add the full funding requested for the county road and bridge planning center.

<b>Line</b>	<b>Item</b>	<b>Amount</b>
1	Base level budget	\$3,443,174
2	County road & bridge planning center	\$975,000
3	Total general fund budget request	\$4,418,174

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**SENATE APPROPRIATIONS COMMITTEE**  
**March 20, 2019 – 8:30 a.m. – Harvest Room**

**North Dakota Department of Transportation (NDDOT)**  
**Steve Salwei, P.E. – Transportation Programs Director**

**HB 1020**

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Mr. Chairman, members of the committee. I'm Steve Salwei, and I serve as the Transportation Programs Director for the North Dakota Department of Transportation (NDDOT). I'm here today to support the Upper Great Plains Transportation Institute's section of House Bill 1020.

The NDDOT has utilized Upper Great Plains Transportation Institute (UGPTI) as a resource to assist in conducting research and special studies in areas where the Department lacks expertise, such as traffic modeling, preparing needs analysis, determining economic impacts and providing analysis on various transportation related topics. The services UGPTI provides are valuable to the State's Transportation industry.

Mr. Chairman, that concludes my testimony and I will be happy to answer any questions the committee may have.



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Testimony Prepared for the  
**Senate Appropriations**

March 20, 2019

By: Linda Svihovec, NDACo Research Analyst

**RE: House Bill 1020 - Upper Great Plains Transportation Institute Budget**

Good morning Chairman Holmberg and Appropriations Committee members. For the record, my name is Linda Svihovec, with the North Dakota Association of Counties. Thank you for the opportunity to provide testimony in support of the request for the additional funding needed to update the Upper Great Plains Transportation Institute's (UGPTI) 2016 Local Roads Infrastructure Needs Study (Study).

The Upper Great Plains Transportation Institute Study has become a valuable resource as a county planning and budgeting tool used to identify local road project funding priorities across the state. The objective scientific assessment methods used by the Study provide the level of detailed data needed when counties are committing large investments for roads impacted by agriculture, manufacturing, and energy industry traffic.

The Upper Great Plains Transportation Institute Roads Study has also been used as a basis to calculate the distribution of county road funds allocated by the North Dakota legislature, including HB1066, Operation Prairie dog this session. It is also used to assist county engineers and road superintendents with prioritizing their county road capital improvement plans.

The development and implementation of GRIT (Geographic Roadway Inventory Tool) in the 2016 Study, provides a consistent tracking and reporting county road data tool. With enhancements, GRIT could become the "go to" local road database for all users of that information, including UGPTI, North Dakota Department of Transportation, and the Legislature.

With constant changes in the number, size, and weight of vehicles used for transportation, as well as the loads they carry, the impact and use of local roads are continually changing. The Upper Great Plains Transportation Institute Local Roads Study provides the essential information needed to proactively address those changes. Please support the additional funding needed to update the Study and to implement the necessary enhancements to GRIT.

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**Testimony Regarding HB 1020**

**Prepared by: Dana G. Larsen, PE, Ward County Engineer**

Chairman, and Committee members, my name is Dana Larsen and I am the Ward County Engineer. I've been with Ward County for 20 years and have appreciated working with the Upper Great Plains Transportation Institute (UGPTI) and North Dakota Local Technical Assistance Program (NDLTAP). These two entities have done a great job of bringing information, knowledge, training, data, and resources to the counties. Ward County strives to be efficient with our road funds and tries to make smart and timely investments in our road infrastructure. In order to do this, we need to know and understand our current infrastructure status and project our future needs. I believe the UGPTI's Needs Study and the Local Road Asset Management System also known as GRIT helps counties better understand our need and affectively communicate them to all the parties involved.

I believe it is important to continue funding for the infrastructure need study and GRIT program. The infrastructure need study and GRIT pull together a lot of data, which can be used my both large and small counties. UGPTI is using traffic counts, pavement condition, load caring capacities, oil data, crop data, NBI bridge inventory, and data provided by the counties to analyze current and future needs. Small and big counties both benefit from the need study and from the GRIT GIS system. Small counties benefit because they would not have the staff or software it takes to build a GIS system on their own. However, by maintaining the UGPTI GRIT system, not only can UGPTI use the data to produce a more accurate study, the small counties also maintain an effective asset management system for their county. As a large county, one item I find very important is the multi county data on the system, which allow counties to see road data for the adjoining counties.

Thank you for your time today and want to express my thanks for your previous and continued support for UGPTI and their programs.

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Testimony Prepared for the  
**Senate Appropriations**  
March 20, 2019

By: Al Heiser, Stark County Road Superintendent  
Representing NDLTAP Board

**RE: House Bill 1020 – Upper Great Plains Transportation Institute Budget**

Good morning Chairman Holmberg and Appropriations Committee members. For the record, my name is Al Heiser. Thank you for allowing me to speak on HB 1020. As a board member of the North Dakota Local Technical Assistance Program (NDLTAP), I am here to testify before you today in support of the request for additional funding needed to update the Upper Great Plains Transportation Institute's (UGPTI) 2016 Local Roads Infrastructure Needs Study.

This study has become a valuable resource for county input to identify crucial road projects across the state. The budgeting of future county projects is dependent on this study. Without the study, the Legislature would struggle to adequately evaluate individual county funding needs.

With the development of the Geographical Roadway Inventory Tool (GRIT) Program, counties are given the ability to monitor bridges, pavement quality, sign inventories, etc. The impact of heavier loads being hauled on county roadways are more easily identified with this program.

The funding for the Great Plains Transportation Institute's (UGPTI) study is vital to keep Geographical Roadway Inventory Tool (GRIT) as a valuable asset in place for accurate information on county needs.

Thank you for your time in consideration of HB 1020.

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## Senate Appropriations HB1020 Schedule

State Capitol Harvest Room, March 20, 2019

9:15-9:25AM - SBARE Introduction-Keith Peltier

9:25-9:40 - AES/EXT Main Station- Greg Lardy

9:40-9:45 - Carrington REC

9:45-9:50 - Central Grasslands REC

9:50-9:55 - Dickinson REC

9:55-10:00 - Hettinger REC

10:00-10:05 - Langdon REC

10:05-10:10 - North Central REC

10:10-10:15 - Williston REC

10:15-10:16 - Agronomy Seed Farm

10:16-10:21- Donnell Preskey, NDACO

10:21-10:26 - County Commissioner

10:26-10:31 - Naeem Kalwar-Ext. Soil Health Specialist

10:31-10:36 - Wes Fredrick, ND State Soil Conservation Committee

10:36-10:41 - Mara Bornemann, 4-H Member, Center, ND

10:41-10:46 - Vawnita Best, RLND Alumni, Watford City

10:46-10:51 - Dave Miller-CAC member and farmer Donnybrook.

10:51-10:56 - Dick Roland - SBARE

10:56-11:15 - Open Testimony

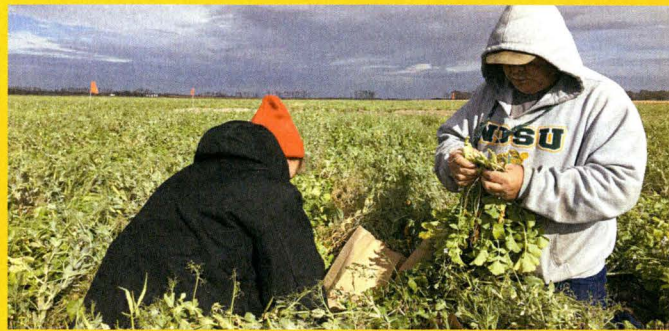
11:15 to 1145 - Northern Crops Institute

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**NORTH DAKOTA STATE UNIVERSITY**



NDSU Extension - Budget No. 630  
North Dakota Agricultural Experiment Station  
- Main Station - Budget No. 640  
- Branch Research Extension Centers - Budget No. 628  
- Agronomy Seed Farm - Budget No. 649

Dean L. Bresciani - President, North Dakota State University  
Keith Peltier - Chair, State Board of Agricultural Research and Education  
Greg Lardy - Associate Vice President, Agricultural Affairs  
Acting Director, ND Agricultural Experiment Station  
Interim Director, NDSU Extension  
  
Tim Faller - Acting Director, Dickinson Research Extension Center  
Kevin Sedivec - Interim Director, Central Grasslands Research Extension Center  
Chris Schauer - Director, Hettinger Research Extension Center  
Randy Mehlhoff - Director, Langdon Research Extension Center  
Shana Forster - Director, North Central Research Extension Center  
Jerry Bergman - Director, Williston Research Extension Center  
Blaine Schatz - Director, Carrington Research Extension Center  
Brian Otteson - Director, Agronomy Seed Farm

# North Dakota Agricultural Experiment Station

## NDSU Extension

### 2019-2021 Biennial Budget Request

**House Bill 1020**  
**Senate Appropriations Committee**  
Senator Ray Holmberg, Chair  
March 20, 2019

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## Agency Overview

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# NDSU Extension

### Agency Statutory Authority

North Dakota Century Code 15-12.1-17

### Agency Description

North Dakota State University (NDSU) Extension is part of a nationwide, university-based educational system that provides research-based educational programs to citizens in all 53 counties and four American Indian reservations in North Dakota. Programs focus on selected needs and issues affecting the state's agriculture, youth, families, communities and natural resources. The staff is located at state, area and local/county offices. NDSU Extension combines funding from federal, state, county and grant sources to specifically address local concerns.

### Agency Mission Statement

Empower North Dakotans to improve their lives and communities through science-based education. NDSU Extension believes:

- In lifelong learning through transformational education
- That all people belong and deserve respect
- In stakeholder input to guide program development
- In science-based, locally relevant information
- In the value of partners and collaboration

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Education (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

### Agency Future Critical Issues

The mission of NDSU Extension is to empower North Dakotans to improve their lives and communities through science-based education. In response to current and emerging citizen needs, Extension specialists use their expertise in a particular field to develop recommendations, programs, and find solutions to producer and community problems. Extension agents extend these recommendations and programs to all 53 counties and the four American Indian reservations.

Extension's mission, programs, effectiveness and efficiency were comprehensively reviewed by the State Board of Agricultural Research and Education (SBARE) in 2017. The recommendations from the review and the substantial public input to SBARE during their hearings to set agency priorities have established the basis for numerous changes in Extension's organization and programs. The two priority items that were identified were 1) Extension web and digital delivery and 2) Extension operational support. Solidifying these two areas will maintain and enhance Extension's ability to provide transformational education to North Dakotans. (Transformational education is an educational model that combines high quality educational content with trusted, facilitated processes that results in improved economic or environmental conditions or behaviors.)

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## Extension web and digital delivery

SBARE's review of Extension recommended that Extension optimize the use of technology and target younger age demographics to enhance the effectiveness and efficiency of delivery methods. To accomplish this goal, Extension needs to transition its web strategy to meet future opportunities and ever-changing user needs.

Transitioning Extension's web presence is a significant undertaking because of the complexities of the diversity of materials, the diversity of who generates and manages content, how Extension users access the content (for example, computer, smartphone), and how users interact with the apps and information.

A new strategy will allow Extension to:

- Optimize content for smartphones and tablets, and emerging technologies such as voice-assisted search and augmented reality, especially to reach younger audiences
- Feature more interactive educational modules
- Optimize navigation and search features
- Add more social media use
- Incorporate more apps

Redeveloping Extension's web presence will also be aligned with transformational education, which is the foundation of Extension's mission.

## Extension operational support

NDSU Extension is structured to engage with local citizens through the network of county Extension agents and offices. It develops programs that respond to local issues. Extension agents are supported by specialists on campus and at Research Extension Centers. Using their specialized expertise they develop science-based program delivery approaches for agriculture, natural resources, youth, families and communities.

North Dakota receives incredible public value from Extension agents in their local counties as shown by support from several hundred state residents at community hearings and the nearly 150 letters and oral testimony received by SBARE during their hearings. Local educational programs include 4-H, crop and livestock management, health and community leadership, disaster response to droughts or floods, farm business and family finance areas. Complex issues such as soil health, nutrient management, cropping systems, herbicide and insect resistance, drought response and livestock management, and leadership programs were identified as priorities by North Dakota stakeholders for enhanced support.

To sustain local delivery of Extension programs and services, additional funding is needed to support Extension's partnership with counties. To maintain the effectiveness and efficiency of Extension specialists, increased operating support is needed to continue their development and delivery of high-impact programs for North Dakota.

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NDSU Extension

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## 2017-19 Legislation that Included Reporting Requirements to 2019 Appropriation Committees

### SB2020 (NDSU Research & Extension, & Agronomy Seed Farm)

**SECTION 3. ONE-TIME FUNDING — EFFECT ON BASE BUDGET — REPORT TO SIXTY-SIXTH LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fourth legislative assembly for ... the 2017-19 biennium one-time funding items included in the appropriation in section 1 of this Act:

One-Time Funding Description

Junior master gardener program — \$15,000

The 2017-19 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The extension service shall report to the appropriations committees of the sixty-sixth legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2017, and ending June 30, 2019.

**Status:** received; funds allocated

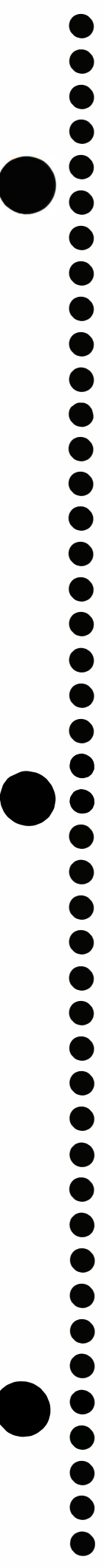


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# NDSU Extension Program Initiatives

Final Ranking by SBARE - May 3, 2018

NDSU EXTENSION

PROGRAM INITIATIVE

## Extension Operational Support

**JUSTIFICATION:** NDSU Extension is structured to respond to locally identified needs with science-based education through Extension agents who have strong relationships in their communities. Extension agents are supported by specialists on campus and at Research Extension Centers. These specialists have specialized expertise to develop science-based recommendations and training programs for agriculture, natural resources, families and communities. The Center for 4-H Youth Development supports youth programs across the state.

### COUNTY DELIVERY / EXTENSION AGENTS VALUED

In late 2017 and early 2018, the State Board of Agricultural Research and Education solicited citizen input on priorities for the upcoming legislative session. The board received nearly 150 pieces of written or oral testimony, which emphasized the importance of Extension to the citizens of North Dakota and highlighted the value of the local presence of Extension in communities across the state.

Because NDSU Extension funding was reduced by 13.9 percent for the 2017-2019 biennium, Extension and the North Dakota County Commissioners Association collaborated on a new cost-share agreement to fund Extension agents. Under that agreement, the counties would fund 40 percent of the agent's salary and benefits, and Extension would fund the remaining 60 percent.

This agreement increases the support that counties provide by approximately \$820,000 on a statewide basis for the biennium. While the counties are very supportive of the services of their local Extension agent, they are on record in seeking *"to restore state funding so that a longer-term funding model that reduces the property tax burden can be achieved."*

### STATE PROGRAM SUPPORT VITAL

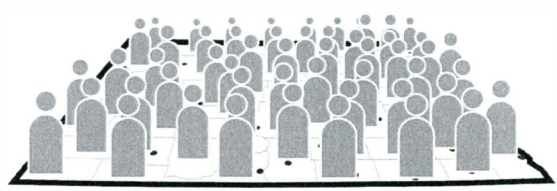
NDSU Extension specialists provide valuable leadership for complex issues such as soil health, nutrient management, cropping systems, herbicide and insect resistance, drought response and livestock management, and leadership programs such as Rural Leadership North Dakota. Specialists rely on operating funds to develop and travel to training workshops and field events, soil health café talks and training events on nitrate testing for drought damaged forages, etc. They train Extension agents, ag professionals and consultants, and agency partners, which is multiplied to help support the \$9 billion agricultural industry in North Dakota.

**NEED:** North Dakota receives incredible public value from Extension agents in their local counties. To sustain local delivery of Extension programs and services, additional funding is needed so Extension can continue to partner with counties to fund Extension agents. To maintain the effectiveness and efficiency of Extension specialists, they need increased operating support to continue their development and delivery of high-impact programs for North Dakota.

**Operating support - \$870,000**  
**(\$670,000 for county programming and \$200,000 for state programming)**

## Extension Team Serves North Dakota

- 4-H Youth Development | Crop Management
- Family Economics | Farm Business Management
- Horticulture and Forestry | Human Development and Family Science
- Leadership and Civic Engagement | Livestock Management
- Natural Resource Management | Nutrition, Food Safety and Health



Agents serve local needs



Supported by specialists with in-depth expertise

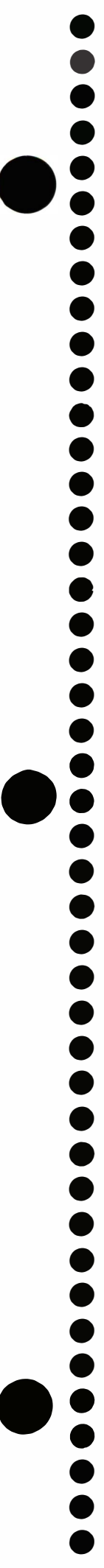
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# Agriculture and Natural Resources

NDSU | EXTENSION

Providing the educational programs to help people transform air, water and soil into food, fuel, fiber and a sustainable environment

Agriculture is critical to the economy of North Dakota and routinely accounts for approximately 30 percent (\$9.1B in 2015) of all business activity in the state. Extension Agriculture and Natural Resources (ANR) specialists and county-based agents work to ensure that the latest research-based information is available to all who seek it. These same specialists and agents continually probe and listen for agriculture's next "need," and develop innovative educational programs and field studies to meet those needs as fast as possible.

Approximately **15,000** producers attended county Extension farm bill education meetings in 2014



**90%** of respondents used the **Extension-developed farm bill decision aid tool** when making their final decision with FSA; of these respondents, **83% used the decision tool for ALL** of their acres

As of Dec. 2018, an estimated **\$1.3 billion** in farm bill payments were made to North Dakota producers since that training



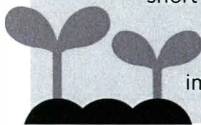
**6,932** downloads of the Extension **Pest Management App** since 2014, combining the Extension Plant Disease Management, Insect Control and Weed Control guides into a digital form

The app has the potential to save future printing costs of \$3 per copy

Soil health networking used **high tech** (twitter and video) and **low tech** (café talks)

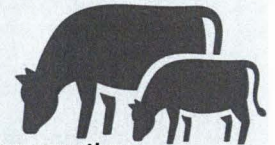
ways to share science-based and applied information to individuals with a common interest in soil health

This allowed everyday observations and short bursts of information as well as follow ups with personalized information implemented by producers



Forage testing, along with follow-up consultations and recommendations by Extension agents and specialists, prevented over

**16,000** cattle from being exposed to toxic forages during the 2017 drought



Other Extension drought responses:

- developed a platform to streamline **weekly drought condition reporting**
- played a key role in **testing forage and water** for producers
- **answered questions** through one-on-one conversations, articles and videos, and hosting meetings
- **provided information to producers** through meetings, presentations, media interviews, news releases and columns, publications and web-based materials

N.D. producers using precision ag technologies of all kinds realized an **\$88** per acre benefit compared to producers not using them



Extension has been providing educational programs on precision ag for more than **23 years**

More than **3,800** samples processed and **26,400** tests performed at the self-funded NDSU **Plant Diagnostic Laboratory** in 2017 resulted in **informed pesticide use decisions and economic savings** for North Dakotans



In 2017, **292** North Dakota gardeners **evaluated 106 promising home vegetable and herb varieties**

**99%** of responding households were **introduced to new varieties**

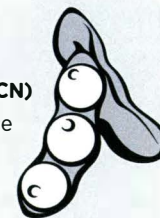
**87%** of responding households reported **more productive gardens**

**89%** of children in responding households who grew vegetables **improved their diets**

**89%** of children in responding households **improved their level of physical activity**



About **3,000** soybean cyst nematode (SCN) samples have been processed since 2013 because of county Extension office test kit distribution, helping growers identify and manage SCN



The value of planting resistant varieties when SCN is present is approximately a **40%** yield increase

For more information on these and other impacts of NDSU Extension, go to [www.ag.ndsu.edu/extension](http://www.ag.ndsu.edu/extension) or contact Charlie Stoltenow at 701.231.7171 or [charles.stoltenow@ndsu.edu](mailto:charles.stoltenow@ndsu.edu).

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## Ag and Natural Resources Educational Programs

### ■ Cropping Systems

- Soybean cyst nematode
- Increasing salinity and sodicity awareness
- Managing weeds under different production systems
- Managing herbicide-resistant weeds
- Prevention of Palmer amaranth incursion into North Dakota
- Managing Cercospora in sugar beets
- Managing root maggot in sugar beets
- Shop Talks: Sugar beet production
- Managing soil water through drainage and irrigation
- Using farm chemicals safely
- Pesticide application certification program
- Managing soil fertility
- Enhancing soybean yield and profitability
- Management of cereal crop diseases
- Wheat midge soil survey
- Management of stored grains
- Integrated pest management
- Introduction to organic agriculture
- Precision agriculture technology and data management

### ■ Farm Business Management

- Managing farm margins and financial decisions
- Ag lenders outlook and professional development
- Determining land values, cash rent and net return on land
- Understanding and coping with farmer/rancher stress issues
- Understanding the farm bill: ARC vs. PLC
- Understanding hedging and other risk management tools
- Price risk management for livestock producers
- Design Your Succession Plan
- Annie's Project - increasing knowledge and involvement of farm women
- Bioenergy and bio-byproduct economics

### ■ Horticulture and Forestry

- Master Gardener program
- Jr. Master Gardener program
- Promoting pollinator conservation
- Trees of Our Town—selecting the right tree species for your community
- Saline soils and shrubs
- Spring Fever Garden Forum
- Garden, horticulture or tree workshops

### ■ Livestock Management

- Stop the Truck—reviewing livestock health records before shipping
- Livestock mortality composting
- Antimicrobial stewardship
- Improving lamb quality and value
- Sheep education for new flocks
- Corn silage quality program
- Manure management
- Managing livestock during a drought
- Nitrate management in feeds and forage
- Feeding cattle for profit
- Livestock quality assurance
- Bovine emergency response program

### ■ Natural Resources Management

- Setting stocking rates
- Range and pasture management—grazing readiness
- Cover crops for healthy soil
- Reclamation and remediation of soil impacted by oil extraction
- Healthy soil schools
- Sodic soils: Should I tile the field or add an amendment?
- Café Talks: Soil Health—guiding farmer learning through networks
- Preparing for floods

### ■ Services Offered

- Crop and Pest Report—weekly
- Market Adviser column—monthly
- Plant Diagnostic Laboratory
- Certified Crop Adviser School
- Scout School
- Nitrate testing
- Feed testing
- Livestock water testing
- Variety trials and demonstrations

### ■ Youth Programs

- Livestock Camp
- Judging teams
- Kids, Compost, Crops and Consumption

This is a partial listing only. Please check with your local Extension office for more programs.

# Extension Family and Community Wellness

Developing healthy people living in healthy, vibrant communities

North Dakota State University Extension family and community wellness agents and specialists enhance the lives of individuals, families and producers through educational experiences, and encourage leadership and service to the community. You will find them at work in your county, at regional Parent and Family Resource Centers and on NDSU's main campus.



**2,447**

views of Field to Fork webinars, designed to **improve knowledge of growing, transporting, processing and preserving produce**

**55%** of participants surveyed will change practices

Knowledge of subjects presented increased from **52% to 82%**



More than **300** people from

**737** North Dakota organizations

have attended Lead Local since 2016, helping participants **feel more confident to run for and serve on boards, councils and committees**

*"I had been thinking of running for City Council for some time, and after taking the Lead Local program, it really gave me that extra confidence to move forward with that decision. The process of running for and winning the City Council seat was a great experience, and I'm using the tools from Lead Local to help me be the best representative I can be."*

- Lacey Hinkle, Cavalier, N.D.

Participants in the Diabetes Prevention Program reported an average **5.7% loss of their initial body weight**, along with improved levels of blood glucose, cholesterol and blood pressure



A body weight reduction of just 5 percent decreases an individual's risk of developing type II diabetes by 58 percent

Diabetes costs \$700 million in North Dakota each year



**98%** of farmers/ranchers in the Design Your Succession Plan program **indicated they were likely to work on their transition plan in the next six months**

*"So many farm families start with great intentions and expectations but fail to follow through because the succession planning process seems so daunting. A facilitator can help identify the client's needs and break the process down into steps for them."*

- Pam Geiger, lead tax specialist and farm succession planner for Farm Credit Services of Mandan, on the Design Your Succession Plan program

NDSU Extension food and nutrition education programs reached more than

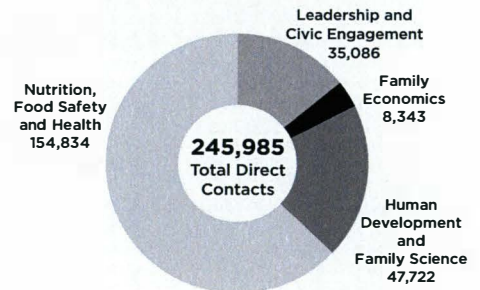
**154,000** people in 2017, **helping participants learn to eat healthfully**,

which benefits them as well as all of North Dakota by decreasing the collective health-care costs of poor nutrition and obesity

Obesity results in an estimated \$147 billion in direct medical costs in the U.S.



Over **1,700 hours** of parent education classes are provided to **7,500** North Dakota parents and other adults each year, **strengthening families and improving the well-being of children** which reduces costs spent on child welfare and lowers crime by adults



For more information on these and other impacts of NDSU Extension, go to [www.ag.ndsu.edu/extension](http://www.ag.ndsu.edu/extension) or contact Lynette Flage at 701.231.7782 or [lynette.flage@ndsu.edu](mailto:lynette.flage@ndsu.edu).

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## Family and Community Wellness Educational Programs

### ■ Personal and Family Finance

[www.ag.ndsu.edu/money](http://www.ag.ndsu.edu/money)

**Design Your Succession Plan** — This multisession program assists farm and ranch families in getting started on their succession plan and shaping the future ownership of their business.

**Annie's Project** — This workshop empowers farm women to be better business partners through a series of educational sessions covering the business of farming and ranching.

### ■ Food and Nutrition

[www.ag.ndsu.edu/food](http://www.ag.ndsu.edu/food)

**Health and Nutrition** — Multiple health and nutrition programs have been developed for various audiences and include On the Move to Better Health, MyPlate resources, Faith Communities Alive!, Nourishing Boomers and Beyond, and Eat Smart. Play Hard. Together.

**Diabetes Prevention Program** — This community-based, lifestyle-change program offers diabetes prevention education and support for people with prediabetes and those at high risk for prediabetes.

**The Family Table** — This is an online resource with activities, handouts, newsletters and more to encourage family meals, which provide numerous benefits to children and parents.

**Food Preparation and Preservation** — Online materials assist in preparing and preserving healthful and safe food. Food preservation publications include information on canning, drying, freezing, pickling, fermenting, working with wild game, meat and fish, equipment needed and how to store foods properly.

**Smarter Lunchrooms** — This program that nudges kids to eat more healthfully at school. Our Smarter Lunchrooms technical assistance providers work to improve the environment and practices in schools to positively influence healthful eating.

### ■ Children, Parents and Families

[www.ag.ndsu.edu/cff](http://www.ag.ndsu.edu/cff)

**Nurturing Parenting Program** — It offers family-based parent education programs that help families establish a nurturing way of life and develop healthier, stronger relationships.

**Parents Forever** — This provides education to aid families in transition (divorce education). It explores the effects of divorce on children, managing stress in family transitions and maintaining respectful, healthy relationships.

**Mental and Behavioral Health** — Online information on selected resources and programs to increase awareness and assist individuals in seeking out support for needs related to mental, emotional, and behavioral health. Website includes resources for farmers and ranchers in times of stress.

### ■ Aging and Wellness

[www.ag.ndsu.edu/aging](http://www.ag.ndsu.edu/aging)

**Powerful Tools for Caregivers** — This program supports caregivers of spouses, partners, adult children, children with special needs, other family members, neighbors and friends.

**Stepping On** — The program assists older adults in reducing falls and learning safety strategies in everyday life.

### ■ Leadership Development and Civic Engagement

[www.ag.ndsu.edu/ccv](http://www.ag.ndsu.edu/ccv)

**Rural Leadership North Dakota (RLND)** — This 18-month statewide leadership development program includes personal skill development and seminars with experts.

**Lead Local** — This one-day training helps aspiring, elected and appointed leaders be better prepared to serve on boards, councils and committees.

**Building Tomorrow's Leaders and Youth Lead Local** — Comprehensive youth leadership programs empower high school youth to build their confidence and skills to lead and get involved civically.

**Marketing Hometown America** — A community study circle process helps residents better understand community assets and what people are looking for as they relocate to a rural community.



# North Dakota 4-H

Inspiring North Dakota youth to reach their full potential

NDSU | EXTENSION

4-H prepares youth for success and the challenges facing North Dakota. It contributes to the development of new leaders, encourages innovation and entrepreneurship, teaches good stewardship, and helps youth acquire important life skills preparing them to be career- and work-ready.

As a non-formal education program, 4-H youth LEARN by choosing an area of interest, get good at something, develop a positive outlook about their learning, direct their own learning and demonstrate it in a number of ways.

4-H youth also LEAD by assuming greater responsibility and accountability, developing good people skills, serving in leadership roles and leading in giving back to their communities.



## LEARNING

North Dakota 4-H youth develop life skills of teamwork, decision making, critical thinking and public speaking by engaging in a variety of learning experiences. These skills, coupled with mastering content and integrating knowledge, develop exceptional workforce competencies, making youth ready for post-secondary education, work and life.



## LEADING

North Dakota 4-H prepares youth as future leaders through intentional experiences in leading. Beginning at the elementary school age, youth in 4-H become involved as active, engaged citizens and leaders in their local clubs and communities. Youth grow as citizen leaders by finding and using their voice to address local issues and needs, and participate actively in discussions and programs that benefit others.

Youth throughout the U.S., including North Dakota, participated in research to define and measure positive youth development (Source: Lerner and Lerner 2011). **Compared with their peers, youth involved in 4-H programs are:**

**2X** more likely to participate in STEM activities

**75%** of youth participants in the Incredible Wearables/ National Youth Science Day Experiment reported it helped them learn how to **use science to solve problems**

**2X** more likely to be civically active

**1,000+** youth demonstrate **leadership skills** through 4-H club offices, 4-H Ambassadors, or special projects

**2X** more likely to make healthier choices

Youth participating in the Impact Teen Driver program reported a **60%** increase in their **ability to make good decisions** as a driver and a passenger

**4X** more likely to give back to their communities

**777** volunteer service hours contributed to the state by North Dakota 4-H Ambassadors in 2016-17

## North Dakota 4-H in 2017-18

**6,347** enrolled 4-H members

**2,373** volunteers

**359** youth volunteers

**1,002** youth in 4-H camping programs

Total youth participants by residence:

**26%** from farms

**38%** from towns under 10,000 and rural non-farms

**36%** from towns and cities over 10,000

**24,491** total youth participants



**19%** 4-H enrollment increase in past five years

For more information on these and other impacts of NDSU Extension, go to [www.ag.ndsu.edu/extension](http://www.ag.ndsu.edu/extension) or contact Brad Cogdill at 701.231.7259 or [brad.cogdill@ndsu.edu](mailto:brad.cogdill@ndsu.edu).

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4-H is North Dakota State University Extension's youth development program. It is available for youth ages 5 to 18.

4-H accomplishes its work through local Extension staff, with support from Extension specialists, who lead the nonformal educational program through clubs, school enrichment, camping, afterschool and special-topic settings in their communities. 4-H gets its capacity through the work of adults who serve as volunteer leaders. They guide the youth with leadership and organizational support.

4-H Youth Development is an organization and a program.

As an organization, youth join 4-H and the adult volunteers are approved to serve as leaders to create a safe environment for learning through effective youth-adult relationships. As part of a high-quality 4-H experience, youth are expected to:

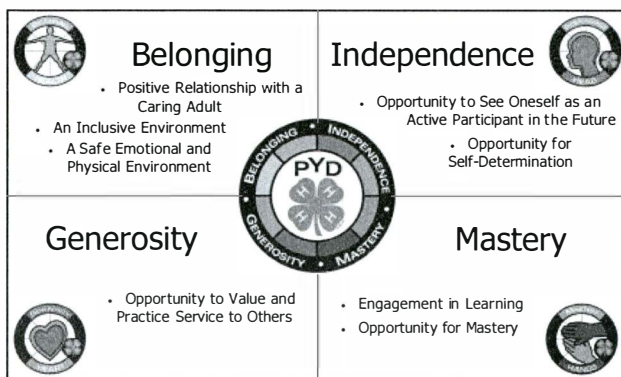
- Select projects for in-depth study
- Record what they learn (record books)
- Attend meetings regularly and be active participants
- Complete community service projects (or become involved in a group community service project)
- Participate in some form of public presentation
- Have projects evaluated (usually part of 4-H achievement days or a fair)

As a program, 4-H offers planned learning experiences at the county, multicounty, state, regional and national levels related to:

- Animal science
- Communication skills
- Clothing, home and consumerism
- Creativity
- Environment, outdoor skills and shooting sports
- Food, nutrition and health
- Plant, soil and range science
- Preventing and reducing youth risk behavior
  - Boundaries and Boundaries Jr.
  - Impact Teen Drivers
  - Living Online: Middle School, High School and Caring Adults
  - Overdone: Practicing Wellness in Busy Families
- Science, engineering and technology
- Service to others
- Youth camping at the North Dakota 4-H Camp
- Youth leadership and civic engagement

4-H is authorized by the U.S. Congress, and at the federal level, is the responsibility of the U.S. Department of Agriculture (USDA), National Institute for Food and Agriculture (NIFA). The authority for the program is assigned to the state's land-grant university (North Dakota State University) and its Extension program. USDA establishes the use of the 4-H name and emblem, and accountability measures related to fund-raising to support the 4-H program. NDSU Extension's 4-H Youth Development Program has the responsibility and authority to define what is and is not a 4-H educational program. It also authorizes counties to use the federally protected 4-H name and emblem, and establishes statewide policy and accountability for the 53 county programs where 4-H is conducted.

## 4-H's foundation is the Essential Elements of Positive Youth Development



Source: University of Illinois Extension

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## Agency Overview

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# Main Research Station

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

ND Constitution Article XIX; North Dakota Century Code Chapter 15-12.1

### Agency Description

The North Dakota State University Main Research Station is located on the campus of the North Dakota State University of Agriculture and Applied Science. The station is the administrative location of the North Dakota Agricultural Experiment Station. The station conducts research and coordinates all research activities of the Agricultural Experiment Station. The purpose of the research is the development and dissemination of technology important to the production and utilization of food, feed, fiber, and fuel from crop and livestock enterprises. The research provides for an enhancement of economic development, quality of life, sustainability of production, and protection of the environment. The Main Research Station keeps detailed records of all activities and publishes the information that will be of value to the residents of this state.

### Agency Mission Statement

The agricultural experiment station shall develop and disseminate technology important to the production and utilization of food, feed, fiber, and fuel from crop and livestock enterprises. The research must provide for an enhancement of the quality of life, sustainability of production, and protection of the environment.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Education (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

### Agency Future Critical Issues

SBARE carefully considered stakeholder input and has identified the following Agency Future Critical Issues:

#### A. Agri biome Initiative

Knowledge of the human microbiome has revolutionized medicine and nutrition and fueled the \$45 billion probiotics industry. A similar revolution is happening in agriculture, where the microbiomes of crops, soils, and livestock (the Agri biome) are being harnessed to increase productivity, efficiency, safety, and quality. Food production must double to meet the global population demand by 2050, despite depleting water resources, shrinking farmland, and rising input costs. The inputs that drove intensive crop production in the 20th century have diminishing returns and may lead to unintended environmental consequences, so the next agricultural revolution must be based on a more sustainable approach that harnesses microbiomes to increase water- and nutrient-use efficiency, stress tolerance, disease resistance, and production of high quality food and agricultural products.

**NDSU** NORTH DAKOTA AGRICULTURAL  
EXPERIMENT STATION

Microbes were an untapped resource until recently, with just a tiny fraction of the microbial world accessible by traditional research methods. Major scientific breakthroughs now allow all microbes to be readily identified, creating a platform for innovation through the discovery of microbes with desirable traits in agriculture (agricultural probiotics). While all sectors of agriculture can benefit from the development of probiotics, the potential gains in crop and livestock production are as exciting as they are highly relevant to North Dakota. The North Dakota Agricultural Experiment Station (NDAES) has several areas of strength that can support an Agri biome initiative focused on crop and livestock production. These include:

- Strong programs in plant breeding, genetics, and genomics; plant nutrition; plant pathology; soil health; and water quality.
- Strong programs in animal nutrition, physiology, husbandry, genetics, and health as well as range sciences and forages.
- Facilities to study microbiomes from lab to field or herd scale.
- Infrastructures to connect researchers with producers across the state to understand problems, identify solutions, and translate discoveries into practical applications.

Research focused on the rhizosphere microbiome (microbes at the soil-root interface) will have large impacts on productivity, efficiency, and quality of both crops and livestock. In addition to a role in discovery, NDAES has the facilities to test the performance of microbial products at the laboratory, greenhouse, field, and herd scale. These activities would be of benefit to the ND producers as well as provide benefit to the private sector, by ensuring the efficacy of products that may be available in the market. A number of crop and livestock production challenges can be addressed by this initiative, including:

- Nitrogen use efficiency. Less than 50% of nitrogen applied as fertilizer is used by the plant. Unused nitrogen can leach into groundwater or runoff into surface water, causing pollution. Engineering the rhizosphere microbiome to increase nitrogen use efficiency will improve water quality and reduce fertilization costs. Additionally, nitrogen use efficiency in livestock is a critical concern in terms of both productivity gains and environmental stewardship.
- Productivity in saline soils. About 13% of the land area in North Dakota is affected by surface salinity. It is estimated that more than \$150 million in revenue is lost annually in the Red River Valley alone due to salinity-related yield reductions in corn, soybean, wheat, and sugarbeet. One approach to this problem is to transplant microbes from salt tolerant plants to salt sensitive crops to increase production yields in saline soils.
- Livestock exist in a uniquely symbiotic relationship with the Agri biome, including the microbiome present with the livestock, the soil, and their feedstuffs. In North Dakota, this is especially important as most of our livestock enterprises include ruminants, which rely on microbes to ferment forages and other feedstuffs. A number of areas of research may yield significant impacts, including:
  - Digestive physiology. Gut microbes are critically important to nutrition, and they impact nutrient fermentation, nutrient use efficiencies, digestion, absorption, and the epigenome. Enhanced understanding of the gut agri biome will improve growth, digestion, and production efficiencies; while at the same time enhancing sustainability and environmental stewardship.
  - Animal Health. The agri biome plays an important role in animal health. Obtaining a better understanding of the role the agri biome has on animal health should lead to advances in vaccine and antimicrobial efficacy, as well as improved disease resistance in livestock.
  - Food Quality and Storage Characteristics. A better understanding of the role of the agri biome on food quality and storage characteristics could lead to enhanced storage methods, higher food quality products, longer shelf life, and reductions in food borne illnesses.
- Drought tolerance. The drought tolerance of crops can be enhanced by incorporating microbes that are adapted to drought conditions into the microbiome of crops and forages grown in dry conditions.
- Food Quality and Health. Engineering the microbiome to increase phytonutrients and create functional foods to counter diet-linked chronic diseases such as diabetes.

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## **B. Precision Agriculture**

The future of farming will be 'smart farming' that incorporates computer systems to make real-time decisions based on digital data (artificial intelligence) of the conditions in the field. The smart farm is expected to have increased production efficiency, reduced labor costs, and better net return, while providing more protection to the environment. These technological innovations in Precision Ag are taking place at a fast pace, with new technologies coming to market every year. A 2018 survey by Glacier Farm Media ([www.farmmedia.com](http://www.farmmedia.com)) indicates that 89-90% of farmers surveyed felt that using sensors, digital data, and autonomous systems can decrease production cost, increase yield, and/or save time. Unmanned Aerial Systems (UAS), for example, used in Precision Ag are expected to contribute up to 80% of the \$80 billion UAS market by 2025.

North Dakota has a large concentration of companies involved in Precision Ag that seek partnerships with NDSU to expand and field validate their technologies. Agricultural producers need research-based information on profitable Precision Ag technologies to adopt, best utilize, or optimize these technologies on individual farms, and learn how to convert the huge amount of data collected in the field to appropriate decisions.

Some of the more recent issues with chemical application (e.g., Dicamba drift), effective management of resistant weeds, nutrient management in crops, assessing weather damage on crops, as well as managing fields for better soil health, etc. are just some of the areas Precision Ag can contribute.

### **Return on Investment**

Precision Ag research at NDSU will benefit the North Dakota agricultural industries by increasing crop yield and efficiency of food production, and reducing inputs. Adopting Precision Ag can result in an economic benefit of as much as \$165/A in North Dakota (Schimmelpfennig, USDA, 2016). Precision Ag can improve both soil health and water quality by minimizing runoff of inputs. It also can improve grain quality through the timely and precise application of inputs to the developing crops, resulting in additional benefits to the producers and environment.

Investing in Precision Ag research will facilitate partnerships with the private sector, both established and startup technology companies. Precision Ag scientists at NDSU can address research needs in the state and collaboration requests from major agriculture and technology companies in the state. North Dakota has a large number of startup companies, and many major Precision Ag technology providers, which makes the state well positioned to be a leader in Precision Ag. Enhancing a strong research program at NDSU is critical to complementing these entrepreneurial efforts.

Currently, we have gaps in expertise in the following areas:

- Big data management and machine learning in Precision Ag: Vast amounts of data are collected by sensors, unmanned aerial systems, and agriculture machinery. Research is needed to develop crop management decisions by applying machine learning methods to these data and to develop data management strategies necessary for smart farms of the 21st century.
- Site-specific chemical application: Examples of issues that need to be addressed include monitoring herbicide injury (e.g., glyphosate injury in crops or Dicamba in non-tolerant crops), establishing conditions contributing to herbicide drift, temperature inversion effects, site-specific weed management, and herbicide resistance management in weeds. Research is also needed on precision management of insect pests and diseases.
- Robotics and autonomous systems: Machinery manufacturers are requesting partnerships to develop sensors and intelligent systems that make their machines more autonomous (where a computer makes decisions rather than an operator). Major industries are approaching NDSU for research collaboration, as autonomous and robotic systems can improve operational efficiency, and reduce labor requirements.
- Nutrient management: Site-specific management of nutrients in crops can improve soil health. Precision Ag technologies can help in monitoring soil problems and manage crop by square inch to improve soil health.

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- Economic viability of Precision Ag technologies: new Precision Ag technologies are coming at a fast pace without adequate independent study on their economic viability. Therefore, it is important to evaluate technologies for their economic viability. Also, the crop budgets handled by most farm management software need to be modified to include site-specific input application regimes.

### **C. Enhancing Research Capacity - Increased Support for Operations**

Agricultural research is a labor-intensive effort spanning a number of disciplines to improve the profitability of farming, ranching, and agribusiness enterprises. A strong focus of the research effort at the NDAES is to work on providing solutions to problems that affect crop and livestock production, improve production efficiency, product quality, and environmental sustainability.

Operating costs for research activities continue to increase. Scientists at the Research Extension Centers (RECs) and the Main Station receive high levels of grant funding from a variety of agencies. However, inflationary pressures on operating costs, such as state motor pool leasing, equipment repairs, and supplies, reduce our ability to respond to current and future production-related issues affecting crop and livestock producers. In addition, it is critically important that our scientists remain relevant by incorporating new technologies into our research programs, which allows the NDAES to emulate the rapidly changing technology environment that exists in 21st Century Agricultural systems.

An increase in operating funds for RECs (\$30,000/REC/biennium) was last received in the 2015-17 session. Funds for the 2019-21 biennium would be used to offset increasing costs of fuel, supplies, minor equipment, and timeslip (student) labor needed for our existing research projects.

The Oakes Irrigation Site has been funded through the Garrison Conservancy District. This funding will no longer be available in the near future. The facility has been supervised through the Carrington REC, but is entirely grant supported. Stakeholders in the region have made commitments to provide support for the Oakes site, including a gift of 40 acres to increase the research land area. The facility carries out research on high-value irrigated crops for the SE region of ND.

North Dakota Agricultural Experiment Station

## 2017-19 Legislation that Included Reporting Requirements to 2019 Appropriation Committees

### SB2020 (NDSU Research & Extension, & Agronomy Seed Farm)

**SECTION 3. ONE-TIME FUNDING — EFFECT ON BASE BUDGET — REPORT TO SIXTY-SIXTH LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fourth legislative assembly for ... the 2017-19 biennium one-time funding items included in the appropriation in section 1 of this Act:

One-Time Funding Description

Seed cleaning plant; Other Fund authorization - \$1,500,000

The 2017-19 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The main research center shall report to the appropriations committees of the sixty-sixth legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2017, and ending June 30, 2019.

- Seed Cleaning

**Status:** Fundraising campaign for seed cleaning project underway at Williston REC

**SECTION 7. DICKINSON RESEARCH EXTENSION CENTER — MINERAL RIGHTS INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues received during the 2017-19 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the biennium beginning July 1, 2017, and ending June 30, 2019.

**Status:** Oil Revenue received July 1, 2017 to November 30, 2018 - \$114,592

**SECTION 8. WILLISTON RESEARCH EXTENSION CENTER — MINERAL RIGHTS INCOME.** The Williston research extension center shall report to the appropriations committees of the sixty-sixth legislative assembly on amounts received and spent from mineral royalties, leases, or easements in the biennium beginning July 1, 2015, and ending June 30, 2017, and the biennium beginning July 1, 2017, and ending June 30, 2019.

**Status:** July 1, 2013 to June 30, 2015 - Amounts received \$491,230; Amounts spent \$0  
July 1, 2015 to June 30, 2017 - Amounts received \$141,034; Amounts spent \$581,570  
July 1, 2017 to November 30, 2018 - Amounts received \$22,640; Amounts spent \$23,883

**SECTION 12. EXEMPTION.** The amounts appropriated for the veterinary diagnostic laboratory and the seed cleaning plants contained in subdivision 4 of section 1 of chapter 20 of the 2015 Session Laws, are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or related revenues are available and may be expended during the biennium beginning July 1, 2017, and ending June 30, 2019.

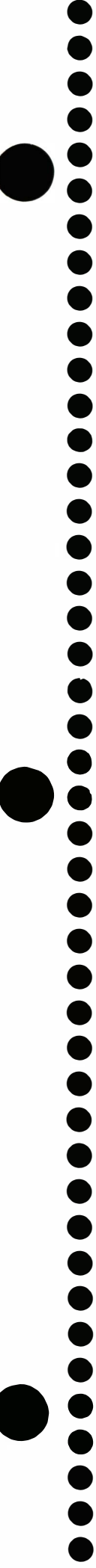
Carryover Status	GF Carryover	OF Carryover	Amount Spent 12/31/2018	Status
Seed Cleaning plant NCREC	575,693	1,545,888	565,551	Remaining GF to be spent by 6/30/2019
Seed Cleaning plant CREC	-	1,393,110	602,984	Project to be complete 6/30/2019
Veterinary Diagnostic lab	-	3,675,781	3,461,515	Remainder returned to SIFF (\$214,266)

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# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Agribiome Initiative

Knowledge of the human microbiome has revolutionized medicine and nutrition and fueled the \$45 billion probiotics industry. A similar revolution is happening in agriculture, where the microbiomes of crops, soils, and livestock (the Agribiome) are being harnessed to increase productivity, efficiency, safety, and quality. Food production must double to meet the global population demand by 2050, despite depleting water resources, shrinking farmland, and rising input costs. The inputs that drove intensive crop production in the 20th century have diminishing returns and may lead to unintended environmental consequences, so the next agricultural revolution must be based on a more sustainable approach that harnesses microbiomes to increase water- and nutrient-use efficiency, stress tolerance, disease resistance, and production of high quality food and agricultural products.

Microbes were an untapped resource until recently, with just a tiny fraction of the microbial world accessible by traditional research methods. Major scientific breakthroughs now allow all microbes to be readily identified, creating a platform for innovation through the discovery of microbes with desirable traits in agriculture (*agricultural probiotics*). While all sectors of agriculture can benefit from the development of probiotics, the potential gains in crop and livestock production are as exciting as they are highly relevant to North Dakota. The North Dakota Agricultural Experiment Station (NDAES) has several areas of strength that can support an Agribiome initiative focused on crop and livestock production. These include:

- Strong programs in plant breeding, genetics, and genomics; plant nutrition; plant pathology; soil health; and water quality.
- Strong programs in animal nutrition, physiology, husbandry, genetics, and health as well as range sciences and forages.
- Facilities to study microbiomes from lab to field or herd scale.
- Infrastructures to connect researchers with producers across the state to understand problems, identify solutions, and translate discoveries into practical applications.

**REQUEST:** 2.0 FTE scientist and technician (\$355,000 salary and fringe—focusing on microbe-livestock interactions) and 2.0 FTE scientist and technician (\$355,000 salary and fringe—focusing on organismal-plant interactions); \$450,000 operating.  
**Total — \$1,160,000**

Addressing important areas of the Agribiome related to crop and livestock production will require a multi-faceted approach. While several scientists are already engaged in researching some aspects of the Agribiome, additional scientists will reduce gaps in our existing expertise and move North Dakota to the forefront in this critical area.



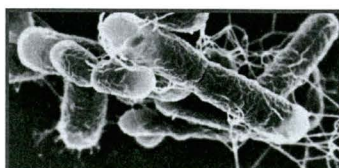
(NDSU photo)



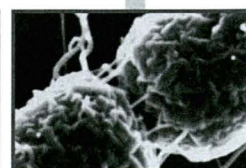
(NDSU photo)



(NDSU photo)



E. Coli (NDSU photo)



E. Coli biofilm (NDSU photo)



# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

NDSU NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Precision Agriculture

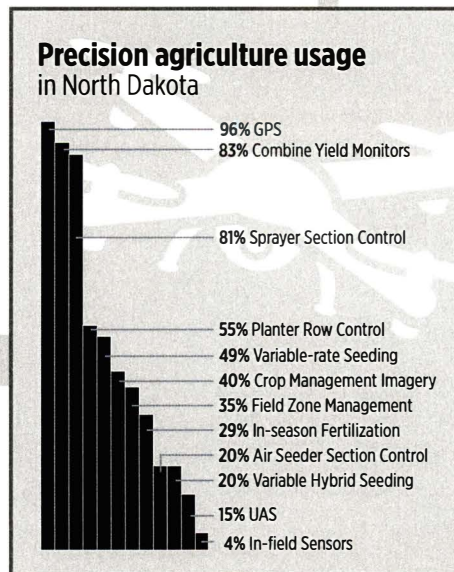
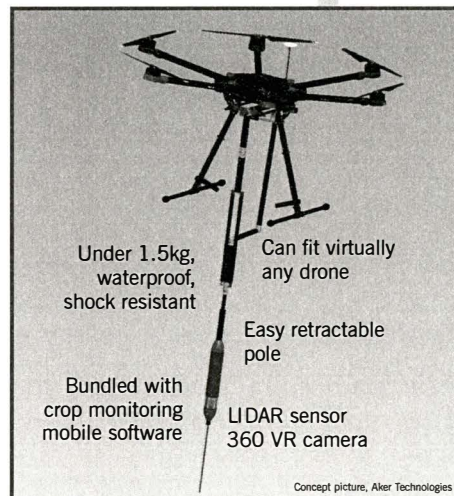
The future of farming will be 'smart farming' that incorporates computer systems to make real-time decisions based on digital data (artificial intelligence) of the conditions in the field. The smart farm is expected to have increased production efficiency, reduced labor costs, and better net return, while providing more protection to the environment. These technological innovations in Precision Ag are taking place at a fast pace, with new technologies coming to market every year. A 2018 survey by Glacier Farm Media ([www.farmmedia.com](http://www.farmmedia.com)) indicates that 89-90% of farmers surveyed felt that using sensors, digital data, and autonomous systems can decrease production cost, increase yield, and/or save time. Unmanned Aerial Systems (UAS), for example, used in Precision Ag are expected to contribute up to 80% of the \$80 billion UAS market by 2025.

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Precision Ag research at NDSU will benefit the North Dakota agricultural industries by increasing crop yield and efficiency of food production, and reducing inputs. Adopting Precision Ag can result in an economic benefit of as much as \$165/A in North Dakota (Schimmelpfennig, USDA, 2016).

Precision Ag can improve both soil health and water quality by minimizing runoff of inputs. It also can improve grain quality through the timely and precise application of inputs to the developing crops, resulting in additional benefits to the producers and environment.

**REQUEST:** The 2015-17 Legislative session provided \$600,000/biennium in operating funds for Precision Ag research. These funds are distributed through an internal competitive grants process. In each biennium, funds requested greatly exceeded the amount that was distributed. An increase in **Operating (\$800,000)** is requested to establish a smart crop farm at Casselton and a smart livestock farm at Fargo that utilizes sensors, autonomous systems, and data to make crop management decisions, and to evaluate these decisions in partnership with industries.



An example of a greenhouse using LED lighting technology that can help boost food production. (photo Shutterstock.com)

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# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Enhancing Research Capacity

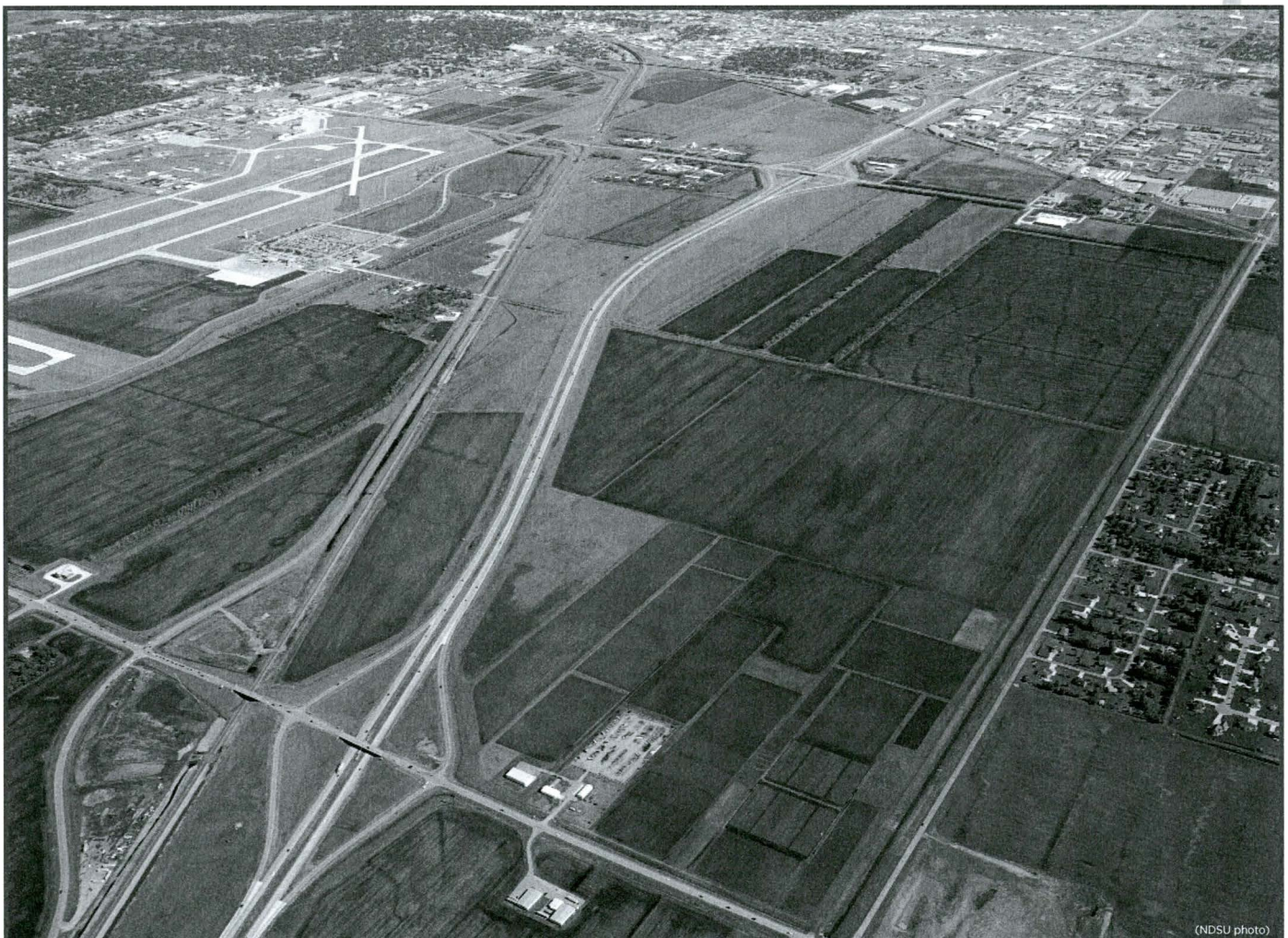
### Support for Operations to Offset Inflationary Costs

Agricultural research is a labor-intensive effort spanning a number of disciplines to improve the profitability of farming, ranching, and agribusiness enterprises. A strong focus of the research effort at the NDAES is to work on providing solutions to problems that affect crop and livestock production, improve production efficiency, product quality, and environmental sustainability.

Operating costs for research activities continue to increase. Scientists at the RECs and the Main Station receive high levels of grant funding from a variety of agencies. However, inflationary pressures on operating costs, such as state

motor pool leasing, equipment repairs, and supplies, reduce our ability to respond to current and future production-related issues affecting crop and livestock producers. In addition, it is critically important that our scientists remain relevant by incorporating new technologies into our research programs, which allows the NDAES to emulate the rapidly changing technology environment that exists in 21st Century Agricultural systems.

**REQUEST:** Operating support for REC's — \$280,000; Operating support for Main Station — \$210,000; Operating support for Oakes site — \$200,000. **Total — \$690,000**



(NDSU photo)

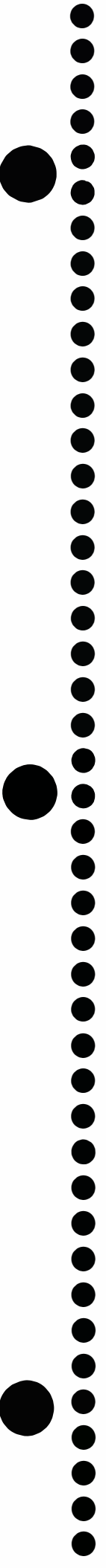
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## North Dakota Agricultural Experiment Station Main Research Station

### 2017-2019 IMPACTS

- A novel radio frequency sensor is being developed to reduce grain loss during harvesting; this work is in collaboration with industry and other NDAES units. A grain loss of 10 percent during harvesting is not unusual and is higher than the industry standard of 1 to 3 percent. In North Dakota, a grain loss of 5 percent above the standard will result in a loss of approximately 22.5 million bushels of corn, and 12.5 million bushels each of wheat and soybean. The development of a sensor that detects grain loss in real time and allows farmers to make quick combine adjustments will save approximately \$85 million for corn, \$73 million for soybean and \$71 million for wheat in the state.
- The impact of storage environments on green and semigreen soybeans is being studied by NDAES researchers in collaboration with NDSU Extension. High discounts are applied at the elevator when a large presence of green soybeans occurs, and this proportion of green soybeans usually varies from season to season. This study will provide best management strategies to North Dakota farmers during drying and storage, especially in seasons when a high proportion of green soybeans is harvested.
- The Red River Valley of North Dakota and Minnesota accounts for about 50 percent of the sugar beet production in the U.S. Sugar beet growers and sugar industries require tools for in-season diagnosis of crop development and forecasting of crop yields at harvest. Spatial variation of crop growth and yield can be explained by the diversity of environmental factors and cropping systems. NDAES researchers are developing a computer model and decision support system to improve diagnosis of crop growth and yield prediction of sugar beet grown in the Red River Valley.
- NDAES agricultural engineers are revising a publication on irrigation scheduling by the “checkbook” method to include more recently developed online and spreadsheet tools for irrigation scheduling in North Dakota. The checkbook publication presents principles and procedures for effective irrigation water management to help growers optimize crop yields, avoid excessive pumping costs, manage water resources and withdrawals, and minimize leaching of nutrients to groundwater. The irrigation scheduling publication and tools have been used as educational aids for growers, agencies and students.
- NDAES researchers have conducted studies in alfalfa harvest management and fertility. Research has demonstrated that optimization of management and fertility practices can increase forage yield by at least 0.3 ton/acre/year. In 2017, North Dakota had 449,046 acres of pure alfalfa and 962,015 acres of alfalfa-grass mixtures. Thus, an increase in forage yield of 0.3 ton/acre/year x 1,411,061 acres (alfalfa and alfalfa-grass mixtures) at \$100/ton of hay equals an economic impact of \$42,331,830/year.

*NDAES agricultural engineers are revising a publication on irrigation scheduling by the “checkbook” method to include more recently developed online and spreadsheet tools for irrigation scheduling in North Dakota.*



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- Control of herbicide-resistant weeds is estimated to cost \$10 to \$40 more per acre than standard weed control. In comparison, proactive resistance management strategies are estimated to provide long-term annual economic returns of \$20 to \$50 per acre. The weed genetics project is developing tools to facilitate proactive resistance management through genetic diagnostics and to mitigate resistance using emerging genetic technologies.
- Based on the last three years' average, North Dakota produced 55 percent (43.2 million bushels) of the durum in the U.S., with a \$268 million direct economic value to producers in North Dakota annually. More than 90 percent of the North Dakota durum acreage is sown with varieties developed at the NDAES. In 2018, Divide and the two new varieties, Carpio and Joppa, collectively were grown on 54 percent of the acreage in North Dakota. Two low-cadmium varieties, ND Grano and ND Riveland, with high yield potential, were released in 2017. If the new varieties replace 50 percent of the acreage and provide a 2 percent increase in yield, they will add approximately \$2.7 million annually to North Dakota producers.
- During 2016, the U.S. had 14,217 certified organic farms that produced \$7.6 billion in certified organic products. North Dakota had 114 certified organic farms that produced \$22.7 million in certified organic products. NDAES research is aimed at addressing one of the major problems faced by organic farmers and small- to medium-scale vegetable producers, which is weed management. Researchers are investigating novel approaches for suppressing weeds in these production systems. Results have been communicated to producers at several field days, and producers have indicated via surveys that they will utilize the new techniques.
- In 2018, 25 percent of North Dakota's spring wheat acreage was sown to varieties developed at the NDAES. The cash value of the 2017 spring wheat crop, according to National Agricultural Statistics Service estimates, was more than \$1.3 billion. According to NDAES ag economist William Wilson, a variety released from the NDAES spring wheat breeding program has an estimated direct economic impact to the state ranging from \$69 million to \$284 million beyond other competitive varieties for the period it remains in the marketplace. The spring wheat program also facilitates and participates in statewide variety trial testing for agronomic factors, as well as plant diseases. This unbiased source of data is invaluable to farmers as they make variety planting decisions.
- Soybean growers in the northern tier of North Dakota counties can save \$30 an acre in seeding costs by planting the glyphosate-resistant soybean variety ND17009GT, which was developed by the NDAES. As much as 500,000 acres of ND17009GT could be grown in 2019, which would save growers \$15 million in input costs by reducing their cost of seed.
  - Early detection and characterization of resistance traits in weeds such as wild oat, redroot pigweed and kochia have allowed changes in weed control programs and cultural practices to reduce the seed rain of resistant plants and restrict the geographic spread of the resistant biotypes. This can reduce the long-term herbicide input costs by 30 percent for the local geography.



*Research on soybean varieties, weed control and crop injury has resulted in more profits for growers.*

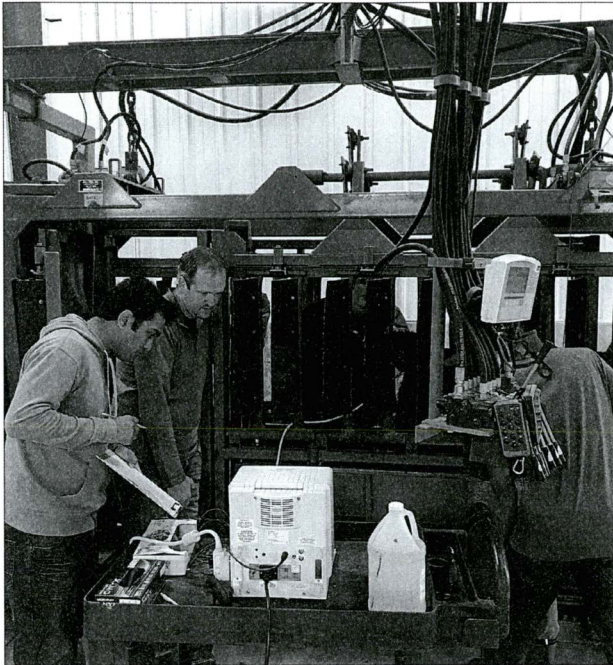
- Application of the same strategy for the recently introduced weed Palmer amaranth could be even more important because the cost of control programs in other states has more than doubled once this weed is established.
- Research repeatedly has demonstrated the susceptibility of group 1- and group 2-resistant wild oat in North Dakota to triallate. Where tillage can be used for incorporation, inclusion of triallate for wild oat control in wheat has resulted in a \$35 per acre return, compared with wild oat control with a postemergence herbicide alone. Adoption of this program and successful wild oat control have been identified in areas with incidence of resistance to both groups of postemergence wild oat herbicides.
  - Research has shown that off-target dicamba movement to susceptible soybean easily causes visible symptoms and can cause mild to moderate yield loss across large areas. Substantial visible injury of up to 60 percent vegetation loss has resulted in as much as 50 percent less seed yield. However, dicamba was not found at excessive levels in the seed, oil and protein content were not adversely affected, seed size was not altered appreciably, and germination and seedling growth were not inhibited. Soybean seed production might be reduced, but seed use, whether for the commodity or seed industry, should not suffer from off-target dicamba movement.
  - Winter camelina and field pennycress production in second-year relayed soybean production added \$268 to \$493 per acre grain value to soybean yields in a wheat/soybean/soybean cropping sequence. Field pennycress caused soybean yield reduction in a wheat/corn/soybean cropping sequence. Potential is indicated for winter camelina and field pennycress to add grain value in wheat/soybean/soybean cropping systems.
  - Based on the annual grower survey, 92 percent of the total acreage planted with black beans is of the Eclipse cultivar released by NDAES. At least 60 percent of the pinto bean acreage in the state will be grown with slow-darkening pintos, and approximately half of that area is grown with ND-Palomino, the first public slow darkening pinto released for the state and one of the first in the country.
  - Assuming an average price of \$0.35 per pound across the different market classes, NDAES cultivars help contribute approximately \$110 million to the state's economy every year. The value of production for dry beans in the state is approximately \$300 million annually.
  - In 2018, more than 18.9 percent of acres planted in the seven major states producing fall potatoes (Idaho, Washington, North Dakota, Wisconsin, Oregon, Maine and Minnesota) were planted to cultivars (or selections thereof) developed by the NDAES potato breeding program. The NDAES variety Dakota Trailblazer utilizes one-third less nitrogen than Russet Burbank; additionally, it is highly resistant to *Verticillium* wilt, thus, saving approximately \$200/acre fumigation costs for standard commercial processing cultivars.
  - The NDAES woody plant improvement project has introduced 57 superior ornamental woody plants for production and sale; these plants have increased disease tolerance and winter hardiness for landscapes throughout the northern Great Plains. NDAES woody plant introductions have a nursery wholesale sale value of more than \$2.1 million and a \$6.1 million value in retail sales for 2017 alone. Introductions are being propagated for sale by commercial wholesale firms in four countries: Australia, Canada, England and the U.S. (14 states, including 35 nurseries).
  - Artificial insemination (AI) offers beef producers the potential to make genetic progress in their herd at a fraction of the cost of purchasing herd bulls of equivalent genetic value. Research conducted by NDAES scientists indicates that the value of replacement heifers can be increased by more than \$500 per head through the use of AI. If an additional 10 percent of the 375,000 replacement heifers maintained in North Dakota were generated from AI breeding, the net increase in their value would be more than \$18 million annually.

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*NDAES scientists are evaluating the frame size of beef cows and its effect on efficiency. Matching the size of cows to resources and increasing longevity could save beef producers in North Dakota \$20 million annually.*

- Cow size affects the economics of calf production. NDAES scientists are evaluating the frame size of beef cows and its effect on efficiency. During the past four years, cows have been bred for different frame sizes and feed intake, and production has been measured in offspring. While the research is ongoing, so far, larger cattle are more efficient at using feed for growth, while smaller cattle wean more calf for their weight. This means larger and smaller cows will fit different operations, depending upon their goals and objectives. How long a cow stays in the herd, which is another objective of the research, will affect economic efficiency as well. A conservative estimate of savings by matching the size of cows to resources and increasing longevity would be \$20 million annually for North Dakota beef producers.
- Research related to the interactions between reproduction and nutrition, and research concerning regulation of ovarian, uterine and placental functions in nonpregnant and pregnant domestic animals, has identified selected mechanisms critical for reproductive efficiency that ultimately may improve fertility and embryo survival. A 1 percent increase in the pregnancy rate in North Dakota livestock potentially would result in more than \$10 million in increased revenue for North Dakota ranchers annually.
- Saline and nonsaline areas within a field function as different ecosystems. As such, saline patches should be delineated and managed separately. Saline soils tend to hold more water and more fertility throughout the growing season. Soil structure generally is better in nonsaline parts of the field, allowing better drainage and rooting conditions. As a result of these water and nutrient conditions in saline soils, microbial biomass is higher in the saline soils. This project ultimately will guide management of saline patches with the goal of improving field-level crop productivity and revenue across North Dakota.
- Deployment of the Mobile Cow Command Center (MCCC) units were successful and serve as portable units that use solar power to run individual components and upload data to cloud-based data acquisition platforms. SmartFeed units were able to control intake of individual animals assigned to different treatments in a group pasture scenario. The CowManager system was able to detect divergence in highly active behavior among treatment groups. The feed controlling portion of the MCCC can be used for precision feeding of individuals in expansive group-managed scenarios.

## Agency Overview

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# Carrington Research Extension Center

## North Dakota Agricultural Experiment Station

### Agency Statutor Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Carrington Research Extension Center (CREC) was established in 1960. CREC operates on a land base of around 1,700 acres and has infrastructure to irrigate about 260 acres with center-pivot systems and 120 acres by surface methods. The balance of the acreage is managed as traditional dryland and is utilized primarily for dryland field crop research activities.

The research effort at CREC focuses on these general program areas: traditional crop variety evaluation, crop production and management, plant disease management, alternative crop development, cropping systems, irrigation, integration of crop and livestock production, intensive cow/calf production, beef cattle feeding, feedlot management, livestock waste and nutrient management, foundation seedstocks production, and development of new agricultural enterprises. Through these efforts, the CREC research program has gained a national reputation for its involvement in agriculturally-based economic development and study of a wide range of crops and cropping systems.

CREC maintains a strong Extension program as five extension specialists base their educational programming from the center. The Extension program emphasis areas addressed by these specialists include: agronomy, plant pathology, irrigation, livestock, and livestock waste – nutrient management.

### Agency Mission Statement

The Carrington Research Extension Center conducts research that will lead to the enhancement of agriculture and improve the quality of life across the central region of North Dakota. Specifically, the Carrington Center conducts research on both dryland and irrigated crop production methods and systems, improved crop cultivars, feeding of beef cattle, cow/calf nutrition, sustainable agricultural production, and produces foundation seedstocks. The objective is to discover the balance between farm enterprise profitability and conservation of the natural resource base. The results of these studies are disseminated to the entire state through an on-going extension educational program.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.



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## Agency Future Critical Issues

- A secure (owned or long-term leases) land base is critical to sustain the current and future research mission of the Carrington Center. The diverse and broad based programs of the CREC operate on a relatively small land base. The Carrington REC operates on a land base of around 1,940 acres with the state owning around 840 acres. The 1,100 acres not secured by state ownership must be sourced by annual rental agreements with multiple landlords. This heavy reliance upon a willing group of land owners to annually rent a significant portion of the minimum amount of acres the CREC requires is risky at best. If any one parcel of rented land was not made available in a given year, the CREC would be forced to greatly reduce or eliminate program contributions that are depended upon by North Dakota producers and are basic to our department mission.
- The beef research unit needs a multi-use 'feedlot research support facility'. This facility would expand the scope of research capabilities, assist in sustaining Institutional Animal Care and Use Committee (IAUAC) compliance, address worker protection challenges, and reduce maintenance costs for equipment. An associated need for this program is an additional set of feedlot pens that would include a subset placed within a hoop structure. Current pens are fully utilized and feedlot research projects are often backlogged. An additional set of pens would allow the CREC to conduct at least one additional experiment per feedout period. Alternatively, these pens would allow more treatments or replications within other studies, thereby expanding research capacity and quality. Any feedlot pen expansion must include associated waste containment facilities to remain compliant with regulations.
- It is important that grant fund opportunities continue to be widely available in future years. Funds that support crop and livestock production or agricultural related issues in general are needed to leverage public funding. The CREC research programs must continue to have a diversity of opportunities to compete for grant funds that, when successful, allow us to most effectively empower current research programs.
- The programs of the CREC are supported by a diversity of facilities that include not only the primary buildings like headquarters and laboratories but also feedlot pens, feed and seed storage, animal shelters, water supply features, storage buildings, parking lots, roadways and waste containment. Current support for maintenance of these facilities is fully inadequate to address the current deferred maintenance costs.
- Equipment storage capacity at the CREC is critically limited resulting in a number of high value pieces of equipment needing to be stored outside year round exposed to the elements. This exposure has resulted in repair costs that would not have been experienced if the equipment was stored indoors, and faster depreciation especially on the higher-value equipment.

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## Carrington Research Extension Center

# 2017-2019 IMPACTS

- Expanded research on using winter rye as a cover crop for subsequent planting of soybean and dry bean to reduce erosion, suppress weeds and mitigate salinity effects while maintaining crop performance
- Established a precision agriculture research concept of testing crop input combinations across a landscape with variable soil characteristics to improve crop quality and yield across a whole field while increasing efficiency of input utilization
- Produced, conditioned and delivered foundation grade seed from an average of 33 varieties and 11 different crops the past two seasons through the CREC foundation seedstocks program. The seed increases represent contributions toward the introduction of new genetics and maintenance of pure seed for varieties in demand.
- Improved control of the disease Sclerotinia in soybeans significantly by optimizing fungicide deposition to the lower canopy through appropriate nozzle selection with boom-mounted nozzles and the use of a newly designed drop nozzle
- Completed a study to evaluate the safety of spring wheat herbicides on subsequent cover crop plantings. Many popular cover crop species are sensitive to herbicides frequently used in wheat. The research led to the development of a cover crop injury risk table included in the “2018 North Dakota Weed Control Guide.”
- Developed a new winter rye variety, ND Dylan, which was released by the NDSU Agriculture Experiment Station. The variety has higher seed than winter rye varieties commonly grown in the region.
- Demonstrated through initial field studies that the planting date, but not residue cover, may be a significant determinant of the severity of Fusarium and Aphanomyces root rots of field pea. An early planting date was critical for strong field pea performance in fields with root rot pressure.



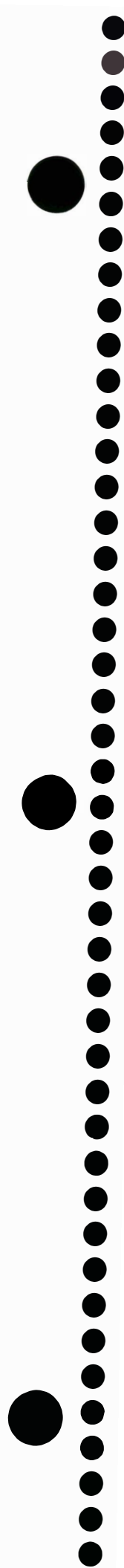
*The CREC foundation seedstocks program contributes toward the introduction of new genetics and maintenance of pure seed for varieties in demand.*

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## Agency Overview

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# Central Grasslands Research Extension Center - Streeter

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Central Grasslands Research Extension Center (CGREC) conducts research for the Coteau region of North Dakota, an area bounded by the Missouri River on the west and the James River on the east and extends from Divide and Burke counties in northwestern North Dakota in a southeasterly direction through Dickey County.

Research objectives must increase the range-carrying capacity of native range emphasizing conservation and preservation, stabilize grass production to compensate for the vagaries of the weather and precipitation as it influences forage production in the dryland agriculture, identify the impact of different management systems upon beef production in the central region and explore the increased use of crop residues and byproducts for the maintenance of the cow herd. CGREC's primary focus is management of grassland acreage which occupies about one-third of the agricultural land in the state and aims to improve production and increase returns to cattle producers.

### Agency Mission Statement

The legislated mission of the CGREC is as follows: The CGREC shall conduct research designed to fulfill needs within an area bounded by the Missouri River on the west and the James River on the east with research objectives as follows:

1. To increase the range-carrying capacity of native range with emphasis on conservation.
2. Stabilization of grass production to determine how to best compensate for the variability of the weather as it influences forage production.
3. Identification of different management systems on beef production in the central region of the state.
4. Exploration of increased use of crop residues and by-products for the maintenance of the cow herd.
5. To disseminate research results and information for the benefit of the state of North Dakota.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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### Agency Future Critical Issues

- Livestock facilities continue to be deficient and impede potential research. Improvements to livestock handling and feeding facilities including replicated dry-lot pens, feed storage, and a new working barn are needed to allow for growth of the animal science research program with animals that come off the range and forage research projects.
- Significant improvements or replacement of the director's residence is needed as the current residence has water, possible mold, and foundational issues in the basement.
- Deferred maintenance and other repairs that affect both safety and use of facilities continue to be a critical issue.

## Central Grasslands Research Extension Center - Streeter

### 2017-2019 IMPACTS

- Initiated a large landscape-level research project addressing invasive cool-season grass species and improving plant diversity using two different prescribed patch-burn grazing (spring only and spring plus summer) strategies and a modified twice-over/rest-rotation grazing strategy
- Expanded winter grazing research to include grazing of corn residues, cover crops and bale grazing projects
- Studied through a precision agriculture project the impacts of supplementing enhanced mineral feeds to grazing developing heifers on pasture using radio frequency identification technology
- Continued to expand on collaborative research efforts evaluating the impacts of management on reproductive performance of beef cows and bulls
- Expanded and initiated alfalfa trials to assess varieties and explore enhancing a multi-harvested haying system to improve forage production and retain grass in the mixture
- Assessed different cover crop mixtures for forage production and quality while improving soil health
- Created on-farm demonstrations with NDSU Extension agents and specialists, finalized the bale grazing demonstration project and started a project with ranchers in the Coteau region
- Developed regional Extension programs for farmers and ranchers, and in-service training for Extension agents and specialists, and the U.S. Department of Agriculture-Natural Resources Conservation Service

*Research at Central Grasslands included using patch-burn grazing strategies to improve plant diversity and address invasive cool-season grass species.*

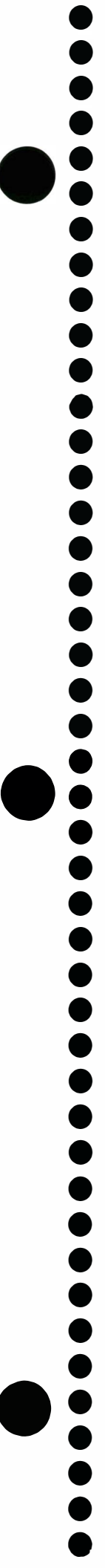


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## Agency Overview

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# Dickinson Research Extension Center

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Dickinson Research Extension Center (DREC) has an established record of service to the people in the 13-county region south and west of the Missouri River. The DREC operates 6,506 acres of owned land within the region as well as annual land leases needed to accommodate ongoing projects. The land base provides opportunities for a broad perspective in evaluating various agricultural systems that can serve as engines for economic development. This is a continuation of what has taken place for over 100 years. Currently, the DREC assists agricultural producers in solving production problems with agronomy, animal science and range science, while integrating new developments. Five major areas are served: agronomy, beef management, bio-security, range management, and sustainable agricultural practices. Faculty and staff are committed to engaging people of the region and to the identification of current economic opportunities, while sustaining natural resources for future generations as directed by the mission statement and Advisory Board. Research data and producer ideas are continually considered so the DREC can leverage the latest knowledge to best benefit the people of North Dakota.

### Agency Mission Statement

The Dickinson Research Center must be located at or near Dickinson in Stark County. The Center shall conduct research on increasing the carrying capacity of native rangeland, with emphasis on conservation and preservation for future generations. The Center shall conduct research on grass production to determine how to best compensate for the vagaries of the weather as it influences forage production in the dry land agriculture of western North Dakota. The Center shall conduct research at the ranch location in Dunn County with beef cattle breeding, feeding, management and disease control for the benefit of livestock producers of western North Dakota and the entire state. The Center shall conduct research designed to increase productivity of all agricultural products of the soil by maintaining or improving the soil resource base in the dry land agricultural region of southwestern North Dakota by the identification of adapted crop species and superior crop cultivars; propagation and distribution of selected seed stock; and development of profitable cropping systems that achieve the necessary balance between profitability and conservation of all natural resources. The Center shall disseminate research results and information for the benefit of this state.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.



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## Agency Future Critical Issues

- Continue soil-plant-livestock-air continuum research emphasizing soil health, agronomy, range management and livestock production. The current research focus and long research history provide a firm foundation to continue cutting edge research to match goals and objectives for work related to the agricultural biome. The integration of sustainable plant and beef systems requires more evaluation. In the future, more avenues for additional compensation need to be explored, to enhance the economic viability for beef producers and the rural areas associated with beef production. This compensation may come from not only beef but synergistic crop production.
- The Dickinson Research Extension Center, as part of North Dakota State University, takes serious the need for sustainable beef, beef and grass systems. Currently, the Center is striving to develop sustainable and integrated production strategies that match conditions of western North Dakota and surrounding regions. The inclusion of forages into traditional cropping systems can provide the resources necessary for the development of integrated production strategies that increase sustainability and profitability.
- There is a need to develop agro-ecosystems that optimize the balance between forage-based and grain-based crop/livestock systems reflective of the many individual ecosystems. These integrated systems must be synergistic to, or enhance the native and agronomic plant communities, thus providing the base for future beef production. In addition, enhanced value for commodities produced from forage-based systems is key.
- Deferred Maintenance Increase - The DREC has maintenance issues with the main public use and cattle working facility at the ranch. The facility needs major roof repair and 1,800 square feet of additional cattle working space. arena at the DREC ranch headquarters southwest of Manning to improve our cattle working facility and create a more effective and safe handling facility for cattle and labor. This arena is our multi-purpose building, used as an educational area for conferences and public meetings. As previously requested, a new building for large equipment storage, chemical and hazardous material storage, and repairs.
- Programmatic Needs - Maintain adequate operating funds. Fund a research specialist to allow us to continue our efforts in the integration of livestock, range science, cover crops and cropping systems. Fund a research specialist with a master's level education to facilitate research and data collection. The Center needs annual support for a multitude of research projects, which require a broad understanding of various research techniques and data analysis related to the agricultural biome.

## Dickinson Research Extension Center

### 2017-2019 IMPACTS

- The DREC faculty and staff are active in finding answers that will identify positive economic advantages for producers and successfully preserve our natural resources. Major areas of research involvement are: soil health research and education to show how soil health is improved by the microbial action of microorganisms, which can reduce input costs and increase productivity, and the continued exploration of symbiotic relationships among livestock, range science, cover crops and cropping systems to advance revenue streams and the quality of place for North Dakotans. For all of our impacts, see our website: [www.ag.ndsu.edu/DickinsonREC](http://www.ag.ndsu.edu/DickinsonREC).
- Soil is a biological system that depends on the recycling of nutrients to sustain microbial action beneath the surface and provide nutrients for above-ground production. The balance between the ground surface and below-ground interaction is essential for soil to function properly, allowing water infiltration, nutrient cycling and erosion reduction. Research and educational efforts explore new forage and cattle resources and inputs that shift from a grain-based beef production model to a grass-based beef production model based on the principals of soil biology.
- Grass cultivars, soil mineral nitrogen, prairie ecosystems, grassland restoration and integrated grazing systems were evaluated. The diverse rotational cropping systems results showed improved and increased per-acre return on seeded annual crops. Beef gain per acre grazing annual crops exceeded 2 pounds per day, and results on the 34-year old twice-over rangeland study show improved forage production per acre and greater plant nitrogen availability. These directly translate into improved revenue and decreased costs.
- Reduced soil disturbance, increased plant diversity, added animal diversity, maintained living roots to feed soil organisms and successfully covered soil with plants and plant residues all resulted in improvement in the sustainability of agronomic systems, cropping systems, pest control and the integration of beef cattle.

*Research at the Dickinson REC explores new forage and cattle resources and inputs that shift from a grain-based beef production model to a grass-based beef production model based on the principals of soil biology.*

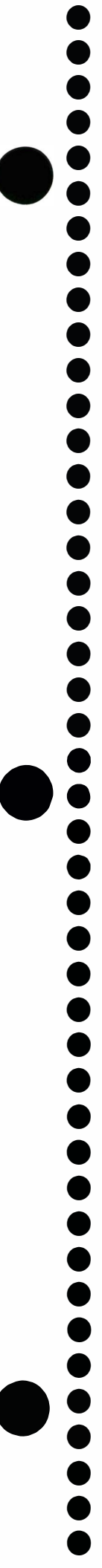


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## Agency Overview

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# Hettinger Research Extension Center

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Hettinger Research Extension Center (HREC) is a semi-arid site located in southwest North Dakota, providing the most southerly NDSU location in the non-glaciated portion of North Dakota as a site for its agronomy research program. The HREC also is located at the center of the North Dakota sheep industry, the focus of one of its animal research programs, and in an area of rapidly growing livestock feeding ventures, another focus of animal research at the HREC. Additionally, the HREC is located in a region where much of the land base is in the Conservation Reserve Program, which has resulted in additional research evaluating potential changes in the CRP program and how these changes may affect upland native and game bird populations. A new research program evaluating low-cost rangeland monitoring strategies on U.S. Forest Service lands and wildlife/livestock interactions has resulted in a significant increase in the quantity of rangeland research conducted at the HREC throughout the western Dakotas. Research at HREC involves the disciplines of animal science, range science, wildlife science, agronomy, and agri-business and applied economics. Collaboration is with Main Station scientists, Branch Station scientists, U.S. Forest Service, grazing associations, university scientists from WY, SD, and MT, and USDA research entities in these research disciplines to improve productivity of livestock, grazing, and cropping systems, and to improve economic development of the region.

### Agency Mission Statement

The Hettinger Research Extension Center, an outreach of North Dakota State University, provides applied research and education in agriculture and environmental sciences that will enrich the lives of North Dakotans and support economic development.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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## Agency Future Critical Issues

- Technical support for the livestock research program is needed to provide all research programs with a full time technician. This position is needed to meet the research needs of producers in SW North Dakota.
- A modern livestock processing and research support facility is needed to conduct the research by our sheep and cattle research programs. The current facility is a 16' x 32' lean-to, with no ability to utilize today's modern technology, such as web access, in our research program.
- A Sheep Feed Efficiency Research Facility for the evaluation of feed efficiency is needed for the sheep producers of ND to remain competitive. The ND Lamb and Wool Producers Association continues to support such a facility at the Hettinger REC.
- Housing of the graduate students and technicians needed for a nationally competitive program continues to be a struggle in western ND. Permanent housing, in a bunkhouse format, is needed to ensure the HREC program can continue to recruit these valuable members of our team on an annual basis.
- Deferred maintenance and safety issues are over \$1,000,000. Specifically, due to a past wet cycles and heavier than normal traffic, the road to the office is unstable and needs to be replaced. The most recent inspection by the Fire Marshall indicated that the 1970's era bunkhouse needs to be renovated to maintain its use as a housing facility, due to fire and safety concerns. Additional needs include mechanical system renovation of the 1992 office, and parking lot re-paving.

## Hettinger Research Extension Center

### 2017-2019 IMPACTS

- Evaluated new varieties (16) and technologies to grow drought-tolerant crops and new and emerging biofuels
- Conducted weed science research evaluating new herbicides for weed control and crop safety for crops grown in southwestern North Dakota
- Evaluated the effects of patch burning in post-Conservation Reserve Program lands on livestock, vegetation, pollinators and wildlife in western North Dakota
- Developed a multidisciplinary research project evaluating an integrated crop-livestock system using annual forages, winter wheat and sheep
- Conducted a nationally recognized sheep research program evaluating alternative technologies for increasing reproductive efficiency in males and females and feedlot nutrition
- Developed a nationwide training program for the National Sheep Industry Improvement program that trained and certified carcass ultrasound technicians for the U.S. sheep industry
- Certified 44 Extension agents in the Nitrate QuikTest Certification Program for annual forages so they could assist in the statewide drought response for NDSU Extension
- Trained five M.S. and Ph.D. students in the fields of Natural Resource Management and Animal Science



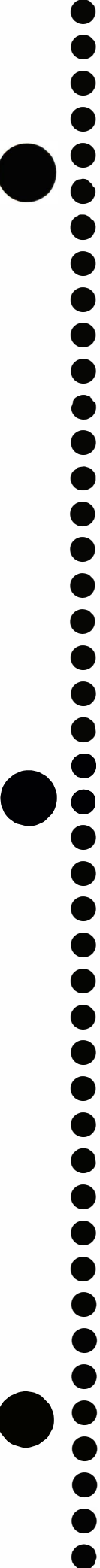
*The Hettinger REC developed a nationwide training program for the National Sheep Industry Improvement program that trained and certified carcass ultrasound technicians for the U.S. sheep industry.*

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## Agency Overview

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# Langdon Research Extension Center

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Langdon Research Extension Center (LREC) is located one mile east of Langdon on US highway five. The agricultural land base at the station consists of 549 owned acres and an additional 206 acres under lease agreement. The LREC serves a nine-county region located in northeast North Dakota and has North Dakota's highest precipitation rates, coolest temperatures, and richest productive soils. The climate supports diverse crop production and recurring disease problems.

The LREC has a strong tradition of assisting the region's producers to meet agricultural production challenges throughout the course of its existence since 1909. In 1993, the LREC redirected much of its research programming to focus on the significant increase of disease and insect pressure associated with its climate. This redirected applied research programming has provided producers with information regarding disease minimizing cultural farming practices and trusted information regarding chemical applications and other inputs that minimize disease and insect pressures that give growers the best return on investment.

Recently, the LREC has significantly enhanced its overall agricultural research programming with an increase in the foundation seed stocks program, the addition of a crop protection scientist, farm business management instructor, Extension specialist in agronomy and an Extension specialist in soil health. New infrastructure additions in the past 12 years include a full service agricultural based learning center/headquarters building constructed in 2004, agronomy/pathology laboratory in 2015 and a 25 acre field tiling project completed in 2014. The NDSU LREC with its recent personnel and infrastructure additions and improvements will insure that growers can depend on research data that will improve their bottom line for the next 100 years.

### Agency Mission Statement

The Langdon Research Extension Center will conduct applied agricultural research that enhances the quality of life for the regions citizens with a responsive, flexible and accessible overall agricultural based research program. This programming will combine the concepts of agricultural research, information technology and community/economic development while conserving the regions natural resources.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.



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### Agency Future Critical Issues

- The number one issue currently for the NDSU Langdon Research Extension Center is to maintain a level budget through the 2019-21 biennium based on the 2017-19 budget. This is essential to support the research and extension programming at its current level. Further budget cuts would require eliminating FTE(s) which would scale back research and extension efforts demanded by the public.
- All research and extension programming are supported by all facilities at the Langdon REC. Most are becoming outdated and unsafe. Acquiring additional funds for extraordinary repairs will help to shore up these facilities to support the level of research and extension programming currently supported at Langdon.
- With appropriated funds becoming less and less, the LREC has become more dependent on research grant opportunities. Supporting an atmosphere that readily accepts private funding to leverage public funding will be essential to continue employing problem solving applied research for growers.

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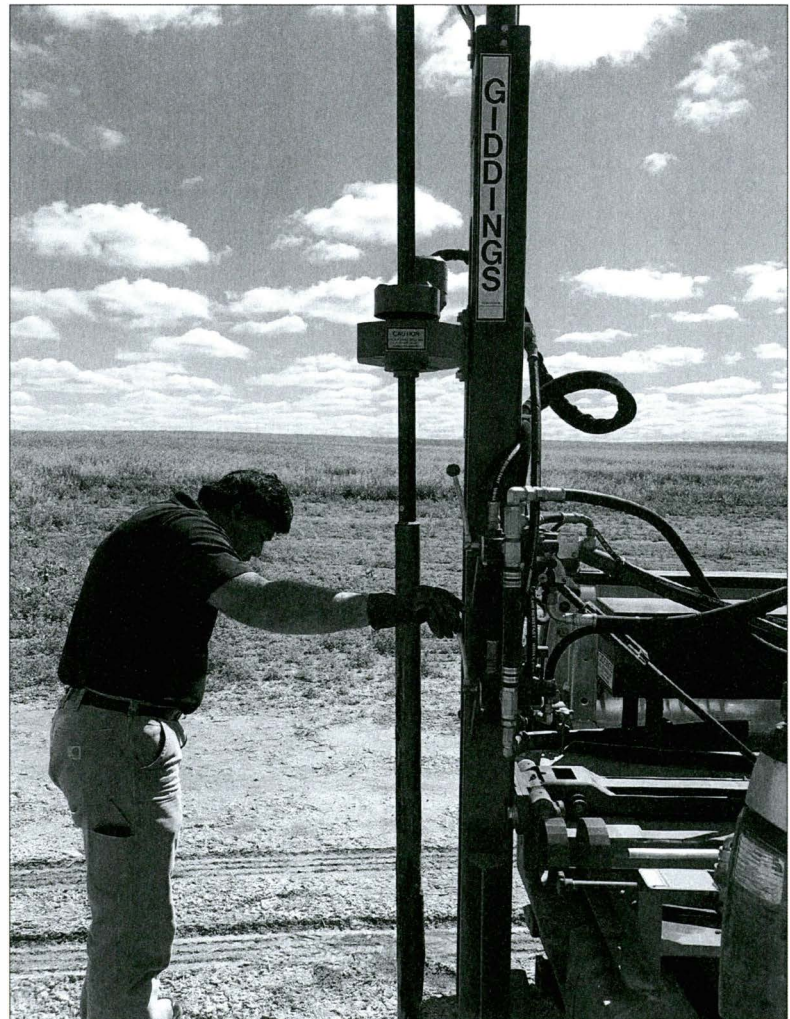
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## Langdon Research Extension Center

### 2017-2019 IMPACTS

- Continued to build strong research partnerships with agricultural input companies, commodity groups, regional crop improvement associations, growers and others
- Produced and distributed the highest quality foundation grade seed of the major crops grown in our region
- Provided dependable support for Main Station crop breeding programs and other cropping system research programs
- Continued to foster and strengthen two new Extension specialists' outreach programs in agronomy and soil health
- Applied research at Langdon in agronomy, pathology and soil health to provide growers with answers they need to become more profitable



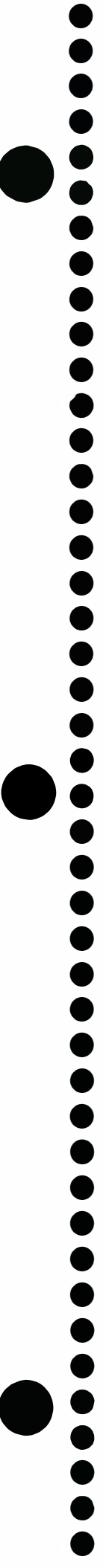
*Applied research at Langdon in soil health provides growers with answers they need to become more profitable.*

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## Agency Overview

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# North Central Research Extension Center - Minot

North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The North Central Research Extension Center (NCREC) was established in 1945 and is located one mile south of Minot on Highway 83. The 1,200-acre center specializes in crop research and extension education activities and foundation seed production. Approximately 1,500 owned, rented, and contracted acres are planted for foundation seed production each year. The NCREC evaluates conventional and new crops for production in the region and explores weed management and cropping systems to improve the economic potential of crop production in the north central region. The NCREC is a leader in North Dakota on production and disease research of canola, pea, lentil, and chickpea crops, in addition to the conventional crops of hard red spring and durum wheat, barley, flax, sunflower, and oats. The NCREC works closely with business and economic development leaders in the region to improve the economic vitality of north central North Dakota.

### Agency Mission Statement

The North Central Research Extension Center conducts research to increase agricultural productivity in north central North Dakota. The center serves agricultural producers in a 12-county region surrounding Minot through crop research, foundation seed production and dissemination, and extension education programs in crop and livestock production. Studies at the center focus on crop variety and new germplasm evaluation, weed control, cropping systems, crop pest management, reduced tillage, and soil fertility. Research is conducted on cereal grains, oilseeds, legumes, forages, and new specialty crops.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

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### **Agency Future Critical Issues**

- Increased base funding to support research and extension efforts
- Additional technical support
- Increased operating funds
- Equipment replacement
- Drain tile NCREC yard
- Encroachment from city of Minot
- Sale and purchase of additional land for seed production

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## North Central Research Extension Center - Minot

### 2017-2019 IMPACTS

- Produced, conditioned and distributed foundation seed of nine crops grown in the region (24 unique varieties)
- Assisted in developing new varieties of economically important crops and evaluated production strategies for alternative crops
- Researched crop production products to improve efficiencies and maximize economic return for minor and major acreage crops grown in North Dakota
- Provided transformational Extension education in the areas of livestock, soil health, crop protection and cropping systems
- Conducted residue trials that led to registration of new pesticides



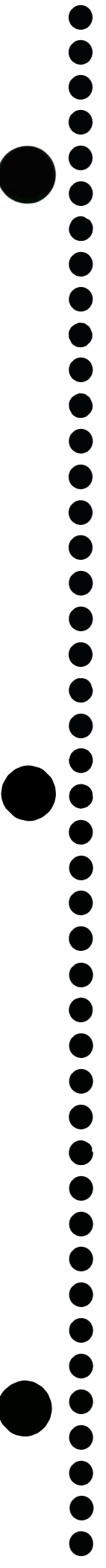
*The North Central REC assisted in developing new varieties of economically important crops and evaluated production strategies for alternative crops.*

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## Agency Overview

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# Williston Research Extension Center

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Williston Research Extension Center (WREC), established in 1907 and relocated to the present site in 1954, is an 800-acre rain-fed farm located in northwest North Dakota near the city of Williston. In 2001, an additional 160 acres were purchased in the Nesson Valley and an irrigated research and development project was established. WREC research studies are conducted on crop variety evaluation, herbicide performance and other cultural management research, cropping systems and soil and water conservation practices. The main dryland crops are spring wheat and durum. Barley, oats, safflower, pea, lentil, chickpea, canola, flax, alfalfa and other alternative crops are also grown as cash crops or for livestock feed.

WREC research is intended to increase the producer's net profit, support crop diversification and encourage more intensive cropping and irrigation development. Research on soil and crop management systems for sprinkler irrigation, on alternative irrigated high value and value-added crops and on western malting barley programs are conducted. WREC also conducts variety development research on safflower, winter wheat, and durum and variety evaluations in cooperation with NDSU Main Station scientists. WREC produces and supplies foundation seed to area farmers of new and old varieties adapted to the region.

### Agency Mission Statement

The Williston Research Extension Center conducts research to increase agricultural productivity in the semi-arid region for northwestern North Dakota while achieving a necessary balance between profitability and conservation of natural resources. Research on soil and crop management systems for sprinkler irrigation and alternative irrigated high-value/value-added crop production at the Nesson Valley site are conducted in cooperation with the Montana State University Eastern Agricultural Research Center at the USDA-ARS Northern Plains Agricultural Research Laboratory in Sidney, Montana and other cooperating NDSU and University of Minnesota scientists.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.



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## Agency Future Critical Issues

- Increasing operating costs and higher labor costs for research activities continue to impact WREC abilities to carry out our research programs vital to the improvement of the economic and environmental performance of our agricultural lands. A high priority need is the request to restore the WREC budget to the 100% funding level. Deferred maintenance funding continues to be an important need for WREC to maintain its facilities.
- The switch from a strict small grain-fallow rotation to a more intensive no-till diversified cropping system has resulted in northwest North Dakota farmers growing more than 20 different crops on over an additional million acres of previously fallowed land increasing the demand for pure seed of varieties of pulse crops and other fragile specialty seeds. The WREC seed conditioning plant built in 1954 is antiquated and was designed to only handle cereal crops and does not have the capability of cleaning peas, lentils, chickpeas, and other fragile seeds that are in high demand by our farmers. The outdated seed conditioning plant also poses considerable safety issues. A horizontal seed conditioning plant with optical color sorter and higher bushel per hour capacity is needed to allow WREC to condition Foundation seed of a wide array of new crop varieties to provide pure seed to growers.
- An additional equipment storage building is needed for WREC farm and plot research equipment to allow all WREC high cost farm and research equipment to be stored indoors from the elements.
- A greenhouse is needed for the new WREC Plant Pathology Program and the Horticulture Program to allow these programs to conduct plant disease and horticulture research during the winter months.
- Increased state operating costs due to state fleet rate/policy change.

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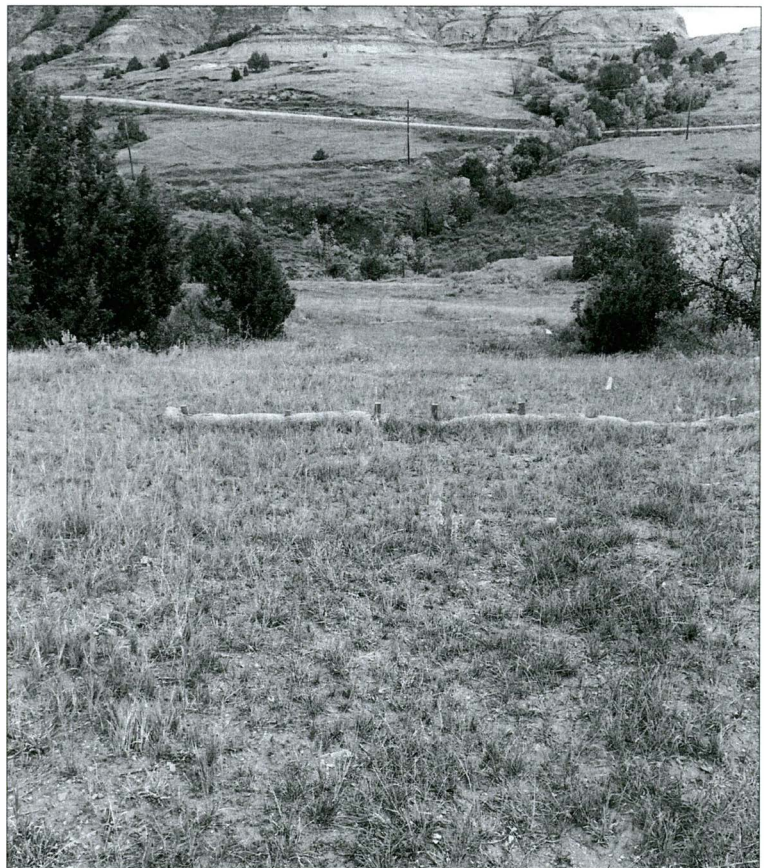
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## Williston Research Extension Center

### 2017-2019 IMPACTS

- Produced more than 45,000 bushels of foundation seed of 23 varieties of small grains and broadleaf crops
- Developed and utilized a 160-acre irrigated site to identify improved irrigated cropping and tillage systems, water use efficiency and soil health
- Established and continued a pipeline reclamation research project
- Established and continued a high-tunnel research project with vegetable crops and cut flowers
- Established and continued a saline seep reclamation research and demonstration project in collaboration with the Montana Salinity Control Association
- Established and continued a multidisciplinary long-term dryland cropping systems project to develop diversified cropping systems recommendations
- Established and continued a plant pathology research program to investigate disease on peas, lentils, durum, barley and sugar beets; oversee crop scouts; and collaborate with other agencies to identify and treat diseases in crops
- Received funding from NDAES Precision Agriculture to establish the Drone-based High-throughput Phenotyping in Support of Cereal Grain project



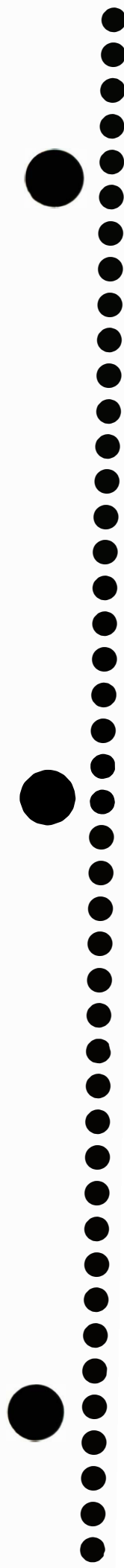
*Research continues on pipeline soil reclamation at Williston.*

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## Agency Overview

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# Agronomy Seed Farm

## North Dakota Agricultural Experiment Station

### Agency Statutory Authority

North Dakota Century Code Chapter 15-12.1

### Agency Description

The Agronomy Seed Farm (ASF) is a 590 acre farm located near Casselton, which has been a part of the North Dakota Agriculture Experiment Station (NDAES) since it was gifted to the state in 1950. It was the result of a fund drive conducted by the North Dakota Crop Improvement Association, which solicited farmers, seed companies and many others throughout the state to help establish a farm whose main purpose is to increase seed of new varieties as they are developed by the plant breeding and supporting departments of the NDAES. The ASF also propagates seed of older but still desirable varieties for the seedsmen of the area.

### Agency Mission Statement

To produce an adequate supply of foundation-grade seed for the seedsmen of the state and area at a reasonable price and to support the varietal development research of the NDAES.

### Agency Performance Measures

Per North Dakota Century Code 15-12.1-17 the State Board of Agricultural Research and Extension (SBARE) presents a status report to the budget section of the legislative council. SBARE's most recent presentation to the budget section was on July 11, 2018. The report they gave and provided in written form included the status of the North Dakota Agricultural Experiment Station and NDSU Extension. A copy of the information is on file in the legislative council office.

### Agency Future Critical Issues

- The critical issues facing the ASF are a continued demand for foundation-grade seed, favorable weather for growing seed and a good supply of varieties that are in demand by the seed industry. If these three conditions are present and good commodity prices accompany them, the future of the ASF is secure.

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## Agronomy Seed Farm

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# 2017-2019 IMPACTS

- Produced 35,000 to 50,000 bushels of seed for availability to the seed industry annually
- Conditioned 35,000 to 50,000 bushels of seed for availability to the seed industry annually



*The Agronomy Seed Farm's main purpose is to increase seed of new varieties as they are developed by the plant breeding and supporting departments of the NDAES.*

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# NDSU Extension Program Initiatives

Final Ranking by SBARE - May 3, 2018

# NDSU

EXTENSION

ONE-TIME FUNDING REQUEST

## Extension Web and Digital Delivery

**JUSTIFICATION:** SBARE's review of Extension recommended that Extension optimize the use of technology and target younger age demographics to enhance the effectiveness and efficiency of delivery methods. To accomplish this goal, Extension needs a new web strategy and reimagining of content options to meet future opportunities and ever-changing user needs.

Reimagining the Extension web presence is a significant undertaking because of the complexities of the diversity of materials, the diversity of who generates and manages content, how Extension users access the content (for example, computer, smartphone), and how users interact with the apps and information.



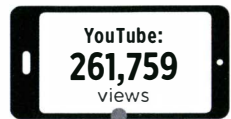
NDSU Extension's current web presence has evolved into a decentralized system that allows specialists, and Research Extension Center (REC) and county staff to post directly to their websites with a focus on localized content. This approach has relied on staff expertise because Extension lacked sufficient web

specialists to manage all of the content contained on 123 topic, 13 REC and 52 county sites. Web delivery is a critical component of Extension's educational delivery system; NDSU Extension websites had 953,897 users and 3,546,916 page views in 2017.

NDSU Extension's web presence serves as an important platform to support a diverse array of electronic media. Extension has about 645 publications available online, of which about 300 are available only on the web. Online publication access is popular; 59,482 users made 307,912 page views in 2017. Nearly all publications are available in html format for easy smartphone and tablet use, along with a PDF option for high-quality printing.

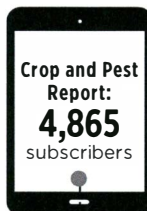


Extension has 722 YouTube videos on 11 channels, and the videos had 261,759 views in 2017. Extension also posts podcasts covering crop and livestock issues. These podcasts



are available as feeds via iTunes, Google, Yahoo or NDSU, and are used by radio stations and directly by producers.

Extension uses multiple platforms for online meetings, webinars and trainings, such as the interactive video network, Blackboard Collaborate, Moodle and Skype for the public and staff. Blackboard Collaborate is used more for training the public, and counties often provide local viewing sites with additional in-person training.



Several traditional newsletters have transitioned to electronic distribution and posting. For example, the Crop and Pest Report is emailed as a PDF to a listserv (4,865 subscribers) and articles are cross-posted on the web (215,133 page views in 2017). Other newsletters are distributed by Mailchimp as an e-newsletter.

Finally, Extension has a strong social media effort, with 81 NDSU Extension-related Facebook pages and numerous NDSU Extension Twitter accounts.



A new web strategy and reimagining of content will allow Extension to:

- Optimize content for smartphones and tablets, and emerging technologies such as voice-assisted search and augmented reality, especially to reach younger audiences
- Optimize navigation and search features
- Add more social media use
- Incorporate more apps
- Feature more interactive educational modules

Extension needs this enhanced web presence to augment transformational education, which is the foundation of Extension's mission.

**NEED:** This one-time funding request will add temporary support to overhaul and reimagine NDSU Extension's online presence.

**One-time operating support - \$345,000**

### Reimagining:

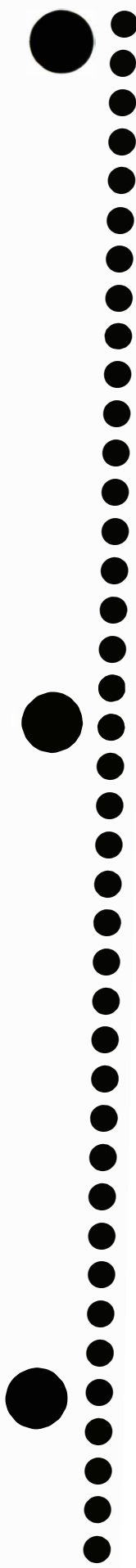
Transforming complex sources and content to simple access and media

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# SBARE Priorities for the North Dakota Agricultural Experiment Station

May 3, 2018

**NDSU** NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

## Capital Improvement Requests

### Agronomic, Pathology, and Soils Field Lab Facility

(Waldron Hall replacement) – Waldron Hall was built in the mid-1950's to house the field laboratories for the wheat breeding programs in the Department of Agronomy. An addition was built in the mid-1960's to house approximately another 16 scientists from the Departments of Agronomy and Plant Pathology. The building now houses field labs and wet labs for nearly 60 scientists, each with numerous projects, at the Main Station involving a number of disciplines. Many of these labs are shared and the seed drying, cleaning, and storage facilities needed by our scientists are now grossly insufficient and a health hazard to anyone working in the facility. A new facility is needed to provide our scientists a safe environment to conduct their research, as well as processing, cleaning, and storing seed.

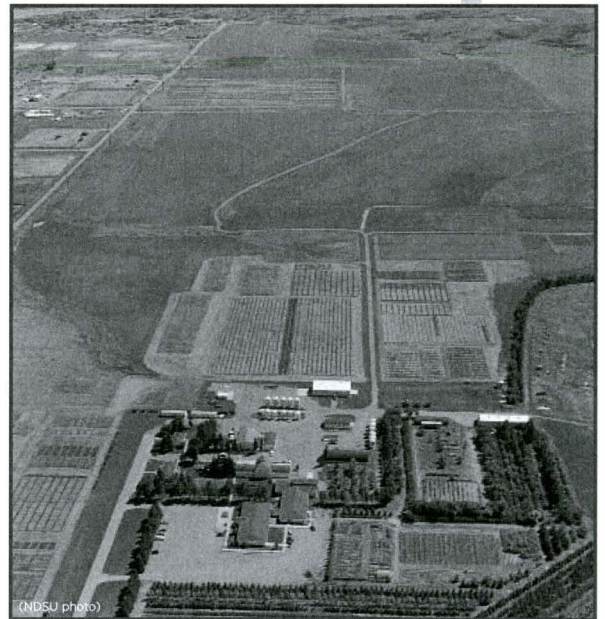
**REQUEST:** \$65,000,000 (approximately)



### Seed Cleaning Facility WREC

Seed cleaning facilities at WREC need to be replaced. Current facilities are antiquated, lack reliable capability to ensure high quality seed, are slow, and inefficient. Current facilities were designed to handle cereal crops and have limited/no capability of cleaning pulse crops and other fragile seed that are in high demand. These facilities pose considerable worker safety issues. A fundraising effort is underway.

**REQUEST:** \$750,000



### Equipment Storage Sheds

Purchasing and/or leasing expensive field equipment is an investment that the AES needs to protect. Storing expensive research plot equipment outdoors, such as tractors, seeders, and combines, reduces the life of the machines and can compromise the sophisticated electronics typically used on equipment.

**REQUEST:** 8 (\$300,000/shed)

### Precision Ag/ABEN Facility

A field lab with large indoor space and accessibility to perform research, demonstration and field testing of ag equipment and technology. Additional infrastructure would include a 100-ft long soil bin to test soil-tool interaction of tillage equipment and a high speed wind tunnel to test nozzles for spray drift and droplet size distribution of active ingredients under various weather conditions. The facility would be critical in conducting research and training on agricultural technologies such as unmanned aerial surveillance, variable rate application systems, precision planting, and other technology used in crop and livestock systems.

**REQUEST:** \$6,000,000

**REQUEST:**

One-time deferred maintenance \$1,440,465

NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.

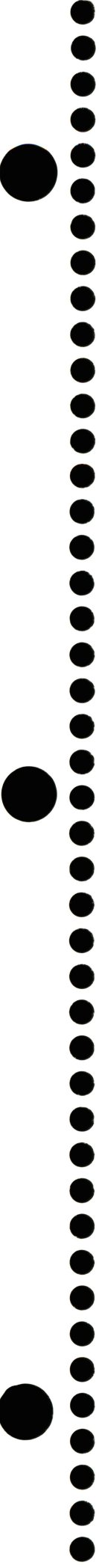


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19.0208.01000

Sixty-sixth  
Legislative Assembly  
of North Dakota

**HOUSE BILL NO. 1020**

Introduced by

Appropriations Committee

1 A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota  
2 state university extension service, northern crops institute, upper great plains transportation  
3 institute, main research center, branch research centers, and agronomy seed farm.

4 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

5 **SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds  
6 as may be necessary, are appropriated out of any moneys in the general fund in the state  
7 treasury, not otherwise appropriated, and from special funds derived from federal funds and  
8 other income, to the North Dakota state university extension service, the northern crops  
9 institute, the upper great plains transportation institute, the main research center, branch  
10 research centers, and agronomy seed farm, for the purpose of defraying the expenses of the  
11 North Dakota state university extension service, the northern crops institute, the upper great  
12 plains transportation institute, the main research center, branch research centers, and  
13 agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as  
14 follows:

15 Subdivision 1.

16 NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE

		Governor's	
	<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
18 Extension service	\$51,188,489	\$53,124,252	\$51,188,489
20 Soil conservation committee	<u>1,091,520</u>	<u>1,091,520</u>	<u>1,091,520</u>
21 Total all funds	\$52,280,009	\$54,215,772	\$52,280,009
22 Less estimated income	<u>26,646,689</u>	<u>27,886,984</u>	<u>26,646,689</u>
23 Total general fund	\$25,633,320	\$26,328,788	\$25,633,320
24 Full-time equivalent positions	252.98	242.51	252.98

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1 Subdivision 2.

2 NORTHERN CROPS INSTITUTE

3 Governor's

4		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
5	Northern crops institute	\$3,642,721	\$3,803,620	\$3,642,721
6	Total all funds	\$3,642,721	\$3,803,620	\$3,642,721
7	Less estimated income	<u>1,755,830</u>	<u>1,897,853</u>	<u>1,755,830</u>
8	Total general fund	\$1,886,891	\$1,905,767	\$1,886,891
9	Full-time equivalent positions	11.80	12.80	11.80

10 Subdivision 3.

11 UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

12 Governor's

13		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
14	Upper great plains transportation	\$22,060,242	\$22,421,422	\$22,060,242
15	institute			
16	Total all funds	\$22,060,242	\$22,421,422	\$22,060,242
17	Less estimated income	<u>18,617,068</u>	<u>18,957,222</u>	<u>18,617,068</u>
18	Total general fund	\$3,443,174	\$3,464,200	\$3,443,174
19	Full-time equivalent positions	43.88	43.88	43.88

20 Subdivision 4.

21 MAIN RESEARCH CENTER

22 Governor's

23		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
24	Main research center	\$108,642,243	\$107,032,049	\$108,642,243
25	Total all funds	\$108,642,243	\$107,032,049	\$108,642,243
26	Less estimated income	<u>59,084,828</u>	<u>58,053,640</u>	<u>59,084,828</u>
27	Total general fund	\$49,557,415	\$48,978,409	\$49,557,415
28	Full-time equivalent positions	336.12	340.05	336.12

29 Subdivision 5.

30 BRANCH RESEARCH CENTERS

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		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
1				
2				
3	Dickinson research center	\$6,825,551	\$6,707,017	\$6,825,551
4	Central grasslands research center	3,423,624	3,389,685	3,423,624
5	Hettinger research center	4,975,133	4,984,698	4,975,133
6	Langdon research center	2,964,607	2,968,417	2,964,607
7	North central research center	4,953,652	4,989,503	4,953,652
8	Williston research center	5,118,890	5,117,619	5,118,890
9	Carrington research center	<u>9,175,491</u>	<u>9,445,861</u>	<u>9,175,491</u>
10	Total all funds	\$37,436,948	\$37,602,800	\$37,436,948
11	Less estimated income	<u>20,281,691</u>	<u>20,807,242</u>	<u>20,281,691</u>
12	Total general fund	\$17,155,257	\$16,795,558	\$17,155,257
13	Full-time equivalent positions	110.29	109.81	110.29

14 Subdivision 6.

AGRONOMY SEED FARM

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
15				
16				
17				
18	Agronomy seed farm	<u>\$1,536,129</u>	<u>\$1,571,648</u>	<u>\$1,536,129</u>
19	Total special funds	\$1,536,129	\$1,571,648	\$1,536,129
20	Full-time equivalent positions	3.00	3.00	3.00

21 Subdivision 7.

BILL TOTAL

		Governor's		
		<u>Base Level</u>	<u>Recommendation</u>	<u>Appropriation</u>
22				
23				
24				
25	Grand total general fund	\$97,676,057	\$97,472,722	\$97,676,057
26	Grand total other funds	<u>127,922,235</u>	<u>129,174,589</u>	<u>127,922,235</u>
27	Grand total all funds	\$225,598,292	\$226,647,311	\$225,598,292

29 **SECTION 2. ONE-TIME FUNDING.** The following amounts reflect the one-time funding  
30 items approved by the sixty-fifth legislative assembly as adjusted for the 2017-19 biennium.

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	<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
1			
2	Seed cleaning plants	\$1,500,000	\$0
3	Junior master gardener program	15,000	0
4	Road and bridge asset management system	<u>300,000</u>	<u>0</u>
5	Total all funds	\$1,815,000	\$0
6	Total other funds	<u>1,700,000</u>	<u>0</u>
7	Total general fund	\$115,000	\$0

8       **SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount  
9 included in the grand total other funds appropriation line item in section 1 of this Act, any other  
10 income, including funds from federal acts, private grants, gifts, and donations, or from other  
11 sources received by the North Dakota state university extension service, the northern crops  
12 institute, the upper great plains transportation institute, the main research center, branch  
13 research centers, and agronomy seed farm, except as otherwise provided by law, is  
14 appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium  
15 beginning July 1, 2019, and ending June 30, 2021.

16       **SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
17 **INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues  
18 received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing  
19 operational expenses. Any revenues received in excess of \$755,000 may be spent only for  
20 one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

21       **SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
22 **INCOME - REPORT.** The Williston research extension center shall report to the sixty-seventh  
23 legislative assembly on amounts received and spent from mineral royalties, leases, or  
24 easements in the biennium beginning July 1, 2017, and ending June 30, 2019, and the  
25 biennium beginning July 1, 2019, and ending June 30, 2021.

26       **SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural  
27 research and education and appropriate branch research center directors, the director of the  
28 office of management and budget shall transfer appropriation authority within subdivisions 1, 2,  
29 4, and 5 of section 1 of this Act.

30       **SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The state board of  
31 higher education may adjust or increase full-time equivalent positions as needed for the entities

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1 in section 1 of this Act, subject to availability of funds. All full-time or part-time positions must be  
2 separate from North Dakota state university. Annually, the board shall report to the office of  
3 management and budget and to the budget section any adjustments made pursuant to this  
4 section.

5 **SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended  
6 general fund appropriation authority to and any excess income received by entities listed in  
7 section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any  
8 unexpended funds from these appropriations or revenues are available and may be expended  
9 by those entities, during the biennium beginning July 1, 2021, and ending June 30, 2023.

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**HOUSE BILL NO. 1020**  
**(Governor's Recommendation)**

Introduced by

Appropriations Committee

(At the request of the Governor)

A bill for an act to provide an appropriation for defraying the expenses of the extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm; to provide for a transfer; and to provide an exemption.

**BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

**SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds as may be necessary, are appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, and from special funds derived from federal funds and other income, to the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm for the purpose of defraying the expenses of the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as follows:

Subdivision 1.

**NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE**

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Extension Service	\$51,188,489	\$1,935,763	\$53,124,252
Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
Total all funds	\$52,280,009	\$1,935,763	\$54,215,772
Less estimated income	<u>26,646,689</u>	<u>1,240,295</u>	<u>27,886,984</u>
Total general fund	\$25,633,320	\$695,468	\$26,328,788
Full-time equivalent positions	242.51	0.00	242.51

Subdivision 2.

**NORTHERN CROPS INSTITUTE**

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Northern Crops Institute	\$3,642,721	\$160,899	\$3,803,620
Total all funds	\$3,642,721	\$160,899	\$3,803,620
Less estimated income	<u>1,755,830</u>	<u>142,023</u>	<u>1,897,853</u>
Total general fund	\$1,886,891	\$18,876	\$1,905,767
Full-time equivalent positions	12.80	0.00	12.80

Subdivision 3.

**UPPER GREAT PLAINS TRANSPORTATION INSTITUTE**

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Upper great plains transportation institute	\$22,618,201	(\$196,779)	\$22,421,422
Total all funds	\$22,618,201	(\$196,779)	\$22,421,422



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Less estimated income	<u>18,717,068</u>	<u>240.154</u>	<u>18,957,222</u>
Total general fund	\$3,901,133	(\$436,933)	\$3,464,200
Full-time equivalent positions	43.88	0.00	43.88

Subdivision 4.

MAIN RESEARCH CENTER

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Main Research Center	\$109,217,936	(\$2,185,887)	\$107,032,049
Total all funds	\$109,217,936	(\$2,185,887)	\$107,032,049
Less estimated income	<u>59,084,828</u>	<u>(1,031,188)</u>	<u>58,053,640</u>
Total general fund	\$50,133,108	(\$1,154,699)	\$48,978,409
Full-time equivalent positions	340.05	0.00	340.05

Subdivision 5.

RESEARCH CENTERS

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Dickinson Research Center	\$6,825,551	(\$118,534)	\$6,707,017
Central grasslands research center	3,423,624	(33,939)	3,389,685
Hettinger research center	4,975,133	9,565	4,984,698
Langdon research center	2,964,607	3,810	2,968,417
North central research center	4,953,652	35,851	4,989,503
Williston research center	5,118,890	(1,271)	5,117,619
Carrington research center	<u>9,175,491</u>	<u>270,370</u>	<u>9,445,861</u>
Total all funds	\$37,436,948	\$165,852	\$37,602,800
Less estimated income	<u>20,281,691</u>	<u>525,551</u>	<u>20,807,242</u>
Total general fund	\$17,155,257	(\$359,699)	\$16,795,558
Full-time equivalent positions	109.81	0.00	109.81

Subdivision 6.

AGRONOMY SEED FARM

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Agronomy Seed Farm	\$1,536,129	\$35,519	\$1,571,648
Total special funds	\$1,536,129	\$35,519	\$1,571,648
Full-time equivalent positions	3.00	0.00	3.00

Subdivision 7.

BILL TOTAL

	<u>Base Level</u>	<u>Adjustments or Enhancements</u>	<u>Appropriation</u>
Grand total general fund	\$98,709,709	(\$1,236,987)	\$97,472,722
Grand total other funds	<u>128,022,235</u>	<u>1,152,354</u>	<u>129,174,589</u>
Grand total all funds	\$226,731,944	(\$84,633)	\$226,647,311

**SECTION 2. ONE-TIME FUNDING - EFFECT ON BASE BUDGET - REPORT TO SIXTY- SEVENTH LEGISLATIVE ASSEMBLY.** The following amounts reflect the one-time funding items approved by the sixty-fifth legislative assembly for the 2017-19 biennium and the 2019-21 one-time funding items included in the appropriation in section 1 of this Act:

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<u>One-Time Funding Description</u>	<u>2017-19</u>	<u>2019-21</u>
Seed Cleaning Plants	\$1,500,000	\$0
Road and bridge asset management system	300,000	0
Junior master gardener program	15,000	0
Ext srvc web strategy & content re-imaging	0	345,000
Extraordinary repairs	<u>0</u>	<u>1,440,465</u>
Total all funds	\$1,815,000	\$1,785,465
Total other funds	<u>1,700,000</u>	<u>1,440,465</u>
Total general fund	\$115,000	\$345,000

The 2019-21 one-time funding amounts are not a part of the entity's base budget for the 2019-21 biennium. The extension service and main research center shall report to the appropriations committees of the sixty-seventh legislative assembly on the use of this one-time funding for the biennium beginning July 1, 2019 and ending June 30, 2021.

**SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount included in the grand total special funds appropriation line item in section 1 of this Act, any other income, including funds from federal acts, private grants, gifts, and donations, or from other sources received by the North Dakota state university extension service, the northern crops institute, the upper great plains transportation institute, the main research center, branch research centers, and agronomy seed farm, except as otherwise provided by law, is appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 4. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 5. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS INCOME.** The Williston research extension center shall report to the sixty-seventh legislative assembly on amounts received and spent from mineral royalties, leases, or easements in the biennium beginning July 1, 2017, and ending June 30, 2019 and the biennium beginning July 1, 2019, and ending June 30, 2021.

**SECTION 6. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural research and education and appropriate branch research center directors, the director of the main research center may transfer appropriation authority within subdivisions 1, 2, 4, and 5 of section 1 of this Act. Any amounts transferred must be reported to the director of the office of management and budget.

**SECTION 7. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The board of higher education may adjust or increase full-time equivalent positions as needed for the entities in section 1 of this Act, subject to availability of funds. The board shall report any adjustments to the office of management and budget pursuant to this section.

**SECTION 8. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended general fund appropriation authority to and any excess income received by entities listed in section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or revenues are available and may be expended by those entities, during the biennium beginning July 1, 2019, and ending June 30, 2021.

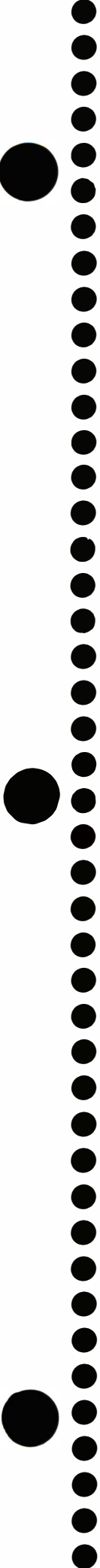
**SECTION 9. EXEMPTION.** The amounts appropriated for the veterinary diagnostic laboratory and the seed cleaning plants contained in subdivision 4 of section 1 of chapter 20 of the 2017 Sessions Laws, are not subject to the provisions of section 54-44.1-11, and any unexpended funds from these appropriations or related revenues are available and may be expended during the biennium beginning July 1, 2019, and ending June 30, 2021.

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FIRST ENGROSSMENT

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Sixty-sixth  
Legislative Assembly  
of North Dakota

ENGROSSED HOUSE BILL NO. 1020

Introduced by

Appropriations Committee

1 A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota  
2 state university extension service, northern crops institute, upper great plains transportation  
3 institute, main research center, branch research centers, and agronomy seed farm.

4 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

5 **SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds  
6 as may be necessary, are appropriated out of any moneys in the general fund in the state  
7 treasury, not otherwise appropriated, and from special funds derived from federal funds and  
8 other income, to the North Dakota state university extension service, the northern crops  
9 institute, the upper great plains transportation institute, the main research center, branch  
10 research centers, and agronomy seed farm, for the purpose of defraying the expenses of the  
11 North Dakota state university extension service, the northern crops institute, the upper great  
12 plains transportation institute, the main research center, branch research centers, and  
13 agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as  
14 follows:

15 Subdivision 1.

16 NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE

		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
18			
19	Extension service	\$51,188,489	\$2,167,185 \$53,355,674
20	Soil conservation committee	<u>1,091,520</u>	<u>0</u> <u>1,091,520</u>
21	Total all funds	\$52,280,009	\$2,167,185 \$54,447,194
22	Less estimated income	<u>26,646,689</u>	<u>982,267</u> <u>27,628,956</u>
23	Total general fund	\$25,633,320	\$1,184,918 \$26,818,238
24	Full-time equivalent positions	252.98	(10.47) 242.51

1 Subdivision 2.

2 NORTHERN CROPS INSTITUTE

3		Adjustments or		
4		<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
5	Northern crops institute	<u>\$3,642,721</u>	<u>\$186,426</u>	<u>\$3,829,147</u>
6	Total all funds	\$3,642,721	\$186,426	\$3,829,147
7	Less estimated income	<u>1,755,830</u>	<u>137,010</u>	<u>1,892,840</u>
8	Total general fund	\$1,886,891	\$49,416	\$1,936,307
9	Full-time equivalent positions	11.80	1.00	12.80

10 Subdivision 3.

11 UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

12		Adjustments or		
13		<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
14	Upper great plains transportation	<u>\$22,060,242</u>	<u>\$777,487</u>	<u>\$22,837,729</u>
15	institute			
16	Total all funds	\$22,060,242	\$777,487	\$22,837,729
17	Less estimated income	<u>18,617,068</u>	<u>257,255</u>	<u>18,874,323</u>
18	Total general fund	\$3,443,174	\$520,232	\$3,963,406
19	Full-time equivalent positions	43.88	0.00	43.88

20 Subdivision 4.

21 MAIN RESEARCH CENTER

22		Adjustments or		
23		<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
24	Main research center	<u>\$108,642,243</u>	<u>(\$775,377)</u>	<u>\$107,866,866</u>
25	Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
26	Less estimated income	<u>59,084,828</u>	<u>157,539</u>	<u>59,242,367</u>
27	Total general fund	\$49,557,415	(\$932,916)	\$48,624,499
28	Full-time equivalent positions	336.12	3.93	340.05

29 Subdivision 5.

30 BRANCH RESEARCH CENTERS

		Adjustments or		
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>	
1				
2				
3	Dickinson research center	\$6,825,551	(\$152,469)	\$6,673,082
4	Central grasslands research center	3,423,624	(56,881)	3,366,743
5	Hettinger research center	4,975,133	(22,900)	4,952,233
6	Langdon research center	2,964,607	(16,696)	2,947,911
7	North central research center	4,953,652	314	4,953,966
8	Williston research center	5,118,890	(50,125)	5,068,765
9	Carrington research center	<u>9,175,491</u>	<u>198,300</u>	<u>9,373,791</u>
10	Total all funds	\$37,436,948	(\$100,457)	\$37,336,491
11	Less estimated income	<u>20,281,691</u>	<u>459,338</u>	<u>20,741,029</u>
12	Total general fund	\$17,155,257	(\$559,795)	\$16,595,462
13	Full-time equivalent positions	110.29	(0.48)	109.81

14 Subdivision 6.

15 AGRONOMY SEED FARM

		Adjustments or		
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>	
16				
17				
18	Agronomy seed farm	<u>\$1,536,129</u>	<u>\$26,205</u>	<u>\$1,562,334</u>
19	Total special funds	\$1,536,129	\$26,205	\$1,562,334
20	Full-time equivalent positions	3.00	0.00	3.00

21 Subdivision 7.

22 BILL TOTAL

		Adjustments or		
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>	
23				
24				
25	Grand total general fund	\$97,676,057	\$261,855	\$97,937,912
26	Grand total other funds	<u>127,922,235</u>	<u>2,019,614</u>	<u>129,941,849</u>
27	Grand total all funds	\$225,598,292	\$2,281,469	\$227,879,761

28 **SECTION 2. ONE-TIME FUNDING.** The following amounts reflect the one-time funding  
 29 items approved by the sixty-fifth legislative assembly for the 2017-19 biennium and the one-time  
 30 funding items included in the appropriation in section 1 of this Act:

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	<u>2017-19</u>	<u>2019-21</u>
1 <u>One-Time Funding Description</u>		
2    Seed cleaning plants	\$1,500,000	\$750,000
3    Extraordinary repairs	0	1,440,465
4    Junior master gardener program	15,000	0
5    Road and bridge asset management system	<u>300,000</u>	<u>0</u>
6    Total all funds	\$1,815,000	\$2,190,465
7    Total other funds	<u>1,700,000</u>	<u>1,940,465</u>
8    Total general fund	\$115,000	\$250,000

9            The 2019-21 biennium one-time funding amounts are not a part of the entity's base budget  
 10 for the 2021-23 biennium. The main and branch research centers shall report to the  
 11 appropriations committees of the sixty-seventh legislative assembly on the use of this one-time  
 12 funding for the biennium beginning July 1, 2019, and ending June 30, 2021.

13            **SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount  
 14 included in the grand total other funds appropriation line item in section 1 of this Act, any other  
 15 income, including funds from federal acts, private grants, gifts, and donations, or from other  
 16 sources received by the North Dakota state university extension service, the northern crops  
 17 institute, the upper great plains transportation institute, the main research center, branch  
 18 research centers, and agronomy seed farm, except as otherwise provided by law, is  
 19 appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium  
 20 beginning July 1, 2019, and ending June 30, 2021.

21            **SECTION 4. ESTIMATED INCOME - STRATEGIC INVESTMENT AND IMPROVEMENTS**  
 22 **FUND.** The estimated income line item in subdivision 4 of section 1 of this Act includes  
 23 \$1,440,465 of one-time funding from the strategic investment and improvements fund for  
 24 extraordinary repairs.

25            **SECTION 5. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
 26 **INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues  
 27 received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing  
 28 operational expenses. Any revenues received in excess of \$755,000 may be spent only for  
 29 one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

30            **SECTION 6. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
 31 **INCOME - REPORT.** The Williston research extension center shall report to the sixty-seventh

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1 legislative assembly on amounts received and spent from mineral royalties, leases, or  
2 easements in the biennium beginning July 1, 2017, and ending June 30, 2019, and the  
3 biennium beginning July 1, 2019, and ending June 30, 2021.

4 **SECTION 7. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural  
5 research and education and appropriate branch research center directors, the director of the  
6 office of management and budget shall transfer appropriation authority within subdivisions 1, 2,  
7 4, and 5 of section 1 of this Act.

8 **SECTION 8. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The state board of  
9 higher education may adjust or increase full-time equivalent positions as needed for the entities  
10 in section 1 of this Act, subject to availability of funds. All full-time or part-time positions must be  
11 separate from North Dakota state university. Annually, the board shall report to the office of  
12 management and budget and to the budget section any adjustments made pursuant to this  
13 section.

14 **SECTION 9. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended  
15 general fund appropriation authority to and any excess income received by entities listed in  
16 section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any  
17 unexpended funds from these appropriations or revenues are available and may be expended  
18 by those entities, during the biennium beginning July 1, 2021, and ending June 30, 2023.

19 **SECTION 10. EXEMPTION - WILLISTON SEED CLEANING PLANT.** The \$1,500,000 of  
20 special funds appropriation authority for the Williston research extension center included in  
21 subdivision 5 of section 1 of chapter 45 of the 2017 Session Laws for a seed cleaning plant is  
22 not subject to the provisions of section 54-44.1-11 and may be continued and expended by the  
23 Williston research extension center for the seed cleaning plant during the biennium beginning  
24 July 1, 2019, and ending June 30, 2021.

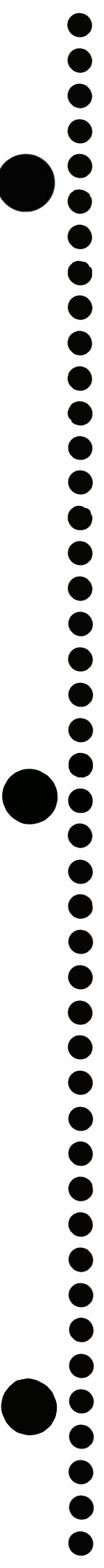


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## ***Internal Control***

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In our audit for the biennium ended June 30, 2017, we identified the following areas of North Dakota State University's internal control as being the highest risk:

### ***Internal Controls Subjected to Testing:***

- Controls surrounding the processing of revenues.
- Controls surrounding the processing of expenses.
- Controls effecting the safeguarding of assets.
- Controls relating to compliance with legislative intent.
- Controls surrounding the ConnectND (PeopleSoft) system.
- Controls relating to compliance with the MAT bus contract provisions.
- Controls surrounding the Agricultural Experiment Station, Extension Service and Northern Crops Institute.

The criteria used to evaluate internal control is published in the publication *Internal Control - Integrated framework* from the Committee of Sponsoring Organizations (COSO) of the Treadway Commission.

We gained an understanding of internal control surrounding these areas and concluded as to the adequacy of their design. We also tested the operating effectiveness of those controls we considered necessary based on our assessment of audit risk. We concluded that internal control was not adequate noting certain matters involving internal control and its operation that we consider to be significant deficiencies.

Auditors are required to report deficiencies in internal control that are significant within the context of the objectives of the audit. A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect (1) misstatements in financial or performance information; (2) violations of laws and regulations; or (3) impairments of effectiveness or efficiency of operations, on a timely basis. Considering both qualitative and quantitative factors, we identified the following significant deficiency in internal control. We also noted other matters involving internal control that we have reported to management of North Dakota State University in a management letter dated July 13, 2018.

### ***Inadequate Journal Entry Approval for the Agricultural Experiment Station and Extension Service (Finding 17-1)***

#### **Condition:**

Journal entries were not properly approved at the NDSU Agricultural Experiment Station and Extension Service. Of the 32 items tested, 10 were not properly approved (31%).

#### **Criteria:**

The Committee of Sponsoring Organizations (COSO) of the Treadway Commission's *Internal Control - Integrated Framework* states that control activities are the actions established through policies and procedures that help ensure that management's directives to mitigate risks to the achievement of objectives are carried out. They may be preventive or detective in nature and may encompass a range of manual and automated activities such as authorizations and approvals.

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The NDUS accounting manual states in part the basic principles of internal control include a review of journal entries and should be documented with the initials or signature of the reviewer and the date reviewed. Additionally, the accounting manual lists acceptable formats for approval, and further states that typing an approver's name in a fillable form is not an acceptable approval.

**Cause:**

There is a misinterpretation of what constitutes approval.

**Effect or Potential Effect:**

Improper or erroneous entries could be made to the general ledger.

**Recommendation:**

We recommend that all journal entries are properly approved and that the approval is documented.

**North Dakota State University Response:**

*NDSU agrees with the recommendation. However, there were no improper or erroneous entries. With support of CTS (Core Technology Services), NDSU plans to implement journal entry workflow in PeopleSoft by December 2018, which we anticipate will clearly demonstrate proper approval and will satisfy this audit recommendation.*

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## *Compliance with Legislative Intent*

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In our audit for the biennium ended June 30, 2017, we identified and tested North Dakota State University's compliance with legislative intent for the following areas we determined to be significant and of higher risk of noncompliance:

- NDUS reported to the appropriations committees of the sixty-fifth legislative assembly on the use of one-time funding for the biennium ended June 30, 2017 (2015 HB 1003, chapter 3, section 2).
- The deferred maintenance funding pool was used for eligible projects that were identified in the campus master plan and space utilization studies (2015 HB 1003, chapter 3, section 25).
- Two dollars of matching funds were provided from operations or other sources for each one dollar of extraordinary repairs that were included in the capital asset line item (2015 HB 1003, chapter 3, section 38).
- The Main Research Center reported to the appropriations committee of the sixty-fifth legislative assembly on the use of one-time funding for the biennium ended June 30, 2017 (2015 HB 1020, chapter 20, section 2).
- Dickinson Research Center spent up to \$755,000 on operating expenses and any revenues in excess of \$755,000 were spent only on one-time expenses (2015 HB 1020, chapter 20, section 11).
- Williston Research Center reported to the sixty-fifth legislative assembly on amounts received and spent from mineral royalties, leases or easements for the bienniums ended June 30, 2015 and June 30, 2017 (2015 HB 1020, chapter 20, section 12).
- The Main Research Center and the Extension Service reported to the appropriation committees of the sixty-fifth legislative assembly on full-time equivalent positions for the biennium ended June 30, 2017 (2015 HB 2010, chapter 20, section 13).
- The Main Research Center reported to the budget section regarding the status of the flooded land study and spending related to the study for the biennium ended June 30, 2017 (2015 HB 1020, chapter 20, section 16).
- Proper use/approval of clearing account and petty cash/till funds (NDCC 54-06-08.1, Attorney General's letter dated September 11, 1987 and Article X, Section 12, part 1 of ND Constitution).
- BND used as credit card processing depository (NDCC 54-06-08.2).
- Scholarship expenses were proper (Article IX, Section 1 of the ND Constitution, NDCC 1-08-02, 15-10-12, 59-21).
- Fixed asset requirements were followed including surplus property, record keeping and lease analysis requirements (NDCC 54-44-04.6, 44-04-07, 54-27-21, 54-44.1-06, 54-27-21.1).
- Expenses including proper voucher approvals (NDCC 44-08-05.1, Article X, Section 12, subpart 2 of ND Constitution) and being within budgeted amounts (NDCC 54-44.1-09, Attorney General Opinion dated January 6, 1977).
- Travel-related expenses are made in accordance with state statute (NDCC 44-08-04, 44-08-04.1, 04.2, 04.3, 04.4, 04.5, 54-06-09).
- Purchasing including bidding and following sole source requirements (NDCC 54-44.4-01, 02, 05, 06, 54-44.7-02, 48-01.2, 44-08-01).
- Conflict of Interest (NDCC 12.1-13-03, 48-01.2-08).
- Carryover of unexpended appropriations (NDCC 54-44.1-11).
- Adequate blanket bond coverage (NDCC 26.1-21-08).

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- Capital construction (NDCC 48-01.2-02, 04, 07, 09, 10, 54-44.7).
- Unclaimed property laws (NDCC 47-30.1-02.1, 47-30.1-03.1).
- Nepotism (NDCC 44-04-09).
- Bond revenues and reserves (NDCC 15-55-03, 15-55-06).
- Misapplication of entrusted property (NDCC 12.1-23-07).

The criteria used to evaluate legislative intent are the laws as published in the *North Dakota Century Code* and the *North Dakota Session Laws*.

*Government Auditing Standards* requires auditors to report all instances of fraud and illegal acts unless they are inconsequential within the context of the audit objectives. Further, auditors are required to report significant violations of provisions of contracts or grant agreements, and significant abuse that has occurred or is likely to have occurred.

The results of our tests disclosed two instances of noncompliance that are required to be reported under *Government Auditing Standards*. These findings are described below. Other than these findings, we concluded there was compliance with the legislative intent identified above. We also noted certain inconsequential instances of noncompliance that we have reported to management of North Dakota State University in a management letter dated July 13, 2018.

### ***Noncompliance With Procurement Rules (Finding 17-2)***

#### **Condition:**

NDSU had the following issues surrounding procurement:

- Eight sole source purchases for commodities and services (totaling \$680,203) did not adequately justify or exempt the purchase from the normal procurement process; and
- The Elan One credit card services program for study abroad was not properly procured. Total usage of the program card was \$1,042,132.

#### **Criteria:**

NDCC section 12.1-13-03, states in part, every public servant authorized to sell or lease any NDCC section 15-10-17 part 5, states in part, that the SBHE may determine policy for purchasing by the University System in coordination with OMB as provided by NDCC chapter 54-44.4 and NDCC section 44-08-01 part 3.

NDUS Procedure 803.1 parts 1 and 4, states in part that sole source purchases are unique and the vendor is the only vendor able to furnish the commodity or service. Sole source requests based on personal preference, cost or price, perceived quality, vendor performance, delivery time, trade-in allowance or no cost options or accessories or other special packages or deals are not permitted; rather, these items may be considered in evaluating bids or proposals.

#### **Cause:**

NDSU's purchasing policy does not include prudent information surrounding sole source purchases. The Elan One card program was not bid out because of the difficulties NDSU encountered in locating vendors that met their specific needs.

#### **Effect or Potential Effect:**

Without properly procuring commodities and services, there was noncompliance with NDUS procedures, and ultimately, noncompliance with NDCC chapter 54-44.4 and NDCC section 44-08-01 part 3.

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**Recommendation:**  
We recommend that NDSU properly procure commodities and services in compliance with NDCC and NDUS requirements.

**North Dakota State University Response:**  
NDSU agrees with the recommendation but disagrees with the condition. Elan was the only vendor identified through an extensive search who could handle a faculty lead study abroad. OMB permitted NDSU the exemption from the state's procurement card. Card fees paid to Elan are below the threshold required for a competitive purchase. In the eight sole source purchases, NDSU achieved the best possible value. In some cases, the lowest price was selected from multiple quotes. In other cases a bid process was not appropriate. NDSU plans to propose a rewrite to the NDUS procedure to clarify these alternate procurement methods.

***Inadequate Controls Over Disclosed Conflicts of Interest (Finding 17-3)***

**Condition:**  
NDSU had conflicts of interest that were disclosed and a summary list was maintained by the Purchasing Department; however, the summary list was not communicated with other departments and purchases were made with disclosed conflicts of interest without any additional scrutiny.

**Criteria:**  
NDCC section 12.1-13-03, states in part, every public servant authorized to sell or lease any property, or to make any contract in his official capacity, alone or in conjunction with other public servants, who voluntarily becomes interested individually in the sale, lease, or contract, directly or indirectly, is guilty of a class A misdemeanor.

Committee of Sponsoring Organization of the Treadway Commission (COSO), states in part, control activities specifically relate to those policies and procedures that contribute to the mitigation of risks to the achievement of objectives to acceptable levels. Supervisory controls assess whether other transaction control activities are being performed completely, accurately, and according to policy and procedures. Control activities can be preventive or detective, preventive controls are designed to avoid an unintended event or result at the time of initial occurrence.

**Cause:**  
There was a lack of communication between departments surrounding conflicts of interest.

**Effect or Potential Effect:**  
There is noncompliance with NDCC section 12.1-13-03 and inadequate controls exist for purchases with disclosed conflicts of interest.

**Recommendation:**  
We recommend NDSU develop and implement controls to ensure that no conflict of interest exists with any transaction with a disclosed conflict of interest.

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**North Dakota State University Response:**

*NDSU agrees with the recommendation. Department heads already approve conflict disclosures. However, as an extra step, NDSU Purchasing will summarize the reported conflict disclosures and provide a list to the department heads for further monitoring. In addition, we will inactivate the applicable supplier IDs in PeopleSoft to better flag future transactions to ensure department head approval on the transaction.*

North Dakota University System  
 Extension Service, Main & Branch Research Centers, and Agronomy Seed Farm  
 Major Components of current base level

	630 Extension	640 Main Station	641 Dickinson	642 Central Grasslands	643 Hettinger	644 Langdon	645 North Central	646 Williston	647 Carrington	649 Agronomy Seed Farm
Salaries	\$ 41,920,195	\$ 67,308,153	\$ 2,560,617	\$ 1,775,191	\$ 2,457,753	\$ 1,562,704	\$ 2,529,959	\$ 3,465,061	\$ 5,212,338	\$ 565,381
Operating	9,949,814	36,641,090	3,149,934	1,373,433	2,192,380	1,146,903	1,998,693	928,829	2,738,153	670,748
Equipment	410,000	4,693,000	1,115,000	275,000	325,000	255,000	425,000	725,000	1,225,000	300,000
Capital Projects	-	-	-	-	-	-	-	-	-	-
Total Budget	\$ 52,280,009	\$ 108,642,243	\$ 6,825,551	\$ 3,423,624	\$ 4,975,133	\$ 2,964,607	\$ 4,953,652	\$ 5,118,890	\$ 9,175,491	\$ 1,536,129
Funding:										
Federal Fund	\$ 7,740,790	\$ 8,419,260	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
General Fund	25,633,320	49,557,415	3,383,862	1,991,605	2,167,501	1,559,510	1,875,900	2,737,313	3,439,566	-
Special Fund	18,905,899	50,665,568	3,441,689	1,432,019	2,807,632	1,405,097	3,077,752	2,381,577	5,735,925	1,536,129
Total Funding	\$ 52,280,009	\$ 108,642,243	\$ 6,825,551	\$ 3,423,624	\$ 4,975,133	\$ 2,964,607	\$ 4,953,652	\$ 5,118,890	\$ 9,175,491	\$ 1,536,129

Source: IBARS 2019-21, Agency Submitted

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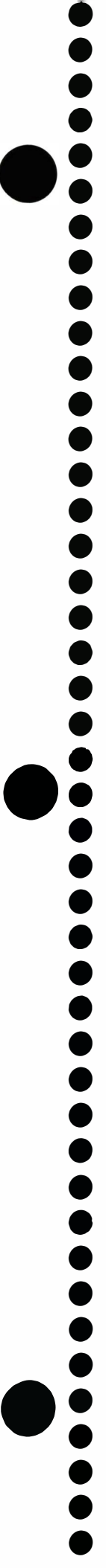


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NDSU Extension Service - 630

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<u>2017-19 Appropriation</u>	<u>Actual Expenditures Through 11/30/18</u>	<u>Remaining Balance</u>	<u>Comments</u>
<b>Total General Fund Appropriation</b>	<b>\$ 25,648,320</b>	<b>\$ 16,167,224</b>	<b>\$ 9,481,096</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**NDSU Main Research Station - 640**

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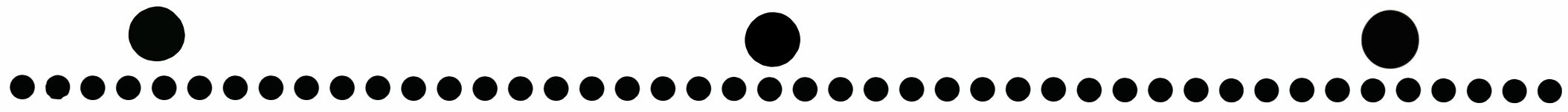
**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>* \$50,133,108</b>	<b>\$30,245,433</b>	<b>\$19,887,675</b>	--Balance will be drawn down for expenditures by end of biennium. * Includes carryover of \$575,693

Source: November 2018 Appropriation Status Report

Note: uncertain changes expected to Federal funding levels.

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NDSU Dickinson Research Center- 641

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<u>2017-19 Appropriation</u>	<u>Actual Expenditures Through 11/30/18</u>	<u>Remaining Balance</u>	<u>Comments</u>
<b>Total General Fund Appropriation</b>	<b>\$ 3,383,862</b>	<b>\$ 2,329,501</b>	<b>\$ 1,054,361</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

NDSU Central Grasslands Research Center- 642

**Comparison of 2017-19 Appropriation and Estimated Spending**

	<u>2017-19 Appropriation</u>	<u>Actual Expenditures Through 11/30/18</u>	<u>Remaining Balance</u>	<u>Comments</u>
<b>Total General Fund Appropriation</b>	<b>\$ 1,991,605</b>	<b>\$ 1,429,975</b>	<b>\$ 561,630</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**NDSU Hettinger Research Center- 643**

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	\$ 2,167,501	\$ 1,505,832	\$ 661,669	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

**NDSU Langdon Research Center- 644**

**Comparison of 2017-19 Appropriation and Estimated Spending**

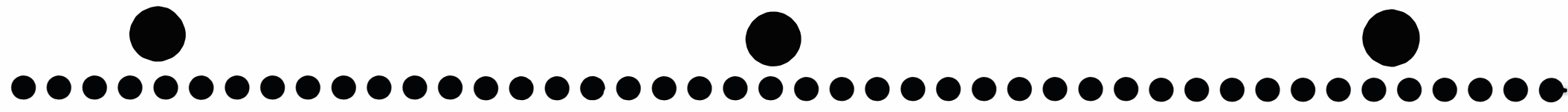
	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	\$ 1,559,510	\$ 1,089,165	\$ 470,345	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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NDSU North Central Research Center- 645

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 1,875,900</b>	<b>\$ 1,014,979</b>	<b>\$ 860,921</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

NDSU Williston Research Center- 646

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 2,737,313</b>	<b>\$ 1,751,758</b>	<b>\$ 985,555</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

NDSU Carrington Research Center- 647

**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$ 3,439,566</b>	<b>\$ 2,093,432</b>	<b>\$ 1,346,134</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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NDSU Agronomy Seed Farm- 649

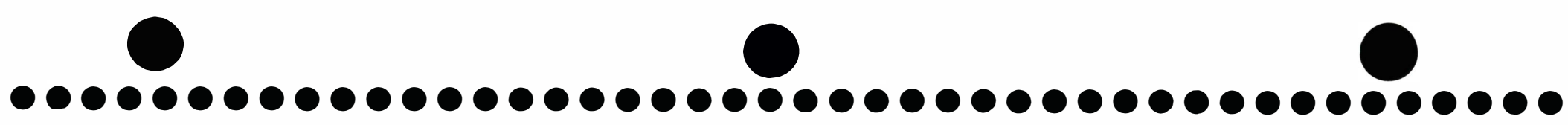
**Comparison of 2017-19 Appropriation and Estimated Spending**

	2017-19 Appropriation	Actual Expenditures Through 11/30/18	Remaining Balance	Comments
<b>Total Appropriation</b>	\$ 1,536,129	\$ 1,000,441	\$ 535,688	

Source: November 2018 Appropriation Status Report

Note: No significant changes anticipated in federal formula funds or federal grants

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**North Dakota University System  
NDSU Extension, Main & Branch Research Centers  
Reconciliation of 2017-19 Orig. General Fund Appropriation to 2019-21 Engrossed HB1020**

	<u>Extension Service</u>	<u>Main Research Center</u>	<u>Branch Research Centers</u>
<b>2017-19 Original General Fund Appropriation(5/31/18 Approp.)</b>	<b>\$ 25,648,320</b>	<b>\$ 50,133,108</b>	<b>\$ 17,155,257</b>
<b>Base Adjustments:</b>			
Less 2017-19 One-time Appropriations	(15,000)	-	-
Less 2017-19 Capital Projects		(575,693)	-
<b>Total Base Adjustmenets</b>	<b>(15,000)</b>	<b>(575,693)</b>	<b>-</b>
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>25,633,320</b>	<b>49,557,415</b>	<b>17,155,257</b>
<b>Engrossed HB1020 Base Increases (Decreases):</b>			
2%/2% salary/benefit increase and health insurance increases	1,084,918	1,837,917	663,856
<b>Operating Expense Reduction</b>		<b>(2,955,742)</b>	<b>(1,200,560)</b>
Capital Bond Payment adjustment		(65,091)	(23,091)
Williston Seed Cleaning Plant		250,000	
Miscellaneous Expense	100,000		
Road & Bridge Study			
Web strategy & content imaging project			
<b>2019-21 Recommended Base General Fund Increases(Decreases)</b>	<b>1,184,918</b>	<b>(932,916)</b>	<b>(559,795)</b>
<b>2019-21 Total Engrossed HB1020 - General Fund</b>	<b>26,818,238</b>	<b>48,624,499</b>	<b>16,595,462</b>
<b>Increase (Decrease) From 2017-19 Base General Fund Budget*</b>	<b>\$ 1,184,918</b>	<b>\$ (932,916)</b>	<b>\$ (559,795)</b>
<b>Operating Expense Reduction as a % of Base Funding</b>		<b>-5.96%</b>	<b>-7.00%</b>
* Overall increase (Decrease %) - this is all proposed changes including Operating Expense reduction and compensation and health insurance adjustment	4.62%	-1.88%	-3.26%

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**North Dakota University System  
 Extension Service, Main & Branch Research Centers, and Agronomy Seed Farm  
 Reconciliation of 2017-19 Original Other Fund Budget Appropriation to 2019-21 Engrossed HB1020**

	Extension Service	Main Research Center	Branch Research Centers	Agronomy Seed Farm
2017-19 Original Other Fund Appropriation	\$ 26,646,689	\$ 59,084,828	\$ 21,781,691	\$ 1,536,129
Remove Capital Project & One Time funds		(5,997,398)	\$ (1,500,000)	
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>\$ 26,646,689</b>	<b>\$ 53,087,430</b>	<b>\$ 20,281,691</b>	<b>\$ 1,536,129</b>
<b>Engrossed HB1020 Base Increases (Decreases):</b>				
2%/2% salary/benefit increase and health insurance increases	982,267	1,214,472	259,338	26,205
One-time extraordinary repairs(SIIF)	-	1,440,465		
Oakes irrigation site funding			200,000	
Williston Seed Cleaning Plant		500,000		
Miscellaneous Expense	-	3,000,000	-	
<b>Total Engrossed HB1020 Increases</b>	<b>982,267</b>	<b>6,154,937</b>	<b>459,338</b>	<b>26,205</b>
<b>2019-21 Total Engrossed HB1020 - Other Funds</b>	<b>\$ 27,628,956</b>	<b>\$ 59,242,367</b>	<b>\$ 20,741,029</b>	<b>\$ 1,562,334</b>

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**North Dakota University System  
Branch Research Centers  
Reconciliation of 2017-19 Orig. General & Other Fund Appropriation to 2019-21 Engrossed HB1020**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dickinson	Central Grasslands	Hettinger	Langdon	North Central	Williston	Carrington	Total
<b>General Fund:</b>								
2017-19 Original General Fund Appropriation	\$ 3,383,862	\$ 1,991,605	\$ 2,167,501	\$ 1,559,510	\$ 1,875,900	\$ 2,737,313	\$ 3,439,566	\$ 17,155,257
<b>Base Adjustments:</b>								
Base Payroll adjustments	-							-
2019-21 Adjusted Appropriation, Less Base Adjustments	3,383,862	1,991,605	2,167,501	1,559,510	1,875,900	2,737,313	3,439,566	17,155,257
<b>Engrossed HB1020 Increases (Decreases):</b>								
Restore funding								-
<b>Operating Expense Reduction</b>	<b>(263,386)</b>	<b>(130,969)</b>	<b>(141,750)</b>	<b>(93,451)</b>	<b>(103,316)</b>	<b>(198,731)</b>	<b>(268,957)</b>	<b>(1,200,560)</b>
2%/2% salary/benefit increase and health insurance increases	100,414	79,214	89,904	70,738	67,367	115,392	140,827	663,856
Capital Bond Payment adjustment		(8,782)			(14,309)			(23,091)
SBARE Initiatives								
2019-21 Recommended Base General Fund (Decreases)	(162,972)	(60,537)	(51,846)	(22,713)	(50,258)	(83,339)	(128,130)	(559,795)
2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)	\$ 3,220,890	\$ 1,931,068	\$ 2,115,655	\$ 1,536,797	\$ 1,825,642	\$ 2,653,974	\$ 3,311,436	\$ 16,595,462
2019-21 (Decrease) From 2017-19 Base Budget*	\$ (162,972)	\$ (60,537)	\$ (51,846)	\$ (22,713)	\$ (50,258)	\$ (83,339)	\$ (128,130)	\$ (559,795)
<b>Operating Expense Reduction as a % of Base Funding</b>	<b>-7.78%</b>	<b>-6.58%</b>	<b>-6.54%</b>	<b>-5.99%</b>	<b>-5.51%</b>	<b>-7.26%</b>	<b>-7.82%</b>	<b>-7.00%</b>
*Overall increase (Decrease %) - this is all proposed changes including Operating Expense reduction and compensation/health insurance adjustments	-4.82%	-3.04%	-2.39%	-1.46%	-2.68%	-3.04%	-3.73%	-3.26%
<b>Other Funds:</b>								
2017-19 Original Other Fund Appropriation	\$ 3,441,689	\$ 1,432,019	\$ 2,807,632	\$ 1,405,097	\$ 3,077,752	\$ 3,881,577	\$ 5,735,925	\$ 21,781,691
Remove Capital Project						(1,500,000)		(1,500,000)
2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)	\$ 3,441,689	\$ 1,432,019	\$ 2,807,632	\$ 1,405,097	\$ 3,077,752	\$ 2,381,577	\$ 5,735,925	\$ 20,281,691
<b>Engrossed HB1020 Increases (Decreases):</b>								
5%/10% reduction	(344,169)	(143,202)	(280,763)	(140,510)	(307,775)	(238,158)	(573,593)	(2,028,170)
Restore funding	344,169	143,202	280,763	140,510	307,775	238,158	573,593	2,028,170
2%/2% salary/benefit increase and health insurance increases	10,503	3,656	28,946	6,017	50,572	33,214	126,430	259,338
Oakes irrigation site funding		-					200,000	200,000
2019-21 Recommended Base Other Fund Increases	10,503	3,656	28,946	6,017	50,572	33,214	326,430	459,338
2019-21 Total Engrossed HB1020 - Other Funds	\$ 3,452,192	\$ 1,435,675	\$ 2,836,578	\$ 1,411,114	\$ 3,128,324	\$ 2,414,791	\$ 6,062,355	\$ 20,741,029

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## Proposed budget reductions to meet the governor's 90 or 95 percent budget request guidelines

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### **Main Research Center** (\$4,955,742 General Fund; \$5,908,483 Special Funds)

The Main Research Center would not be able to function as in the past with cuts of this magnitude. Last Session's cut included a reduction of 30.28 FTE and significant operating cuts. To cut additional amounts this Session would require closure of programs, elimination of related FTEs, and severely impact service to North Dakota citizens.

### **Branch RECs** (\$1,700,560 General Funds; \$2,028,169 Special Funds)

The Branch RECs would not be able to function as in the past with cuts of this magnitude. Last Session's cut included a reduction of 10.25 FTE and significant operating cuts. To cut additional amounts in both General and Special Funds this Session would likely require closure of research programs, elimination of related FTEs, and severely impact service to North Dakota citizens.

### **NDSU Extension** (\$2,563,332 General Funds; \$2,664,669 Special Funds)

NDSU Extension would not be able to function as in the past with cuts of this magnitude. Last Session's cut included a reduction of 12.47 FTE and significant operating cuts. In addition, a review of NDSU Extension was undertaken by SBARE in conjunction with the Governor's Office, and many changes have been implemented. To cut additional amounts in both General and Special Funds this Session would require closure of programs, elimination of related FTEs, and severely impact service to North Dakota citizens.

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**NORTH DAKOTA**  
**STATE BOARD OF AGRICULTURAL RESEARCH AND EDUCATION**

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#3  
p1

March 20, 2019

Testimony to Senate Appropriations

Mr. Chairman and Members of the Committee:

For the record, my name is Keith Peltier. I am the General Manager of Proseed Inc. and an Ag Coalition appointee to the State Board of Agricultural Research and Education (SBARE). I currently serve as the Chairman of SBARE. Thank you for the opportunity to appear before you today.

The State Board of Agricultural Research and Education (SBAR) was established by Legislative decree in 1997. It was responsible for budgeting and policy-making associated with the supervision of the North Dakota Agricultural Experiment Station. The law was amended in 1999 to include responsibility for the North Dakota State University (NDSU) Extension Service and the name was changed to the State Board of Agricultural Research and Education (SBARE).

As outlined in 15-12.1-17 there are 10 responsibilities of SBARE:

1. *Determine the causes of any adverse economic impacts on crops and livestock produced in this state;*
2. *Develop ongoing strategies for the provision of research solutions and resources to negate adverse economic impacts on crops and livestock produced in the state;*
3. *Develop ongoing strategies for the dissemination of research information through the Extension Service;*
4. *Implement the strategies developed under subsections 2 and 3, subject to the approval of the state board of higher education;*
5. *Develop, with the agricultural experiment station and the extension service, an annual budget for the operations of these entities;*

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6. *Develop a biennial budget request based on its prioritized needs list and submit that request to the president of North Dakota state university and the state board of higher education, and forward its prioritized needs list and request without modification to the office on management and budget and the appropriations committees of the legislative assemblies;*
7. *Maximize the use of existing financial resources, equipment, and facilities to generate the greatest economic benefit from research and extension efforts and to promote efficiency;*
8. *Annually evaluate the results of research and extension activities and expenditures and report the findings to the legislative management and the state board of higher education;*
9. *Advise the president of North Dakota state university regarding the recruitment, selection, and performance of the vice president of agricultural affairs, the extension service director, and the station director; and*
10. *Present a status report to the budget section of the legislative management.*

As required by the Century Code, SBARE develops the biennial budget request by receiving information from commodity groups, stakeholders, researchers, extension leaders, and agribusiness interests in the state. We started this current budget-building effort late in 2017 by inviting more than 300 groups and/or individuals to provide input. The Board received input from many of these groups in the months that followed. The information presented was summarized into specific bundled initiatives based on appropriate topics. The Board considered these bundled programmatic initiatives, capital improvement project requests, and one-time funding needs and finalized the ranking in May of 2018.

Ag Research and Extension provides an excellent return on the State's investment.

Thank you for your past and continued support.

Keith Peltier  
SBARE Chair  
Phone: 701-341-1454  
Email: [proseed@gondtc.com](mailto:proseed@gondtc.com)  
[www.ag.ndsu.edu/sbare](http://www.ag.ndsu.edu/sbare)

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## EXT and AES Testimony

Good morning members of the Senate Appropriations Committee.

My name is Greg Lardy and I am a native of Sentinel Butte, ND where I grew up on a ranch and small grain operation. I have been at NDSU since 1997, first serving as the beef cattle extension specialist and then as department head in Animal Sciences.

Since 2015, I have served in a part time role as the Associate Vice President for Ag Affairs. In July, I started in the role of interim director, NDSU Extension. In August, when Dr. Grafton was named interim Provost, I took on additional role as Acting Director of the ND Agricultural Experiment Station.

Let me begin with expressing my thanks you for your support of our budgets during what was a very difficult session in 2017. The agencies I represent play a vital role in North Dakota's economy, and for our states' agricultural industry. Our scientists seek solutions to production problems, develop new crop varieties and improved livestock production practices, and they help identify new uses for our agricultural commodities. Our REC network is strategically located across the state and serves the needs of the unique growing regions and commodities which are grown in the various locales. And NDSU Extension has a local presence in each of the 53 counties in North Dakota through our partnerships with county governments, extending the knowledge to every corner of the state while providing transformational education programs that help people make decisions which are informed by science.

This morning you will hear from a number of the grass roots users of our research and extension programs. They will brief you on the impacts that these programs have on their farms, ranches, and agribusinesses and how the work we do leads to a brighter future for ND agriculture and the state's economy as a whole.

Agriculture touches every corner of North Dakota. The impact of agriculture is felt by businesses throughout the state, whether you are talking about the local insurance business in Maddock, a car dealership in Bowman, or a new tech start up focused on precision agriculture in Fargo. Each of these businesses benefits directly or indirectly from the work conducted by NDSU Extension and the ND Agricultural Experiment Station.

One item that I wanted to mention is the budget difficulty faced by two of our REC's (the North Central and the Dickinson REC). Previously both centers had directors that were partially funded by NDSU Extension as both had significant extension duties. This is no longer the case and both centers now fund the director positions from the REC budgets. This has limited the ability of these two centers to fill other important scientist positions at each location.

### A. Description and mission statement

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The agricultural experiment station shall develop and disseminate technology important to the production and utilization of food, feed, fiber, and fuel from crop and livestock enterprises. The research must provide for an enhancement of the quality of life, sustainability of production, and protection of the environment.

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As Chairman Peltier mentioned, SBARE has listened carefully to the needs of agriculture and these needs can be found on pages 19-21 of the budget book. I will briefly touch on each of these initiatives.

The top ranked research initiative is the Agri biome Initiative. The microbiome encompasses the microorganisms that inhabit a particular environment. We each have a microbiome. On our skin, in our nasal passages, in our digestive tract. The crops and livestock we grow also have a microbiome. The agri biome is the community of microorganisms which live in the soil, on plants, and in the digestive tracts of animals, just to name a few places. The agri biome is largely unstudied but holds promise for unlocking the next wave of productivity gains in agriculture. A better understanding of the agri biome may help us reduce fertilizer applications, improve growth and nutrient utilization, and defend against plant and animal diseases. Following much discussion SBARE ranked this as their number one initiative. We are seeking an appropriation of \$1,160,000 which includes scientist and technician working on microbe-livestock interactions and a scientist and technician working on organismal-plant interactions.

Precision Agriculture. Our current \$600,000 appropriation is administered as a competitive grant program. We are requesting an additional \$800k to supplement this grant program and establish smart farms in Casselton and Fargo. This appropriation would allow us to continue to enhance our efforts in this area and provide research based solutions for ND's agricultural industry.

Enhancing Research Capacity-The request is for \$280,000 for operating support for REC's, \$210,000 in support for the Main Station, and \$200,000 in support for the Oakes Irrigation Site. The Executive Budget included \$200,000 in other fund authorization for the Oakes site. We request this committee consider providing general fund dollars to fund this request.

SBARE also ranks the capital improvement project request for the ND Ag Experiment Station. A brief summary of the capital improvement projects with more detail found on page 59 of your budget book. One item from that list that was recommended for funding by the House is the seed cleaning facility at Williston. The House added \$250,000 of the requested \$750,000 in General Funds. Dr. Bergman will address this in more detail in his testimony.

In addition, the Governor's Executive Budget and the House included a funding recommendation for \$1,440,465 for extraordinary repairs. This funding from the SIIF would help the Experiment Station address critical repair needs across both the Main Station and REC's.

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For NDSU Extension, the top ranked SBARE Initiative is 'Web and Digital Delivery'. This initiative was included in the Governor's Executive Budget recommendation but was not included by the House. SBARE reviewed NDSU Extension in response to the 65<sup>th</sup> Legislative Assembly. This review was completed in 2018 and a final report was submitted to the Budget Section in March of that year. One of the 30 recommendations from that report was that Extension optimize the use of technology and enhance the effectiveness and efficiency of delivery methods. Each of you likely has a smart phone or tablet device. More and more people are accessing information and decision making tools on these devices. This initiative would improve the accessibility of NDSU Extension materials on these devices and provide funds for our specialists and agents to continue to develop phone and tablet based applications that can be used anywhere. The request for this initiative is \$345,000.

The second ranked initiative is Extension Operational Support. The SBARE review of Extension indicated strong support for the local Extension presence that citizens have come to expect from their local county offices. The local agents are supported through a network of specialists who are located at our REC's and in departments on campus in Fargo. This initiative would provide funds to enhance our partnerships with county-based programming and it would also provide additional operating support to enhance program delivery by our specialists. The total request for this initiative is \$870,000.

I would also be remiss if I failed to mention the importance of a compensation package for our ND Agricultural Experiment Station and NDSU Extension employees. We believe that a compensation package will allow us to continue to retain and recruit the caliber of scientists and other personnel that the citizens of North Dakota have come to expect from our agency. We ask for your consideration of a compensation package for our employees as you consider this budget.

The ND Agricultural Experiment Station and NDSU Extension work side by side to improve the economic condition of the agricultural industry and communities throughout the state. The return on investment generated by our research and extension programming is significant. Here are just a few examples of some of our impacts.

#### AES Impacts

- AES Scientists are developing tools to lead the fight against herbicide resistant weeds. These tools include genetic diagnostic tools which will identify resistant weeds earlier and allow more precise herbicide applications. We estimate these tools may provide long term cost savings of \$20 to \$50 per acre.
- AES plant breeding programs have the following impacts:
  - 92% of the black bean acreage in the state is planted to Eclipse, an NDSU variety
  - 90% of the durum acreage in ND is planted to NDSU developed varieties.

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- 60% of the pinto bean acreage in the state is planted to slow darkening pintos, and approximately half of that acreage is planted to ND Palamino, the first slow darkening variety released in the state.
- Nearly 19% of the fall potato acres in ND, ID, OR, WA, MN, WI, Maine were planted to NDSU varieties.
- Our research indicates that the value of replacement heifers can be increased over \$500 per head through the use of Artificial Insemination.
- Research conducted by scientists at the DREC and Main Station indicates that more emphasis on matching the beef cow to the forage resources and emphasizing longevity could result in over \$20 million in additional revenue for beef cattle producers.
- Scientists with the ND Agricultural Experiment Station continue to develop better ways to manage saline soils in ND. Our latest research indicates saline and non-saline areas within a field function as different ecosystems. This work will potentially lead to better methods of using site specific farming to manage cropping systems impacted by saline issues.

Here are a few program highlights which demonstrate the impacts of NDSU Extension:

- Nearly 7,000 people have downloaded the NDSU Extension Pest Management App since it was developed. The app combines the Plant Disease Management, Insect Control, and Weed Control Guides into one handy digital format.
- During the 2017 drought, NDSU Extension agents and specialists conducted forage testing and follow consultation services which prevented 16,000 cattle from being exposed to toxic forages during the drought.
- Extension specialists developed a farm bill decision tool which allowed farmers to make better informed decisions on how to enroll in specific FSA programs. Over 15,000 farmers attended these educational meetings.
- NDSU Extension Food and Nutrition programs reached over 154,000 people in 2017. These programs focus on education which encourages people to eat healthier and reduce the risk of obesity and other diet related health issues such as diabetes. Diabetes is estimated to cost ND over \$700 million annually.
- Lead Local programming has helped over 300 people feel more confident in their ability to serve on local councils, boards, and committees. This translates into more effective local governments and improved decision making at the local level.
- ND 4-H programs impact over 6,400 youth across the state. Enrollment in 4-H has grown 19% over the past five years. Over 1,600 youth participated in a 4-H camping experience this past year.

pdf

- Compared with their peers, 4-H youth are
  - Twice as likely to participate in STEM activities
  - Twice as likely to be civically active
  - Twice as likely to make healthy choices
  - Four times more likely to give back to their communities

I would like to take some time to address the effects of the budget cuts proposed by the House of Representatives and their effects on the Ag Experiment Station and REC network. These proposed cuts total \$2.95 million for the Main Station and \$1.2 million for the REC's. Coming on the heels of the cuts implemented as a result of the 2017 session, they would seriously undermine the ability of our agency to serve the needs of constituents and stakeholders throughout North Dakota. As a result of the budget cuts in 2017, the ND Agricultural Experiment Station eliminated over 30 FTE's. We addressed the cuts through reductions in force, retirements, resignations, reducing operating and equipment budgets, and eliminating research programs.

The proposed cuts would lessen our ability to respond proactively to research needed by our agricultural industries in key areas such as plant disease management, livestock feeding and nutrition, plant breeding, soil fertility management, farm management and economics, and other core areas. The cuts would also continue to impact our ability to attract and retain the high caliber of scientists you and our constituents have come to expect and would have lasting detrimental effects on our agency.

I ask that you consider restoring these cuts and funding our base budget per the SBARE request and also that you look favorably on the initiatives which are prioritized by SBARE.

We also have a number of individuals who wish to testify on behalf of our REC's and Main Station. At this point I will conclude my testimony and answer any questions you may have.

Thank you for your questions and consideration of our request. At this point Blaine Schatz, director of the Carrington REC will begin testimony from our REC Network.

**Testimony to North Dakota Senate Appropriations Committee: HB1020**  
March 20, 2019  
**North Dakota State University**  
**NDSU Agriculture Experiment Station & Research Extension Centers**

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Good morning, my name is Blaine Schatz, I am the director of the Carrington Research Extension Center. Senator Holmberg and Senate Appropriations Committee members, I thank you for the opportunity to address your committee.

The agriculture industry across North Dakota is as diverse and complex as any place in our country. Because of this diversity, our producers have many opportunities to compete and succeed in providing food, feed and fuel to the world's consumers. However, these same diverse opportunities come with challenges for our producers as they look to utilize their inputs most efficiently, manage crop pests and improve the natural resources that are the basis of agriculture's success.

The CREC is positioned to address many of the challenges our producers face as they work to maintain a vibrant agriculture economy in our state. The CREC has research programs in agronomy, livestock, plant pathology, soils and precision agriculture that are working together on producer challenges. Our research team addresses these challenges by leveraging our efforts through collaborations. Many of you are familiar with the collaborations we have with the Main Station scientists. We also partner with the USDA, other Federal agencies and certainly state agencies such as the Agriculture Department, Department of Health, Water Commission and others. Our collaborations with the different commodity organizations are very important as we work to address the priority issues they identify. However, the research collaborations that are often under looked and especially significant in both number and impact are those collaborations we have with private sector businesses, our broad agri-industry. NDSU agricultural research is a very important part of the process that the private sector utilizes to bring new technologies into the marketplace. Agriculture is a complex industry, there are hundreds of companies that are involved with providing services and products to our farmers and ranchers. We have a continuous evolution of new technologies that are being developed, evaluated, refined and ultimately introduced to our producers because of their merits or discarded because of their fallacies. Typically, dozens of private sector businesses collaborate with researchers at each REC annually. These businesses range from the major multi-national companies to new start-up enterprises. These collaborations allow us to greatly leverage our state resources to expand the capacity for agricultural research on behalf of the state's major industry. Our private sector collaborators look to the REC's to evaluate their product in our unique environments, our research is used to refine product use strategy, we provide comparison to competitor alternatives, develop data for product registrations and ultimately aid in determining whether the product is viable. Finally, the resulting information is highly sought after as the primary source of non-biased research based information by the farmers and ranchers as they decide whether to incorporate that product or technology into their operation. I previously referenced that these private sector collaborations were significant in number. For example, at the CREC just in the year of 2018, we collaborated with 30 different agri-businesses on evaluation and development of products and new technologies. This total does not include the 43 different seed companies we also worked with.

The collaborations between public agricultural researchers and our private sector partners is a major reason our producers have the tools to be successful and competitive in the world marketplace. The budget reductions we experienced last session definitely had an impact on the degree of collaboration we are able to provide for both our public and private research partners. The additional reduction for ag research that currently exists in HB1020 will further limit the potential to sustain these research collaborations that are such an integral part of the research and development sector that is the foundation of this major industry.

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Chairman Holmberg and members of the committee, my name is Darrell Oswald and I am here today as the Chairman of the Central Grasslands Extension Center advisory committee, and as a farmer and rancher in northeast Burleigh County, near Wing.

We have heard today how critical research is in today's agriculture climate. I agree whole heartedly with those statements as I am a producer who manages for soil health and biodiversity myself. As I believe that this is the best way forward to promote sustainable farming and ranching on my place. This relates to the work and importance of what they do at Central Grasslands and other REC's as well is the fact that there is a Regenerative Agriculture movement going on among farmers and ranchers. Farmers and ranchers want to be profitable and stay in business. They are just starting to learn how. Increased knowledge of the Agri biome is a must. The definition of Agri biome being the combination of the microbes of plants, soils and livestock and how they all can work together, and if they fit together properly to increase productivity and increase efficiency, food safety and food quality. Today, it seems, in my opinion, in production agriculture we are inputting ourselves to death. We need to find ways to harness the power of the soil, plants and animals to fix our production model and ecosystem function as a whole. The Agri biome Initiative and the work that will be done and is done at the REC'S fits this model. Central Grasslands, as Kevin has mentioned is studying multi-paddock adaptive grazing and increasing grazing efficiency that puts real value in producer's pockets. The centers work on late season grazing options and different forage options for extending the grazing season in our climate conditions are vital for lowering producers input costs and putting more dollars in producer's pockets. The use of cover crops in crop rotations and full season cover crops and planting green

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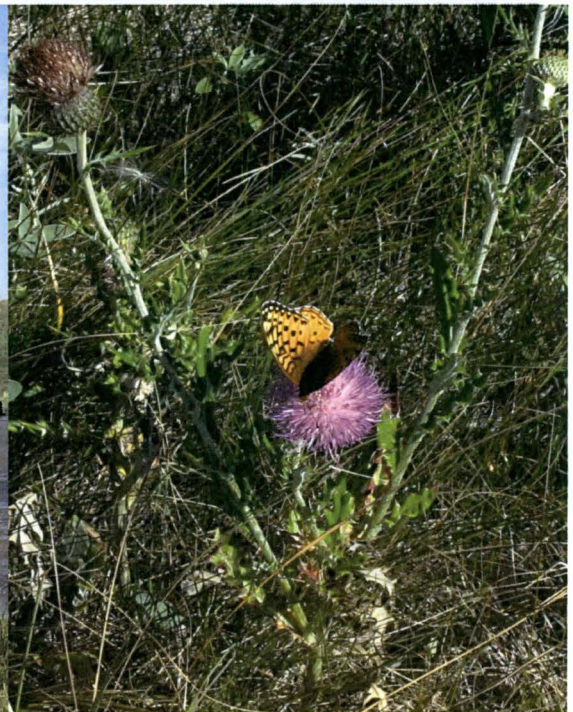
are all things that are being researched and need to be continually researched to become better methods moving forward. And are proving to be beneficial to soil health and lowering input costs. Research using livestock as a tool to increase soil carbon and biology is vital moving forward. Finding ways to unsimplify the landscape if you will and the research that goes along with it will be the way forward. This is why the Agri biome Initiative and the work of all the REC's is important. Agriculture, by nature is an extraction business. We have harvested a lot of the carbon out of our soils through our production methods on the ranching and farming side. Consequently, it's essential to add more carbon back. Carbon is the food-it's the currency exchange in the soil. Everything is a biome. Our decisions we make as producers have compounding and cascading effects on ecological function. The Agri biome Initiative will help us going forward on understanding how all these processes work and how we can put more carbon back into the system. The work of the REC's is an important connection to all of this. The researchers need to spend time with producers who are focused on regenerative agriculture. They can then come to understand the pulse of the farmers and ranchers and what they want moving forward. I will end with a quote from David Montgomery. "Using agriculture to improve the land is a total game changer. But needs a different way of thinking." The Agri biome Initiative is that different way of thinking. Its about how to build soils and look at soil and farming and ranching as an ecological system. We can grow crops and livestock profitability and restore soil health all at the same time. Thank you for the opportunity this morning. I would certainly stand for any questions.

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# NDSU Central Grasslands Research Extension Center

Enhancing Lives while Improving Ecosystem Services and  
Conservation of the Grasslands



## **Agriculture #1 Industry in North Dakota** (ND Dept. Commerce)

- ◆ \$10.9 billion per year (NASS.USDA 2017)
- ◆ 24% of the state's population is employed in the agricultural sector
- ◆ 90% of the state's land is used for agriculture
  - \* 16.4 million acres are range, pasture and hay land
- ◆ 1.81 million head of beef cattle
  - \* Rank 4th in total economic value behind soybeans, wheat, and corn at \$894 million
  - \* Hay production ranks 6th at \$326 million

## **Tourism #3 Industry in North Dakota** (ND State Government 2019)

- ◆ \$3.0 billion per year
- ◆ Much of these dollars are driven by recreational activities associated with our natural resources

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# NDSU | Central Grasslands Research Extension Center

## AgroBiome

### Increase Biodiversity and Sustainable Forage for Livestock on Range and Pasture Lands:

#### 1. Add value to our grazing lands through enhanced grazing efficiency

- a. Our research has shown a 10% increase in harvest efficiency with our new management strategies. This adds value to our grazing land by 35-40% (~\$30/acre increase)
- b. If we improved just two million acres (12.2% of the state range and pasture land), we would add \$60 million per year to the our livestock producers

#### 2. Add conservation value by increasing habitat for wildlife and pollinators. These studies have:

- a. Reduced exotic cool-season grasses while increasing plant diversity
- b. Created scientific outputs that can be used when developing new policies related to threatened and endangered species
- c. Enhanced soil health

## Precision Agriculture

### Improve Cattle Selection and Increase Grazing Efficiency:

#### 1. Add value to the animal in terms of genome selection, feeding efficiency, and fetal programming

## Forages

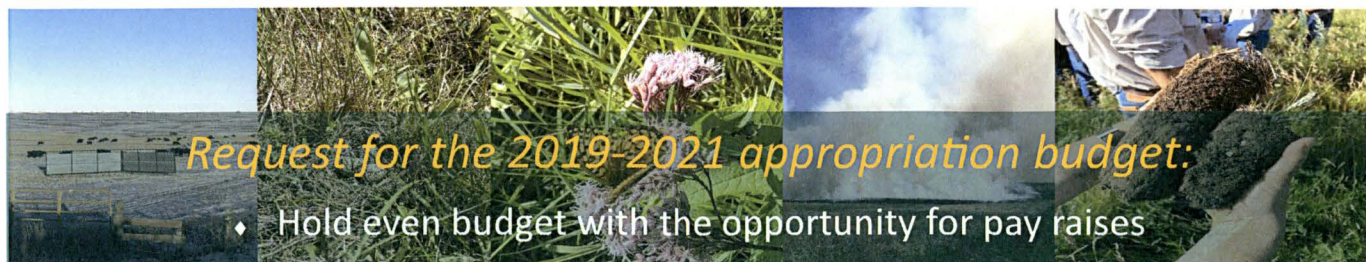
### Improve Forage Production, Quality and Late-season Grazing Options:

#### 1. Assess late-season grazing and forage systems

- a. Improve economic efficiency through reduced fossil fuel use, reduced labor, reduced depreciation to equipment, and add value to the land
- b. Enhance soil health characteristics and microbial populations

## Livestock Nutrition and Reproduction

### Improve Reproductive Efficiency through Studying Enhanced Feeding Programs to Increase Economic Return to the Rancher.



*Request for the 2019-2021 appropriation budget:*

- ◆ Hold even budget with the opportunity for pay raises

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**Testimony for the NDSU Dickinson Research Extension Center**  
**Submitted by Christopher Schauer, Interim Director Dickinson Research Extension Center**  
**Senate Appropriations Committee**  
**March, 20 2019**

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Members of the committee, for the record, I am Christopher Schauer, Interim Director of the Dickinson Research Extension Center. I have been the Director of the Hettinger Research Extension Center since 2006, and recently accepted the interim position at Dickinson following Dr. Kris Ringwall's retirement in November.

While the length of my interim appointment is unknown, it is my responsibility to begin the visioning process for the future of the DREC. This process occurs at all of the RECs, but with a transition in management, it gives the DREC Advisory Board, staff, and the agricultural community an excellent opportunity to look to the future of agriculture and how the DREC can be influential. But, in order to know how to proceed, I think a little review of history is important. The Dickinson REC, similar to all RECs, has a diverse history. It was founded in 1905, after failing in 1903 due to "eastern ND pressure", and is the oldest REC in ND. *As a side note, it is important to remember the requirement for establishing an REC in the early 1900's. The legislative requirement for establishing an REC in 1905 was a 160 acre donation of land to the ND Agricultural Experiment Station. Imagine what the equivalent donation would be today. It is humbling to think about our role today in a process that began during a time period of state hood and the founding of communities (1881 for Dickinson, and 1907 for Hettinger).* The original work at the DREC focused on forages, grains, cattle, sheep, pigs, fruit, poultry, and even turkeys. Over time, the focus of the DREC has concentrated into Agronomy, Range Science, and Beef Production, with an additional emphasis on running the CHAPS program, a software and reporting system for cattle producers. In the coming months, I will be meeting with the Advisory Board, staff, and constituents to begin the long term visioning process for the DREC. Here are a couple of items we will be talking about:

- Recently the Agronomy program lost their lead Agronomist, Patt Carr, and now only have support staff and the Extension Agronomist, Ryan Buetow. We have an excellent Agronomy staff, but due to budget constraints and the resignation of the former Agronomist, the DREC Advisory Board will be deciding if Agronomy is a program they would like to bring back to full strength, and how to accomplish that mission.
- The CHAPS program has been run by Kris Ringwall as part of his Beef Extension appointment, but has been heavily subsidized by the DREC staff. In 2016 the ND Beef Cattle Improvement Association, where CHAPS started, voted to turn the program and management over to the NDSU Extension Service. This was a seamless transition when Dr. Ringwall was at Dickinson, but the Extension Service as a whole was not involved in that transition. However, with Dr. Ringwall departure, a complete transition of CHAPS to the Extension Service is necessary. A transition team has been put in place, chaired by Dr. Charlie Stoltenow, with a goal of officially transitioning CHAPS to the Extension Service by January 1, 2020. Additionally, we are finishing up a new software program with an anticipated release date of April. All of these potential changes in CHAPS are exciting, from an outsiders point of view, because I believe this is an opportunity to truly look at the long term vision of CHAPS within the Extension Service, vs. continuing with the status quo of calve the cows, enter the data, and generate reports.

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- Related to Dr. Ringwall's departure is a funding issue for the DREC Director. Kris had a 50% appointment in the Extension Service as a Beef Specialist. With his retirement, that portion of his position was lost, and a long term funding model for a full time Director is needed. Only having half of the Directors salary in the budget is one of the reasons I am an Interim Director while maintaining my current position in Hettinger – we simply can't afford to hire a full time director. This is needed, as the Director of an REC is far more than just administration – they are the Research Leader and provide vision, research, grant writing, and should be the model for the scientists to follow. A part time Director cannot accomplish all of these duties.
- The remaining 2 programs, beef and range management have 2 scientists in place; Mr. Doug Landblom and Dr. Lee Manske. Doug is focusing his research efforts on integrated livestock grazing systems using annual forages in stocker cattle management. Lee is evaluating soil inorganic N and soil microbial biomass in rangeland systems, specifically comparing season long grazing and twice-over ration grazing systems. Both of these programs are likely to be important to the DREC, but part of the visioning process will be discuss new issues in these fields and projects that can address producers concerns.
- Given the issues at hand, the budget reductions proposed by the House would be devastating to the DREC. The current proposal would be an effective 7.7% cut to the DREC budget. Combined with the previous biennium, we would have been cut over 21% since 2017. However, we appreciate the discussion on raises for REC staff. Staff morale is an important issue, and providing raises in the coming biennium would go a long way towards improving moral.

In closing, while an Interim Director will not be able to see the process through very long, I hope to be able to begin to establish the ***Culture, Leadership, and Reputation*** that will be needed in the future for the next Director to be successful. The DREC was founded in 1905, and it has changed dramatically through time – it is time for that type of change for the next 100 years.

Thank you for your time.

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# Hettinger Research Extension Center

## Hettinger REC Research in Brief

- Integrated crops, livestock, and range research and extension
- Variety, herbicide, and crop production research
- Lamb and beef feedlot nutrition and management
- Reproductive management of fall, winter, and spring lambing ewes
- Multiple-land use management including cropping systems, livestock, and wildlife as potential outputs
- Livestock Extension and applied calf backgrounding

The **Hettinger Research Extension Center (HREC)** was established from a gift of 160 acres by the residents of Adams County and the city of Hettinger in 1909. Currently, the HREC owns or rents nearly 5,000 acres of land, primarily in Adams County, ND, for the purpose of research in weed science, agronomy, range and wildlife science, and animal science. The HREC also lambs over 1,000 sheep and calves close to 100 cows. Currently, we have 13 full-time employees including 4 PhD and 1 M.S. level scientists and extension specialists, 3 research technicians, and 5 support staff.



Research at HREC involves the disciplines of animal science, range and wildlife science, agronomy, and weed science. Collaboration is with Main Station scientists, Branch Station scientists, U.S. Forest Service, grazing associations, university scientists from WY, SD, and MT, and USDA research entities in these research disciplines to improve the productivity of livestock and cropping systems and economic development of the region. Through these efforts, the center's research program has gained a national reputation for its involvement with sheep production systems as well as a strong regional and state reputation for its research in agronomy, multiple-land use, and calf backgrounding.

The HREC annual publishes at least 5 refereed journal articles as well as extension articles and lay reports while bringing in over \$300,000 in grants and contracts. In the past year, staff have given over 60 invited presentations, and have former graduate students across the nation in multiple universities in both Extension and Research.

### AGRONOMY

- Conducted crop variety and hybrid yield trials for 21 different crops at Hettinger along with off-station small grains trials at 4 locations.
- 12 preliminary yield trials/nurseries for wheat, pulse and canola breeding programs.
- Evaluation of carinata, an oilseed mustard like canola, for adaptation to western ND for use biofuel production. This crop looks promising with yields of carinata being competitive with hybrid canola and having fewer problems with seed shatter.
- 10 agronomic studies, including seed treatments, soybean & durum planting dates, spring wheat nitrogen timing, and spring wheat seeding rate.

### WEED SCIENCE

- Evaluation of pre-emergence and post-emergence herbicides for weed control and crop tolerance for SW ND.
- Evaluation of fall-applied herbicides for weed control and crop tolerance.
- Options for post-harvest weed control.
- Management of noxious and troublesome weeds in pasture and rangelands.
- Cover crop tolerance to carryover of herbicides applied to spring wheat.
- Contributed to NDSU Weed Control Guide.
- Publish Crops Day report.

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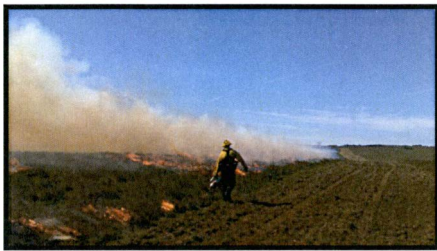
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# HREC Crops, Weeds, Livestock, and Range

## RANGE and LIVESTOCK SCIENCE

- Using annual forages to provide forage for grazers and resources for pollinators and a state-wide assessment of pollinator populations.
- Evaluate the ecological effects of integrating livestock herbivory and annual forages into a winter wheat cropping system.
- Patch-burn and sheep/cattle grazing on post Conservation Reserve Program land.



- Evaluated supplementation strategies during pregnancy and their effect on embryonic death loss, fetal development, and potential feedlot and reproductive performance of offspring.
- Evaluation of feeding and supplementation strategies that impact ram fertility.
- Evaluation of pain relief during castration/docking on physiology and behavior of lambs.
- Conduct the Dakota Fall Performance Ram Test; a 140 day Rambouillet Certificate of Merit program, one of three Rambouillet Ram Tests in the nation.

## OUTREACH and EXTENSION

- Conduct annually the HREC Beef Day, Sheep School, Shearing and Wool Classing Schools, Carcass Ultrasound School, Crops Tours, Crops Day, and Soil Health and Wildlife Workshops.
- Analyze wool samples for fiber diameter using an OFDA Fiber Analyzer.
- Invited speaker at NCBA on fetal programming.
- Annually deliver over 30 presentation to 800 livestock producers.

## ISSUES FACING THE HREC

- Raises would increase staff moral.
- The current proposal would reduce the HREC budget by 6.5%, totaling 20% since 2017. The result would be the loss of permanent technicians in the research programs - they are necessary for conducting research. Alternatively, scientist spend their time writing grants to fund technicians, at the expense of research.
- Deferred Maintenance is over \$1 million. Currently our parking lot is squirting mud the consistency of chocolate pudding. Additionally, the graduate student bunkhouse is in dire need of a remodel to meet fire code. These 2 project alone total over \$350,000.
- The Microbiome and Precision Ag SBARE initiatives are areas of research that we can support with our current staff if NDSU was funded to expand these efforts.



### HREC Research Faculty

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**NDSU**

HETTINGER  
RESEARCH EXTENSION CENTER

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# NDSU Langdon Research Extension Center ND Senate Appropriations Committee Report March 20, 2019

## Langdon REC 2017/19 Budget (Reduction) Report

- \$250,000 (13.5%) in cuts were implemented.
- Lease One Less Quarter (\$30,000), Return Six State Fleet Vehicles (\$38,000), Hire Five Less Summer Employees (\$47,000), Eliminate 1 FTE (\$100,000), Reduced Overtime (\$15,000), Travel Restrictions (\$18,000).
- Research Activity at Langdon was Reduced by 15 percent.



## Langdon REC Current Core Research Programs

- Traditional **Agronomy** research program on all crops grown in our cool wet region with an emphasis on canola. **New Activity—Emerging Crops Research on Hemp & Legumes.**
- **Plant Pathology** research program focusing on diseases of all crops in North Dakota. **Recent High Priority—Canola Clubroot, Bee Vectoring Technologies.**
- **Foundation Seed** providing regional growers with superior NDSU crop varieties. **New Activity— Soybeans, Legumes, Plant Improvements.**



## Langdon REC Extension Programs

- **Agronomy Specialist** prioritizes agent training, grower questions and IPM surveys in NE ND.
- **Soil Health Specialist** prioritizing agent training, soil health education, grower questions, soil sampling, soil sample analysis and alternatives for soil health remediation.



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# NDSU Langdon Research Extension Center ND Senate Appropriations Committee Report March 20, 2019

## Langdon REC 2019/21 Budget Priorities

Hold Even Budget Scenario. **Further Cuts Will Reduce Either Agronomy or Pathology Research Efforts for Lack of Personnel.**

Support for the NDAES Initiatives as Prioritized by SBARE.

Support for the NDSU Extension Initiatives as Prioritized by SBARE.

Long Term Continuation of SBARE.

Employee Salary Enhancement and Full Medical Insurance Coverage.

## Capital Requests

Support for Capital Projects Priority as Identified by SBARE.

## Langdon Seed Cleaning Plant Update

- 1) Pit Improvements/New Grain Moving Leg.
- 2) Bin and Seed Cleaning Plant Equipment Upgrades.
- 3) Adding Soybeans and Other Legumes to Foundation Seed Production.
- 4) Safety Upgrades.



Old Holding Bin—Result of Failed Concrete



New Bins for New FSS Enterprise (Soybeans)

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Testimony to North Dakota Senate Appropriations Committee  
North Dakota State University  
North Central Research Extension Center, Minot, ND  
April 2019

Mr. Chairman and Members of the Committee: Thank you for the opportunity to address this committee. I am Shana Forster, director of the NDSU North Central Research Extension Center (NCREC) located near Minot, ND. This is the second time I have the pleasure of discussing the NCREC with the ND legislature, having assumed the center director role in April 2016. I have been a dedicated member of the team at the NCREC having held previous roles within both the ND Agricultural Experiment Station (AES) and NDSU Extension.

When House Bill 66 was passed in 1945, establishing what is now the NCREC, it stated "...Agricultural Station and State Seed Farm...shall make experiments with grains and grasses...and shall become a center for the increase and dissemination of purebred seeds... and further inure to the benefit of the agriculture of North Central North Dakota and the State of North Dakota." The NCREC maintains these core missions today, which include agronomy research, pulse crops breeding, Extension education, Foundation seed increase, weed science research, and the winter hardy grape program.

The people of ND own the largest seed company in the US. The NCREC Foundation Seed effort is one of several such efforts in the AES system to maintain foundation class seed for distribution to the ND agricultural industry. The 2015-2017 ND Legislature provided the NCREC \$750K in order to purchase seed conditioning equipment and we have purchased the needed seed conditioning equipment. A fundraising effort was initiated to complete the project. The main building project was awarded and the new seed conditioning facility will be completed in the spring of 2019. The NCREC Foundation Seed program mission is to provide the best, pure genetics to ND producers.

Resources are needed to fully fund the NCREC director's salary in order to maintain current staffing levels and research projects. With the resignation of the previous Center Director, the NCREC did not receive any additional funds for the Directors salary when the position was reclassified. The same salary deficiency scenario currently exists within the Dickinson Research Extension Center.

Proposed funding cuts to the NCREC will result a complete reevaluation of current programs. After adjusting to the previous cuts last biennium, we have not filled vacated positions. Any additional cuts would result in changes to existing programs and further impact workload and morale.

I extend my thank you to this committee and the entire North Dakota Legislature for your support of the NCREC, NDAES, NDSU Extension, SBARE Initiatives, and NDSU.



Shana M. Forster, Director  
North Central Research Extension Center  
5400 Hwy 83 S (701) 857-7679  
Minot, ND 58701 shana.forster@ndsu.edu

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3-20-2019  
pg 1

**Testimony to North Dakota Senate Appropriations Committee: HB1020**

March 20, 2019

Testimony associated with the  
Williston Research Extension Center (WREC)



# 12 HB 1020  
3-20-2019  
pg 2

March 14, 2019

To: Senate Appropriations Committee Chairman Ray Holmberg

RE: Seed Cleaning Facility at NDSU Williston Research Extension Center

Chairman Holmberg,

I am Tom Wheeler, Chairman of the Joint Advisory Committee of Williston Research Extension Center and Eastern Agricultural Research Center. The seed cleaning facilities in Williston, Minot, and Carrington were all outdated.

Two sessions ago, Minot and Carrington were each appropriated \$750,000 from the North Dakota Legislature and were authorized to raise the remaining money to build new facilities.

Last session Williston Research Extension Center received authorization to begin raising funds toward a \$1.5 Million seed cleaning facility. At that time, we did not ask for funding and none was appropriated to Williston Research Extension Center

In the early planning stage \$1.5 Million was thought to be sufficient to build a new facility. With the rising costs, we feel the need to raise our campaign to a \$2.25 million goal. The Bakken Premium also adds to the final number. We are asking to raise our authorization to \$2.25 million for the seed cleaning facility.

We have begun in earnest raising money toward our upgrade to replace the cleaning facility built in 1954. Besides small grains a new facility will give us the ability to clean pulse crops and other specialty crops. The technology of an optical color sorter adds numerous capabilities.

We have a written commitment of more than \$300,000 contingent upon receiving a \$750,000 appropriation from the state of North Dakota. We also have another \$250,000 committed. The WREC is well on the way to our goal. If this legislature would appropriate WREC \$750,000 for the seed cleaning facility, I will not be back asking for any more money. We will complete reaching our goal ourselves.

Thank you for your consideration,

  
Thomas Wheeler

# 13

HB 1020  
3-20-2019  
Pg 1

January 30, 2019

To whom it may concern:

In an earlier letter, our group wrote in support of a return to full funding for agricultural research in North Dakota and particularly for North Dakota State University's Williston Research and Extension Center (WREC). At that time, we noted the **large, long-term net returns provided by agricultural research to the North Dakota economy and its citizens**. In particular we pointed to several studies showing that investments in agriculture pay off in returns of as much as \$25 for every dollar invested (recent NDSU economists study). Other studies show returns of \$10 to \$38 for every dollar. Obviously agricultural research more than pays for itself.

Given that agriculture is also the leading revenue-producing industry in North Dakota, accounting for about one-fourth of the state's economic base, it doesn't make sense to make indiscriminate cuts to the program. In fact, it makes much more sense to add to the infrastructure available, which is why we are writing in support of the addition of new seed conditioning and multi-use greenhouse facilities at WREC.

WREC enjoys close partnerships with Montana State University's Eastern Agricultural Research Center (EARC) and our USDA Agricultural Research Service (ARS) Northern Plains Agricultural Research Laboratory, both in Sidney, MT. Our "**MonDak Agricultural Research Triangle**" allows us to avoid duplication of research efforts and leverage expertise and equipment from all three entities for various individual as well as joint research projects and grants. That means the addition of new facilities - such as the proposed seed conditioning facility and multi-use greenhouse facility at WREC – are even more beneficial for producers in western North Dakota and eastern Montana than might otherwise be true.

The addition of a new seed conditioning facility can provide value-added seedstock for local producers of small grains, pulses, oilseeds and other crops grown here, while a new multi-purpose greenhouse allows for additional greenhouse research on agronomic and disease issues in crops of importance to both western North Dakota and eastern Montana.

Proper seed conditioning and handling ensures that new varieties of crops grown in this region will meet the highest purity standards, which ensures producers a good stand and a quality product, no small feat in this semi-arid region. Buffeted continually by forces outside their control (weather, global trade, price, input costs, etc.) producers in western North Dakota and Eastern Montana need ag research and specialized facilities like those proposed in order to turn a profit and feed the world.

The outstanding partnership we share with WREC is evidenced by several joint projects now underway, including one investigating the effect of crop rotation on *Rhizoctonia solani* AG 2-2 soil populations. WREC Plant Pathologist Audrey Kalil has also initiated similar collaborations on economically important diseases of pulse crops and Fusarium Head Blight, a critically important disease of durum, wheat and barley. Additional greenhouse research space for this and other projects are of critical value to producers, particularly in this region as we're far removed from either state's major universities in an area with very different precipitation patterns, soil types and more. The latter results in unique challenges for producers here, meaning additional localized research is sorely needed, research that WREC and its MonDak partners can provide if given the necessary resources.

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Continued cuts in ag research funding just don't make sense, and merely holding the line is little better, particularly when **our global competitors are currently increasing their public support of ag research at a brisk pace.** In the past decade, China, our biggest customer for farm exports, has been increasing its governmental support for ag research while U.S. public funding has stagnated and declined to the point where **China now spends more than twice what we do on ag research.**

Our ARS Customer Focus Group in Sidney, which includes more than 80 farmers and ranchers and representatives from various ag industries and organizations across our two-state region, recognize the value of agricultural research to our industry and the economies of our respective states. (Note: Several of our members also serve on advisory groups for WREC and EARC.) We know from experience that investments in research AND research facilities pave the way for the future, particularly in agriculture. It's what prompted us to fight for our own new facilities – a new lab office complex, greenhouses and biocontainment facility at Sidney-ARS and a new lab, office and Extension complex at MSU-EARC. Consequently, we respectfully request that the ND Legislature also look to the future by providing **significant financial support for the WREC capital campaigns for construction of a new seed cleaning facility and multi-use greenhouse.** The benefits of doing so far outweigh the costs.

Respectfully submitted on behalf of the Sidney ARS Customer Focus Group by:

Connie Iversen, Focus Group President and MonDak area farmer/rancher  
406-798-7770, [nji@midrivers.com](mailto:nji@midrivers.com)

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3-20-2019  
Pg 1

March 14, 2019

To: Senate Appropriations Committee Chairman Ray Holmberg

RE: Seed Cleaning Plant at NDSU Williston Research Extension Center

Greetings,

On behalf of The Joint Williston Research Extension Center and Eastern Agricultural Research Center Joint Advisory Committee: I express our Advisory Committee unanimous support in the request for the North Dakota State Legislature to appropriate \$750,000 towards a new seed cleaning plant at the NDSU Williston Research Extension Center.

1. The existing plant is limited in capabilities and totally not designed to prepare pulse crop or specialty crop seeds.
2. Cropping patterns in the region have exploded with diversity in the last 10-20 years. The recent 5 years has demonstrated a phenomenal increase of cropping diversity.
3. New and adapted varieties offer grain producers improving opportunities to enhance soil health and increased profitability. The total dollar impact needs to be estimated by professionals other than our committee.
4. Increased volume of specialty and traditional seeds will add tremendous income to the WREC. A private seed business would consider going in debt to build this profit center.
5. WREC has the oldest seed cleaning plant out of all other research extension centers and cleans approximately 40,000 bushels of seed each year (please see attachments).
6. The Carrington Research Extension Center and the North Central Research Extension Center were appropriated \$750,000 in state funds from the North Dakota State Legislature this past legislative session.

Thank you for your careful attention.

Regards,

  
Wayne Berry  
WREC-EARC Joint Advisory Committee

#15

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3-20-2019

MSI



March 14, 2019

Senator Ray Holmberg  
 Chairman  
 Senate Appropriations Committee  
 600 E. Boulevard Avenue  
 Bismarck, ND 58505

RE: Support for Legislative approval to provide funds for a new seed cleaning facility at the NDSU Williston Research Extension Center.


There is a critical need for the NDSU Williston Research Extension Center to receive funding to build a new seed cleaning facility with superior horizontal handling and seed cleaning equipment including optical (color) sorters to condition and distribute pure seed of new value added small grain, pulse crop, oilseed and other specialty crop varieties to our western North Dakota producers.

The current pure seed conditioning facility at WREC was built in 1954, making it the oldest and most outdated seed cleaning facility at the Research Extension Centers and limits WREC to cleaning only a maximum of 35 bushels per hour. It also is not suitable for cleaning pulse crops and other crops that require gentle handling and horizontal seed cleaning equipment and lines.

Because of their increased land base of 2,000 acres, WREC will be able to produce an estimated 40,000 bushels of high quality pure seed of new and superior value-added crop varieties including pulse crops and other specialty crops with a new seed cleaning facility and support more value-added processing facilities in our region. This is a prime time to fund this capital improvement at WREC to support more value-added production and manufacturing in western North Dakota.

As we strive to further diversify our economy in western North Dakota, we fully support the efforts of WREC. The City of Williston STAR Fund has committed a \$250,000.00 grant towards the construction of this facility.

I thank you for your special attention and consideration to provide one-time funding for a new WREC seed cleaning facility.

Sincerely,  
  
 Shawn Wenko  
 Executive Director  
 Williston Economic Development

# 16

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Letter of Support  
Senate Appropriations Committee  
March 14, 2019  
By the Williams County Board of Commissioners

Re: House Bill no. 1020

*A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota state university extension service, northern crops institute, upper great plains transportation institute, main research center, branch research centers, and agronomy seed farm.*

Mr. Chairman and members of the Committee:

Please accept this letter provided by the Williams County Board of Commissioners as an indicator of support for an appropriation of \$750,000 towards a new seed conditioning facility for the Williston Research Extension Center (WREC).

To provide the best opportunities to compete and be successful in today's agricultural market, the citizens and agricultural producers of Williams County deserve to have access to safe, modern, and efficient technology.

The WREC is currently operating the oldest seed conditioning facility at an Extension Research Center in the state of North Dakota. Construction and operation of a new facility will help to diversify and increase the varieties of seeds that can be cleaned, provide a safer work environment for employees, and increase the availability of public seed varieties.

Benefits of a new facility will be reaped far beyond the boundaries of Williams County as it will provide farmers with a more superior seed product to grow marketable crops. Since agriculture is a crucial part of Williams County's economy, it is essential that our producers are well-equipped with premium crop genetics and able to remain competitive on a global scale.

Sincerely,

A handwritten signature in black ink that reads "David Montgomery".

David Montgomery  
Chairman, Williams County Board of Commissioners

**BOARD OF COMMISSIONERS**

First District – Beau Anderson | Second District – Steve Kemp | Third District – Cory Hanson  
Fourth District – David Montgomery | Fifth District – Barry Ramberg

PO Box 2047 | 206 E. Broadway | Williston, ND 58802-2047 | Phone 701.577.4500 | Fax 701.577.4570 | [www.williamsnd.com](http://www.williamsnd.com)

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March 14, 2019

North Dakota Senate Appropriations Committee

Chairman Ray Holmberg

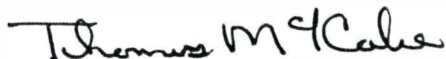
RE: Seed Cleaning Facility at NDSU Williston Research Extension Center

Chairman Holmberg,

The McKenzie County Commission is in strong support of appropriating \$750,000 towards the Williston Research Extension Center's efforts in upgrading their seed cleaning facility. The current facility which was built in 1954 has served the community and state well but is in need of an upgrade. Besides small grains, a new facility will provide the ability to clean pulse crops and other specialty crops.

We understand that the extension centers at Minot and Carrington were each recently appropriated \$750,000 from the North Dakota Legislature. As you know the agriculture industry is an important part of our county's and state's economy and feel that this facility serves an important role in making sure we keep up with agricultural needs.

Thank you for your consideration,



Thomas McCabe

Chairman, McKenzie County Commission

**BOARD OF COUNTY COMMISSIONERS  
DIVIDE COUNTY, NORTH DAKOTA  
P.O. BOX 49 CROSBY, ND 58730**

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#18

HB 1020

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Ag 1

March 14, 2019

Chairman Ray Holmberg  
North Dakota Senate Appropriations Committee  
Bismarck, ND 58501

Dear Chairman Holmberg,

The Divide County Commission is writing this letter in support of the effort and the need for a new seed cleaning facility at the Williston Research Extension Center.

The WREC is crucial to the success of farmers in all of Northwest North Dakota. The current facility dates back to 1954. It is worn out and not capable of handling the volume necessary as well as new pulse crops being grown. There are so many changes in farming with the addition of pulse crops to the farmers rotation. A new facility will better handle the many different crops now being grown along with the cereal grains.

Farming remains a major component to the North Dakota economy and the WREC provides the research and development of new seeds to help farmers in our State.

Yours truly



Divide County Commissioners

---

GERALD BRADY

DOUGLAS GRAUPE

TIM SELLE



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MJ1

March 14, 2019

The Williams County Crop Improvement Association (WCCIA) greatly appreciates the work of all personnel at the Williams Research Extension Center (WREC) and strongly supports the funding of a new seed cleaning facility at the WREC:

1. The WREC provides the WCCIA with Foundation seed from the latest NDSU varieties to our farmers and producers.
2. In 1956 the WREC cleaned less than 10,000 bushels. This number has now grown to well over 40,000 bushels.
3. A new seed cleaning facility that will provide a larger handling capacity, up-to-date technology, a horizontal equipment layout, and an adequate dust ventilation system is greatly needed to replace the existing facility.
4. The existing seed cleaning facility, built in 1955, has multiple levels, some of which can only be accessed by stairs/ladders. The capacity of this facility is currently only 35 bushels/hour. The new facility, which would be a one-floor structure, would be safer for employees to work in and would have a handling capacity of approximately 200-300 bushels/hour.
5. The current facility is limited in its ability to process a diverse number of crops. The new facility would be able to meet modern needs by being able to clean pulse crops and other specialty crops that require different/gentler methods of handling.

We thank you in advance for your consideration to fund a new seed cleaning facility at the WREC!

Regards,



Lucas C. Holmes

NDSU ANR Extension Agent



Ryan Davidson

VP – NDCISA

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3/14/2019

To Whom It May Concern,

My name is Cameron Wahlstrom, I am 32 years old, a 2009 NDSU graduate with a bachelor's degree in Crop and Weed Science, a Certified Crop Consultant, the McKenzie County Soybean Representative for the ND Soybean Council, President of the McKenzie County Crop Improvement Association, Director for McKenzie Electric Coop, and currently serving on the Alexander Public School Board. I am a lifetime resident of Alexander, ND, married with two children and a 4<sup>th</sup> generation farmer in McKenzie County. Farming and owning the same land that my great great grandfather homesteaded in the late 1890's. So one could say I am very invested and passionate about this area and what I do. Which leads me to why I am writing this letter.

I am very concerned and frustrated with the lack of financial support the Williston Research Extension Center has received for a new seed conditioning facility. It appears that the further away one is from Fargo and the eastern side of the state, the harder it is to get funding. Just another example of west vs. east mentality. I feel this way because when you look at the location of the Williston Research Ext. Center in relation to the crops grown around it, in its region, it is probably one of the most important extension centers for the state land grant university due to the diversity of crops grown and the quality of seed harvested. The WREC currently farms 2,000 acres of land where it produces over 40,000 bushels of foundation quality seed. However, due to the fact that the current seed cleaning facility was built in 1955 and has an existing capacity of 35-50 bushels per hour, they cannot clean all of their own seed and have to have the majority of seed cleaned by a private mobile seed cleaner. I see this as a sad display of what WREC, NDSU, and North Dakota, as an agricultural state, stands for. The WREC should be leading the state when it comes to seed cleaning facilities, not falling behind by using over half century old equipment and building facilities. If we, as an agricultural state, want the Ag producers, farmers, ranchers, and our neighbors to prosper and have the best provided to them, then we as a state need to invest back into what makes this state great, which is agriculture. What better investment than having a research center in our region, offer a state of the art cleaning facility. If this investment were to happen for WREC, they would be able to serve and provide for the whole western region of North Dakota along with eastern Montana with quality foundation seed.

Finally, I'm not sure who will be reading this letter, but I hope that they can use some common sense and put politics aside to get the Williston Research Extension Center the money for a seed conditioning facility that it and the whole western part of the state rightfully deserves. After all, since the Carrington Research Extension Center and the North Central Research Extension Center received funding during the last legislative session, I would expect there to be no hesitation to provide the funding to Williston.

Sincerely,



Cameron Wahlstrom  
President / McKenzie County Crop Improvement Association



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Pg 1

2002 Northern Plains Drive Bismarck, ND 58504

Phone: 701-530-0734

Fax: 701-530-1826

North Dakota State Senate  
Senate Appropriations Committee

March 14, 2019

Honorable Chairman and members,

We (Pulse USA) are writing in support of NDSU WREC and the value a new seed cleaning plant will contribute to WREC and the private sector agricultural companies and growers that work with them. We, as a seed company, and our seed growers rely on facilities like WREC for seed multiplications and expansions to commercialize new and highly competitive varieties and they are an important link making seed accessible to North Dakota farmers. These efforts contribute to the competitiveness of North Dakota companies, growers, and farmers.

The current facility is antiquated, inefficient and labor intensive. A more efficient and better-quality facility will further WREC's endeavor to self-fund significant portions of their agricultural services. The current cleaning capacity of 35 bushels per hour is insufficient for the scale of operations WREC supports. This antiquated plant and design is also more damaging to sensitive crops like peas, lentils and other pulses.

We support and are committed to continuing to work with WREC on high pedigreed seed multiplication and the funding of a new plant would allow us to contract WREC to do even more work with our varieties. Research stations have a long history supporting innovative agriculture. NDSU WREC also helps bring the best technology to North Dakota growers and companies which increases their competitiveness and profitability. The continued updating of WREC and other NDSU research facilities is critical to advancing our industry and promoting the use of the forefront of agronomic practices and varieties.

Best Regards,

Emily Paul, Sales & Product Development Director



669 Hwy 5 • Flaxville, MT 59222

Phone 406-783-5510  
Fax 406-783-5515  
Info@cahillseeds.com

March 14, 2019

Honorable North Dakota Legislative members and staff,

This letter is in support of Williston Research Center to build a new seed cleaner for the research farm.

I am a Montanan producer from Scobey. I also own and operate Cahill Seed which is a regional retail and wholesale Seed Facility. The Eastern Montana and Western North Dakota area which we locally call MonDak is served by the research and services from both Williston and Sidney extension facilities. Each provides great service for our local producers.

One of the services is provided by Williston Research Center is Foundation Seed Stock to producers and our customers for certified seed production. For many years Williston Research Center has provided the essential link between plant breeders and North Dakota and Montana producers the seed stock to assist the MonDak producers the best genetics to compete on a global scale. This cannot be underestimated; our genetics is one of the greatest assets we have for our agricultural sector.

After the production of the genetics (the seed), the ability to clean the seed and keep its genetic integrity is paramount for the system to work properly. Part of that system is a high quality grain cleaning system. The current grain cleaning system in Williston does not meet those needs.

A letter can never truly express an opinion as well as a conversation; if any members of the committee and the staff would like to visit with me about the needs of Williston Research center, I would be glad to assist.

Jerry Bergman and Kyle Dragseth and other staff at Williston have and are great assets to our regional producers. I would suggest that providing the Staff at the Williston Research Center better tools to achieve their mission would serve our region and the great state of North Dakota.

Sincerely,

Charlie Cahill

Scobey, Montana

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**NDSU**

WILLISTON  
RESEARCH EXTENSION CENTER

March 20, 2019- Written Testimony

Chairman Holmberg and Members of the Senate Appropriations Committee,

I am Jerry Bergman, Director of the NDSU Williston Research Extension Center (WREC). I support the SBARE Recommendations for the North Dakota Ag Experiment Station (NDAES) and NDSU Extension for hold even budgets and support SBARE's priority capital improvement one-time funding request of \$750,000 for the seed cleaning facilities at the Williston Research Extension Center. The WREC Capital Campaign Committee also requests authorization for WREC to raise \$500,000 from other funds for a WREC Greenhouse.

With the House of Representatives HB1020 level of funding, the WREC budget will be cut an additional \$198,731 and will require WREC to cut two state general funded staff positions and will significantly decrease our dryland and irrigated research capabilities. Coupled with the \$418,260 budget cut in the 2015-2017 biennium, this additional cut of \$198,731 will result in a \$616,991 budget recession from the 2013-2015 WREC budget (20% budget recession).

Our current 5 floor vertical seed cleaning facility built in 1954 is antiquated and outdated with low seed cleaning capacity and not designed to condition pulse crops and other crops requiring gentle handling and conditioning. Our land base and yield potential for pure seed production dramatically increased in 2012 through a land lease with North Dakota Game and Fish Department of 1,184 acres of bottom land rich in organic matter and having high water holding capacity.

A new horizontal seed cleaning facility with innovative optical sorting technology and dust control system will not only improve our seed cleaning efficiency and address worker safety concerns but allow us to handle and condition pulse crops and other specialty crops of ever increasing importance in our dryland and irrigated cropping systems.

Dr. Audrey Kalil, our new WREC Plant Pathologist, initiated a new plant pathology program to evaluate the efficacy of fungicides, crop rotations, tillage practices and other IPM management techniques on reducing disease and pathogen populations. One area of her focus is the effect of different management practices on the naturally occurring beneficial organisms and the use of advanced molecular techniques to precisely quantify populations of soil-borne pathogens.

Audrey has been successful in obtaining grant funding for a pulse crop pest scout to serve northwest North Dakota, has assembled a new WREC plant pathology laboratory, and established collaborations with pathologists at the USDA-ARS, Montana State University, NDSU, and other REC's.

The Nesson Valley Irrigation Research Program continues to identify best soil and crop management options to enhance irrigated crop production, improve water use efficiencies, soil health, water quality, and best integrated pest management practices and cropping systems to manage crop diseases.

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The WREC Horticultural Research Program has initiated research on hops production and in the use of season extending high tunnels to expand local specialty crop opportunities for vegetables and cut flowers.

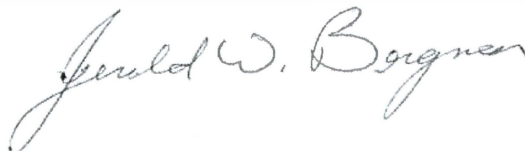
Other new projects include (1) a long-term pipeline reclamation project on WREC land to assess the economic input of the disturbed soils on crop performance and to demonstrate best reclamation treatments to restore crop yields and soil health in the disturbed soils and (2) a saline seep reclamation project in collaboration with the Montana Salinity Control Association to identify the recharge area and utilize salt tolerant grass mixes and alfalfa to reclaim the saline seep area.

WREC also established a one of a kind cooperative partnership with the Williams County Soil Conservation District (WCSCD) to construct a 60 x 100 cold storage/ equipment building at WREC for storing and distributing tree and nursery stock for spring plantings completed (in July 2017). WREC has been offered the opportunity to use the 20 x 40 ft. cooler for vegetable storage studies during the off season months.

Our WREC Extension Specialist, Dr. Clair Keene, conducted trainings with northwest county extension agents to build their agronomic knowledge of crop varieties and organized and assisted with outreach programming opportunities in the region: National Hard Red Spring Wheat Show, Pulse Day, offstation trials and tours, and field day events.

I thank you for your consideration of SBARE requests of a hold even budget for the NDAES main station, REC's, and the NDSU Extension Service and \$750,000 appropriations for the WREC Seed Conditioning Facility as well as authorization only for our WREC Capital Campaign to raise \$500,000 for a WREC greenhouse. Please see the attached letter from William Fortier, the President of the ND Rural Rehabilitation Board concerning a grant of \$300,000 for the WREC Seed Conditioning facility that is conditional that WREC receives \$750,000 from the ND Legislature this session.

Kind Regards,  
Jerald Bergman  
WREC Director



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# NORTH DAKOTA RURAL REHABILITATION CORPORATION

A Private Non-Profit Corporation  
222 SOUTH 12TH STREET  
MAILING ADDRESS: P.O. BOX 2485  
BISMARCK, NORTH DAKOTA 58502  
TELEPHONE: (701) 223-5810  
FAX: (701) 224-8061  
E-Mail Address: ndrcc@midconetwork.com

WILLIAM R. FORTIER  
PRESIDENT  
KENNETH L. DALSTED  
SECRETARY-TREASURER

TERESE BERG  
BUSINESS MANAGER

February 20, 2019

Mr. Jerald W. Bergman  
Director  
Mr. Tom Wheeler  
Advisory Board Chairman  
Williston Research Extension Center  
14120 Highway 2  
Williston, ND 58801

Re: Williston Research Extension Center  
Seed Conditioning Facility

Dear Mr. Bergman and Mr. Wheeler:

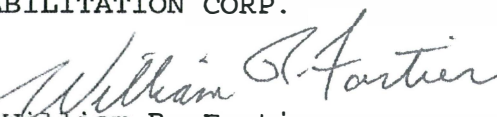
Thank you for meeting with the Board of Directors of the North Dakota Rural Rehabilitation Corporation recently.

I am pleased to inform you the Board has voted to grant \$300,000 to the Williston Research Extension Center for a new seed conditioning facility on the condition the Center receives the \$750,000 from the ND Legislature this Session. The grant funds will be distributed upon receipt of notice of action by the ND Legislature.

Please also note that effective October 19, 2017, it is the policy of the North Dakota Rural Rehabilitation Corporation to pay no indirect costs. See letter attached.

Good luck with this worthwhile endeavor.

Sincerely,  
NORTH DAKOTA RURAL  
REHABILITATION CORP.

By:   
William R. Fortier  
President

Enclosure

**LEGISLATIVE REPORT: NDSU AGRONOMY SEED FARM**  
**SENATE APPROPRIATIONS COMMITTEE**  
**Testimony by Brian Otteson, Director**  
**Bill No. 1020; Budget No. 649**  
**March 20, 2019**

# 25  
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Good morning, my name is Brian Otteson. I am the Director of the Agronomy Seed Farm at Casselton ND. The Agronomy Seed Farm is part of the ND Ag Experiment Station. We produce Foundation grade seed of public varieties for seed producers and farmers in ND. The seed farm is 100% self-supportive through its seed sales and does not ask for any general fund appropriations. It has operated that way since 1950 when the seed farm was started. I'd just like to thank you for your past support of our budget. I have provided written testimony available to each of you. I won't read through it, but would like to just ask for your support in approving our budget, and I'd be happy to answer any questions you might have. Thank you!

**Testimony:**

The Agronomy Seed Farm is part of the ND Ag Experiment Station network at NDSU. The seed farm began operating in 1950 after a fund drive was set up by the Crop Improvement Association to start a seed farm for the benefit of the seed producers and farmers in ND.

The Agronomy Seed Farm produces Foundation grade seed of public varieties of winter wheat, spring wheat, barley, oat and soybean. We typically grow between 25-35 varieties per year, but also carry over seed of an additional 15 or more varieties. Our land base includes approximately 1300 acres spread out between three locations, which are Casselton, Prosper and Fargo. Annual seed sales averages approximately 32,000 bushels per year.

Our primary mission is to produce an adequate supply of high-quality Foundation grade seed to the seedsmen of ND. However, we have other duties as well. Due to the close proximity of the Agronomy Seed Farm to the NDSU main campus, we provide support the main station scientists at NDSU who carry out Ag Research on numerous crops that are grown in the state. We share much of the same land with these research projects, especially the crop breeding projects since we are reliant on them to release new varieties that can be grown in the state by our farmers. The Agronomy Seed Farm supports research and outreach efforts that focus on the evaluation and development of new crop varieties. The seed farm is directly involved with the initial increase of new public varieties of wheat, barley, oat and soybeans. We work closely with the ND State Seed Department, NDSU Foundation Seedstocks, Plant Sciences and the ND Crop Improvement and Seed Association on the release of these new varieties. The Agronomy Seed Farm has three FTE's. This number has been constant for many years, probably since nearly the beginning of the seed farm. Our budget remains mostly unchanged with no major changes expected in the near future. Any increases usually come from pay increases or health insurance premium increases. We continue to operate well within our appropriations. Beyond our normal operating expenses each year, we continue to replace aging farm equipment along with seed cleaning equipment as our budget allows.

We have been fortunate to have some good crops lately, so our income has been relatively consistent. This has allowed the seed farm to remain on good financial ground and I do not expect that to change. We will continue to operate in a responsible manner within our appropriations.

Thank you for your time, and I'd be happy to answer any questions you may have.



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Testimony Prepared for the  
**Senate Appropriations**  
March 20, 2019  
By: Donnell Preskey, NDACo

**RE: HB 1020 Extension Service Funding**

Good Morning, Chairman Holmberg and Committee members. I'm Donnell Preskey with the North Dakota Association of Counties. We are here today to stand in support of House Bill 1020 and the funding of NDSU Extension Services.

The restoration of funding for NDSU County Extension services is a top priority for North Dakota Counties. Both the North Dakota Association of Counties and the North Dakota County Commissioners Association (NDCCA) have passed resolutions in support of the restoration of funding.

Here's some background on the state-county funding model.

The NDCCA board worked with Extension in 1998 to establish a uniform state/county funding split. The "base policy" was reviewed and updated in 2004 and in 2011. Up until last year, the counties paid 50% of professional salaries, and 100% of operating and support staff with the Extension budget supporting 50% of professional salaries and 100% of professional staff benefits.

Early in 2018, Extension met with a group of commissioners looking for options on how to best proceed given the state budget reduction. Recognizing the urgency, commissioners made a commitment to step up but also acknowledged this adjustment would be short-term. In March, the NDCCA Board of Directors voted to revise the extension base funding policy for calendar year 2019 only.

	Cost Share	Cost Share
	Prior to 2017	2019 - Calendar Yr
County	50% Extension Agent Salary 100% Office & Support Staff Expenses	40% Extension Salary+Benefits Combined 100% Office & Support Staff Expenses
State	50% Extension Agent Salary 100% Fringe Benefits	60% Extension Salary+Benefits Combined

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Mr. Chairman, it is important to note that the state budget reduction shifted approximately \$420,000 in Extension support to county property taxes by putting 40% of professional salaries and benefits on the county side of the cost share and leaving counties with 100% of the operating and support staff.

Prior to this temporary funding shift in funding, \$5.5 million in dedicated property tax levies as well as significant county general funds in support of indirect costs were used to fund the county portion of Extension.

Every year NDACo and NDCCA Presidents along with staff take a listen tour to a dozen counties. The funding of extension was a top concern at every county we visited. We heard about the important public service extension provides and also how counties were forced to make cuts to extension due to the pressure of this funding shift on top of their own tight budget constraints.

It is essential the state-county partnership in funding be returned to a more equitable balance to reduce the impact to our state's property taxpayers and preserve quality services in every county in the future.

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Testimony for  
Senate Appropriations  
Stan Dick, Cavalier County Commissioner  
3/20/19

RE: HB 1020 NDSU EXTENSION BUDGET

I'm Cavalier County Commissioner Stanley Dick giving a letter of support for HB1020. Our extension agent is a leading entomologist and does research that not only benefits Cavalier County but also the state of North Dakota in the area of soybean aphids. She has done independent studies to show which chemical groups work and which do not. She has given presentations on rotation of crop practices and how the life cycle of aphids affect all soybean production. As the leading County for canola production she also has done great research on the different insects that affect canola. The orange blossom wheat midge is another insect that has been studied and how it affects negatively the yield of our wheat varieties. These are just a few areas our extension agent educates us in production agriculture.

Our state is still primarily Agriculture and the knowledge extension agents have is invaluable. The information our agents share with each other and then share with us farmers reaps huge rewards for us. Their independence from any agricultural companies is so important in that no matter what subject is covered, we get independent and subjective oversight.

Our second Extension agent is a big leader in consumer sciences and helps fill in the gaps where are public schools don't have the time to teach. Knowing that production agriculture is the start of all our food is vital in the knowledge in our food chain. Projects like planting small plots at daycare centers, to identifying where milk comes from (cows and today even almonds) is educational for our next generation. The number of 4-H students is rapidly growing in our County. Projects they create and bring to completion teaches a sense of self-worth that is still needed in today's society. We value the role of our County Extension Agent, please continue to support this role by restoring the funding prior to the 2017 budget cuts.

Thank you,  
Stanley Dick

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Testimony for:  
Senate Appropriations  
March 20, 2019  
By: Charlie Adams, Bottineau County Commissioner

RE: HB 1020 Extension Service Funding

As a Bottineau County Commissioner, I am eager to provide this testimony in support of funding for the NDSU Extension service. The temporary funding that was put in place last year forced us to choose not to fund the family and community wellness agent. NDSU Extension was not be able to fund the position and we were left in a situation where we needed to leave the position open because our county couldn't afford to fund it 100%. This left a gap in service for our county and put more on the shoulders of our Ag agent, Sara Clemens.

A fully staffed Extension program for Counties offers the maximum service package to the people. 4-H is delivered by extension and the county's participation has been a wonderful thing. Keeping young people educated through programs like 4-H/NDSU Extension is crucial in investing in our future. Other benefits of the Extension program for our County's citizens are their role in new research, chemical spray drift mitigation, knowledge on farm program choices, expertise on nutrition and several other points that support the well-being of the public.

In addition to my County Commissioner duties, I am also the manager of an Ag retail facility in Mohall. I know that our customers rely on the NDSU Extension's agricultural research. The competition between many seed and chemical companies is intense and NDSU Extension's unbiased research is a valuable tool for farmers and ranchers.

Charlie Adams  
Commissioner, Bottineau County

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Testimony for:  
Senate Appropriations  
Prepared by: Lynn Brackel, Bowman County Commissioner  
3/20/19

RE: HB 1020 Extension Service Funding

Chairman Holmberg and committee members, my name is Lynn Brackel. I am a Bowman County Commissioner. Thank you for this opportunity to provide our support for HB 1020 and the funding for NDSU Extension Service.

In late 2017 and early 2018, the State Board of Agricultural Research and Education solicited citizen input on legislative priorities for this 66<sup>th</sup> legislative session. The board received a significant amount of testimony emphasizing the importance of Extension to North Dakota citizens and our agricultural sector economy. The great value of the local presence of Extension services was stressed by communities throughout the state. The value of these Extension services is also stressed by county commissions statewide.

From the perspective of most county commissioners, the services provide by Extension; from chemical application training to unbiased consultation; from the connection to research to the engagement of youth through 4H; are very important to counties large and small. The services and collaborations of Extension are critical to the future of agriculture in North Dakota.

Because NDSU Extension funding was reduced in the 2017-2019 biennium, Extension and the North Dakota County Commissioner's Association collaborated on a new cost share agreement to fund Extension Agents. Under that new agreement, counties agreed to increase their support by approximately \$820,000 on a statewide basis for the biennium. This is an additional expense that counties assumed at a time when counties themselves were seeing tighter budgets.

The willingness of county commissions to agree to the temporary formula change is a demonstration of how strongly counties support Extension and our agricultural sector. However, funding must be restored to the level prior to the 2017 state budget cuts as there is reluctance of commissioners to dedicate additional property tax funding over the long term.

Due to the vital importance of agriculture to our state, the legislature should adjust the funding of Extension Agents upward to again reflect a more equal financial partnership with counties. It is also very critical these budget constraints do not impact the quality of services provided in every county.

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EST. 1889

# North Dakota



## AG FACTS

**#1** IN FLAXSEED

**#2** IN ALL SUNFLOWER

**#1** IN PINTO BEANS

**#2** IN SUNFLOWER OIL

**#1** IN NAVY BEANS **#2** IN SUNFLOWER NON-OIL

**#1** IN ALL DRY BEANS

**#2** IN ALL WHEAT

**#1** IN PEAS

**#2** IN LENTILS

**#1** IN SPRING WHEAT

**#3** IN BARLEY

**#1** IN DURUM WHEAT

**#3** IN OATS

**#1** IN HONEY

**#3** IN SUGARBEETS

**#1** IN CANOLA

**#4** IN POTATOES

**#4** IN SOYBEANS



**9TH** IN BEEF CATTLE

**7TH LARGEST** AGRICULTURAL EXPORTING STATE

ND AG GOODS REACH OVER **100 COUNTRIES**

ND AG ECONOMY IS WORTH OVER **\$4.6 BILLION**

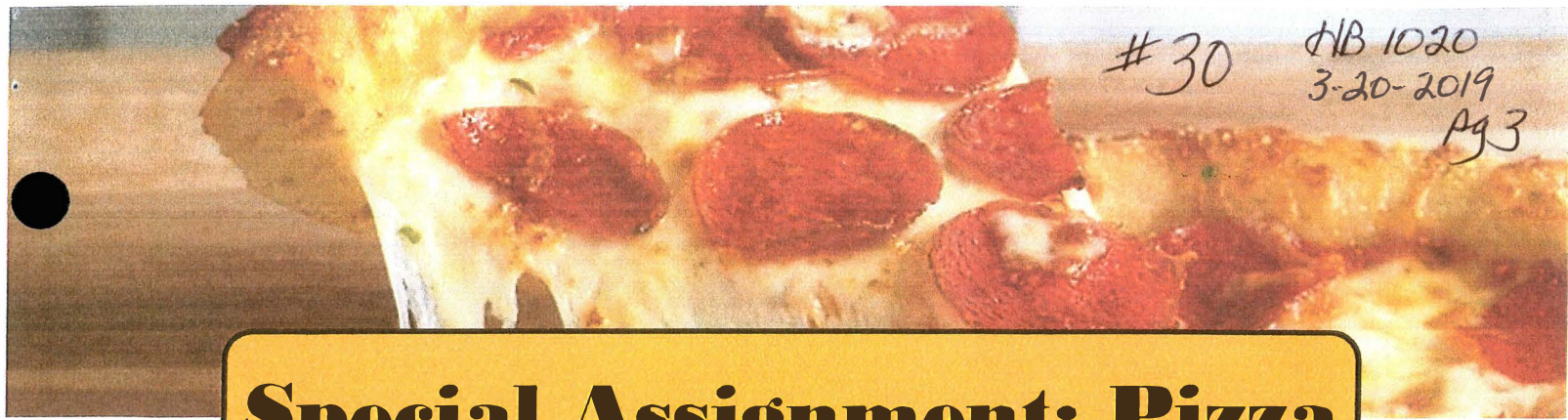
**90%** OF NORTH DAKOTA IS USED FOR FARMLAND

**1 IN 4** NORTH DAKOTANS WORK IN AGRICULTURE

# #NATIONALAGDAY

@holmbergforsenate





# Special Assignment: Pizza



**Bowman  
County 4-H**

**NDSU**

**EXTENSION  
BOWMAN COUNTY**

**Did you know that the ingredients for pizza can be grown on North Dakota farms?**

- ♥ **Beef/Pork**
- ♥ **Wheat**
- ♥ **Sugar**
- ♥ **Dairy**
- ♥ **Soil Health**

**Come learn about how pizza is made, eat some delicious pizza and dirt cups!**

**When: May 30, 2018  
9:45 a.m.-12:30 p.m.**

**Where: 4 Seasons Pavilion,  
Bowman County Fair-  
grounds**

**Who: Children who have  
completed grades K - 8**

**Registration fee: \$5.00  
Please register by May 21**

✂ Please detach this portion of the page and send it along with the \$5.00 registration fee by May 21 to:  
Bowman County Extension, 104 1st St. NW Suite #7, Bowman ND 58623.  
Checks can be written out to "Bowman County 4-H Council"

Child's Name: \_\_\_\_\_ Age: \_\_\_\_\_

Parent's Name: \_\_\_\_\_ Phone #: \_\_\_\_\_

Emergency Contact: \_\_\_\_\_ Phone #: \_\_\_\_\_



Good afternoon, Chairman Holmberg, members of the committee,

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My name is Wesley Frederick. I am a farmer/rancher from Flasher in Grant County. I represent Area IV on the State Soil Conservation Committee (State Committee) and serve as the State Committee's Vice Chairman. I am here today to testify in support of continuing the current funding level for the State Committee's District Assistance Program.

The State Committee plays a vital role in insuring our local Soil Conservation District's ability to deliver critical conservation programs; ensuring the best technical assistance is available when designing and implementing conservation plans with landowners; and most importantly, provide for the continued availability of the conservation practices that ensure clean water, healthy soils, and other benefits on which the public relies.

Each of you should have a brochure highlighting some of the conservation practices and programs conducted across the state, within the brochure it list the members of the State Soil Conservation Committee and an overview of the organizations structure.

I would like highlight two of the numerous changes that have occurred over the last year in regards to NDSU Extension's support and the function of the State Committee.

First, Bruce Schmidt was hired as our new Extension Soil Conservation Program Leader in November 2017. Funding for the position is shared with NDSU Extension and a US EPA 319 grant for Leadership Development. Bruce has brought a new perspective and energy to the State Committee and its fifty-four (54) local Soil Conservation Districts.

Second, a training program called Soil and Water Conservation Leadership Academy was developed in partnership with NDSU Extension, the Department of Health and the State Committee. The conservation leadership training is targeted to soil conservation district supervisors and staff, with over 190 attendees having taken the training to date.

As you can see, the Soil Conservation Districts rely on the State Committee and the Extension Soil Conservation Program Leader to provide needed outreach, facilitation, and education.

However, the critical factor that impacts the day to day operations of the soil conservation districts is the District Assistance Program. For some Districts, the funding has insured the ability of maintaining one employee, without whom the district would become non-operational. The loss of funding has the potential to severely limit the capacity to provide technical assistance to local farmers and ranchers and facilitate efficient and effective grassroots conservation across the state.

This past year the State Committee was the focus of an Agriculture Committee legislative review. On November 15<sup>th</sup> 2018, Senator Joan Heckaman, Vice Chairperson of the Agriculture Committee, presented the committee report. The committee focused their review on the duties, responsibilities, and related costs and efficiencies of the State Soil Conservation Committee and related North Dakota State University Extension staff, and the needs of the soil conservation districts. It concluded, it was a necessity to continue the State Soil Conservation Committee. The report and its conclusion were accepted on a roll call vote with no votes in opposition.

In closing, I encourage you to continue funding the District Assistance Program at its current level. Thank you for the opportunity to testify and I would welcome any questions.

Senate Appropriations Hearing  
March 20, 2019  
State Capital, Harvest Room

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Good morning Chairman and Appropriations members. My name is Mara Bornemann. I am a local 4-Her from Morton County and I am currently a State 4-H Ambassador. I am ecstatic to be here today to share my 4-H experiences and interactions I have had with NDSU extension so that your committee may have some insight as to what your decisions mean to North Dakota's youth. This testimony is my own and does not speak for all young 4-Hers. However, I believe my experiences highlight what makes government funded programs such as extension vitally important to both rural and urbanized communities alike.

One exciting opportunity I have had through 4-H was the 2016 Citizen Washington Focus conference I attended in Washington, D.C. Our small North Dakotan delegation, made up of six Morton county 4-Hers, was fortunate enough to have gone to the conference session during our country's birthday. Our extension agent, Karla was the one who orchestrated the entirety of our trip. She introduced us to the idea of the trip, convinced us to commit and helped every person in the group find opportunities where we could receive grants to help pay for our trip. Karla's hard work paid off through the kids she encouraged as we all learned much in D.C. and cherished the experiences we had there. Together, we learned much about this country's history and interesting facts by visiting several monuments, memorials and museums with our own 4-H tour guide. Apart from the fun of exploring the National Mall and other places D.C. has to offer, we acquired important and useful knowledge through the conference itself. We learned the process of how a bill is written, the process of passing or failing one by writing our own bill with other delegates from all around the US also attending the conference. Watching fireworks light up the sky at our nation's capital while learning about the U.S. government and meeting youth from different parts of this country was truly a wonderful experience that I can always look back on and thank 4-H and extension services for giving me that opportunity.

Only a few years after my first trip to D.C., my extension agent informed me of the opportunity to return to the nation's capital for a working conference. Once she informed me of the requirements for the national-level opportunity, I applied and shortly after was informed that I would be attending the 2018 National 4-H Conference in Washington, D.C. with three other delegates from across the state of North Dakota. At the conference, I spent time with in the Juvenile Justice committee consisting of sixteen other 4-H ambassadors from across the U.S., and Puerto Rico. Together, we spent hours preparing a presentation on law enforcement. We explored what we as youth feel law enforcement can continue to do well, recommendations for change, and shared personal experiences with law enforcement from our communities back home. The purpose of the presentation was to potentially strengthen the relationship between youth and law enforcement *by using our suggestions and research*. We visited the U.S.

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Department of Justice to share our short presentation. Apart from the opportunity to work with a small group of young intellectuals, the conference had sessions about what it takes to be a true leader on a local, state and national level. Our North Dakota delegation was able to meet with our state senators for a few short minutes to discuss what issues youth in our state believe they should prioritize. Because of this conference, I have close friends throughout the U.S. Without the encouragement and resources from my county extension agent; this would have been a missed opportunity.

After my extension agent pushed me to leave my comfort zone, I applied later became a North Dakota 4-H ambassador in November of 2017. As an ambassador, I am able to be a helping hand at events where volunteers are hard to come by, whether it be a county fair in need of project judges or putting together tie blankets for a local homeless shelter. Providing charitable grace to those in need statewide allows me to be the best version of myself. I am able to show youth what it takes to be a leader by demonstrating how far I have come by finding a sense of confidence within myself. The ND 4-H Ambassador program provides environments to learn by creating opportunities such as the annual Extension Youth Conference held on NDSU's campus. At EYC, young individuals learn and develop leadership skills as well as broaden their horizons on what other opportunities are open to them. At events such as EYC, I am able to work with youth and learn what they feel is important to build their futures. It is often said that being a teacher is the greatest way to learn; I am continuously learning whilst simultaneously being a teacher in regards of leadership. As long as there are programs such as extension around to inform youth on how truly important they are; tomorrow's world will be phenomenally strong.

I have been truly blessed with a phenomenal County Extension Agent that has supported my 4-H career tremendously. There's a quote that states that if you love what you're doing you'll never work a day in your life; I believe my agent fits into that phrase perfectly. She is a true inspiration to our youth development and state and I strive to be someone as passionate as her. She really has taught me to give back to a program that has given so much to me as an individual. I wouldn't understand the importance of promoting and educating the public about agriculture and organizations like 4-H without a true leader like her. She is a gift to our county, a catalyst to my goals and an all-around outstanding leader.

These experiences as well as numerous other 4-H opportunities have sparked a desire within me to relay my experiences onto others so that North Dakota's youth may learn what it takes to be a great leader so that they too can make a difference in their communities, grow a pride in what they do and become true and informed citizens of tomorrow. Thank you for taking a moment of your time to listen to my testimony.

Mara Bornemann  
Morton County 4-Her and ND State 4-H Ambassador

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3/20/19 – Harvest Room  
8:30 AM

Good afternoon Chairman Holmberg and members of the Senate Appropriations. It is an honor and pleasure to share with you my support for NDSU Extension.

My name is Vawnita Best. Along with my husband, Pete and our ten year old son, Kyle we ranch southeast of Watford City where we raise registered Angus cattle and Quarter Horses. We do so on the ranch I grew up on. In 1993 I left there bound for NDSU. I had grants, loans, and saving account monies generated by my eight 4-H market steers. My goal was to attain a Bachelors Degree in Animal and Range Sciences. At that time the brain drain was in full swing, but the dream was to one day be able to return home to McKenzie County.

After participating in many different 4-H youth programs and knowing and understanding the positive impacts those experiences had on our lives, we now have the opportunity to support Kyle in his own 4-H journey. Last year he was a first year 4-H member of the Young Guns 4-H club. His highlights at the McKenzie County fair were showing his market steer, Beefy, earning a Grand Champion on his Horsemanship Interview, and at the state level receiving an Award of Excellence for his Communication Arts video titled Putting the Freeze in Branding. 4-H transforms the life experiences of youth participating in its programs and activities.

The adult leadership program, Rural Leadership North Dakota is another that I have personal experience with. As a member of Class V of RLND, I can speak to the program's effectiveness

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in building leadership and networking capacities in and between North Dakotans and their communities. It has inspired many North Dakotans to enter the arena of public service and to lead in their communities with a servant heads, hearts, and hands.

Along with highlighting programs where benefits may be statistically hard to numerate, but that truly empower North Dakotans to improve their lives and their communities, I also wanted to share with you an observation in overall organization priority.

In America 1.5% of the US population is engaged in production agriculture and efficiently produces food and fiber for our country and much of the world. In December of 2018, NDSU Extension interviewed for the McKenzie County Extension Agent position. Part of that interview process was to prepare a five-minute presentation on the following:

“With the growing disconnect between the general public and agriculture, what would you do as the McKenzie County Extension Agent to help bridge that gap?”

Considering the issues that this disconnect has created with policy and lawmakers nationally, and in the arena of public opinion, more than ever we need an organization with grass roots placement on the community level able to work toward bridging this gap. NDSU Extension has identified and prioritized the need to bridge the rural and urban gap and they are well equipped to do so.

Thank you again for the opportunity to share my support for NDSU Extension with you. Are there any questions?

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**SENATE APPROPRIATIONS COMMITTEE HEARING**  
**TESTIMONY FOR NDSU EXTENSION AND RESEARCH**  
**CENTERS**

MARCH 20, 2019 at 10:46 AM IN THE "HARVEST ROOM" AT THE ND STATE  
CAPITAL

**Chairman Senator Holmberg and committee members,**

**Good Morning, I am Dave Miller a Farmer/Businessman from Donnybrook, ND. My wife Sharon and I raised our family of 2 girls and 4 boys on a cattle and grain farm. We took over my father's farm in 1970 and in 1975 we started a seed conditioning business to compliment our farming operation. You might say that the NDSU Extension and Research centers have taken my family farm and seed conditioning business full circle. Full circle meaning that the NDSU Extension and Research Centers have made a difference in the lives of my family, have made a difference in my farming career and have made a difference in my seed conditioning business from their inception in my generation to the passing on to the next generation. And I would like to tell you how the NDSU Extension and Research Centers have done this by highlighting just a "few" of the programs and research that they have provided for my family. After graduating from NDSU with an Agricultural Engineering degree I brought my new bride to Donnybrook to take over my Fathers Farm. Being new to the area my wife chose to join a "Homemakers Club" to make new friends. These clubs were promoted and guided by the Extension. Through this club Sharon and I met some of our best and lifelong friends. Thank you extension!**

**In my farming business I have participated in the "Chemical Certification Program". This program instructs a farmer how to handle and use farm production chemicals safely. I have also participated in the county "Crop Improvement Association". This program guides you in the production of new seed varieties and helps to distribute the seed to other seed producers. This program worked**

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***so well on my farm that I began to raise more and more Registered and Certified seed each year. Thank you NDSU Extension and Research Centers!***

***When I was planning to start my seed conditioning business, I needed to build plant that would clean the main crops grown in the area and I wanted the plant to be portable so I could take it right to a farmers bin site. I contacted my county extension agent and discussed my plans with him. He was knowledgeable in the main crops that I would be working with and what type of cleaning equipment that I would need. I built my first seed plant in the fall and winter months to have it ready for spring seed cleaning. Since Extension is the outlet for the NDSU research center data, I was able to obtain critical information to build the seed cleaning plant from my county agent and research technicians. For instance: I needed to know the degree of slope needed for different grains to flow easily from one point to another. Thank you Extension and Research Centers!***

***Our 2 girls and 4 boys participated in the 4-H youth program from the age of 8 as a Clover Bud till they graduated from high school. As I reflect back on the many 4-H projects and programs they completed it makes feel good. Good that I took the time to encourage them and help them. From sewing to welding, from raising vegetables in a garden to raising calves and sheep, from building a cutting board to building a welding table, these 4-H projects have built character and a sense of pride and accomplishment in our children. This program is as much an urban program as it is a rural program, it's for kids everywhere! And it's one of the few programs that I know of that has parents working with their children, side by side, to complete a project or program. How valuable is that, parents working with their children. Thank You Extension!***

***Now my wife and I are at the time of our lives where we just want to put business worries aside and enjoy family and friends. But many of you know it takes planning and strategy to pass a farm onto the next generation. One of our Sons had come home to farm after***

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**getting two degrees from NDSU, one degree in Ag. Systems Management and one degree in Crops and Weed Science. He was helping to operate the farming and seed conditioning business, so after a few years the process of passing the farm on to the next generation was at hand. My wife and I had attended at least three seminars addressing farm transfer to the next generation, giving us some ideas but not a clear plan. Then we got a bulletin from the Extension saying they were offering a "Design your Succession Plan" workshop. I attended the workshop alone the first time and realized that this was what my family needed. So the next time the workshop was available in our area I took my wife Sharon and we came away with a plan that I describe as a "roadmap" guiding you through the steps, one at a time, on how to transfer the farm business to the next generation. Thank you Extension!**

**I consider myself blessed. I have a wife of 48 years that I love very much, and we both are healthy. Our six children and their spouses are happily married and successful in their vocations. Seven of them are involved in agriculture, yes seven, three are in the medical field and two of them have their own businesses. So if you ask me, "Did the NDSU Extension and Research Centers have an effect on your life as a father or as a farmer or as a business man?" I would probably say "Have you got time for a cup of coffee? I'd like to tell you about that."**

**I urge you to keep the NDSU Extension and Research Centers strong! North Dakota is an agricultural state and the programs that Extension has to offer and the agricultural research that is done at the research centers keeps farm families healthy and productive, as well as keeping our youth close to home!**

**Thank you for listening to my story. Do you have any questions?**

**Dave Miller, 32400 380<sup>th</sup> St. NW, Donnybrook, ND 5734 Phone 701-721-4414**



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## Agribiome Testimony

Mr. chairman, Dick Roland from Crosby ND and I'm a member of the SBARE board. I'm here to ask for support of our number one research priority, the Agribiome Research Initiative.

The SBARE Board is mandated by this assembly to identify the critical issues in agriculture. I believe and many others agree that the degradation of our soils is the number one critical issue in agriculture worldwide.

Our states motto is "Strength Through Soil" with this theme in mind let's review a few disturbing facts about our soils:

- 1) NDSU soil scientist, Dr. David Frantzen put together the history of soils in ND and found we have lost over ½ of organic matter-think carbon. The world thinks of carbon (CO<sub>2</sub>) as a problem but for plants it is essential for life and is our most limiting element in. By restoring carbon to the soil we can help solve both problems.
- 2) 13% of the land area in North Dakota is nonproductive due to salinity. This is a function of water management.
- 3) Nation wide, we lose more tons of soil through erosion then we are producing in food. We can't continue long term to make this trade off.
- 4) Nutrition research indicates we have lost between 15-65% of the mineral content of our food since the 60's. This reduction in the nutrient density of our foods has spawned a multi-billion dollar industry in mineral and vitamin supplements.
- 5) More disturbing is the loss of biology in our soils that supports a healthy plant biome. This has resulted in promoting the pathogenic microbes at the expense of the beneficial microbes.

In the last number of years the medical research has tied human health to the human biome – think diabetes, heart disease, cancer, obesity, ect. According to their research our biggest organ would be the collection of microbes on or in our body. To put it in prospective we have 6 trillion cells in our body but only 1 trillion are human cells. – think, we are a part of the ecology.

Mean while, our knowledge of the Agro-Biome, that sustains all life, has lagged behind. We know more about the universe then we know about the soil biology and their processes beneath our feet. Even with our modern technology we perhaps have only identified a fraction of the organisms that are in a tablespoon of healthy soil and very little of what they actually do.

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The good news for rebuilding our soils is a growing movement in regenerative agriculture being practiced by innovative farmers and ranchers, with the support of research. They have identified practices to rebuild the health of our soils while reducing synthetic inputs. North Dakota farmers like Gabe Brown, who farms just east of Bismarck, along with the work of the Burleigh SCS district and the Menokan Farm are recognized worldwide as the leaders regenerative agriculture. This transformational movement in agriculture has the potential to produce nutrient dense foods while building back the soil organic matter and biology in our soils. These soil principals also have shown to improve farm profits while lowering costs and weather risks. This is accomplished by tapping into the natural ecosystem that developed these rich prairies of North Dakota. Interestingly, these native prairie soils do not respond to fertilizer and are essentially disease, insect and weed suppressant.

In conclusion your committee has some tough decisions on how to allocate the states scarce resources, I trust these decisions will be deliberated on the basis that these funds are fixing the cause of the problem not just treating a symptoms. Fixing the cause of this critical issue in agriculture should benefit all people by insuring future generations clean air, clean water, abundant wildlife and nutritious food and soils that are renewable. The NRCS has a slogan on there billboards around the state, healthy soils = healthy plants = healthy people.

In conclusion I ask you to please consider these four requests :

- 1) Consider restoring the agriculture research funding, with out this adding the Agri biome Initiative would be hampered by a lack of infrastructure.
- 2) Fully fund the Agri biome Research Initiative to identify future tools for improving the agri-ecosystem .
- 3) Your funding of the Soil Health Initiative has been very successful and funding the current SBARE "Extension Operational Support" initiative would help educate growers in every county on what we know now that could make immediate transformational changes to regenerate our soils".
- 4) Lastly, before deliberation please take some time to read the new book, "Dirt To Soil" by Gabe Brown or take 30 minutes and view his or the Menokan Farms video on U-TUBE.

Thanks for your time and consideration.

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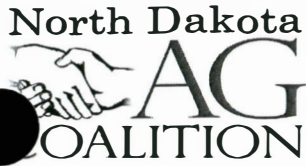
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# Dirt to Soil

**One Family's Journey into  
Regenerative Agriculture**



**Gabe Brown**



P.O. Box 1091  
Bismarck, ND 58502  
(701) 355-4458  
FAX (701) 223-4645

**VOTING MEMBERS**

Independent Beef Association of ND  
Milk Producers Association of ND  
Minn-Dak Farmers Cooperative  
ND Ag Aviation Association  
ND Agricultural Association  
ND Ag Consultants  
ND Agri-Women  
ND Barley Council  
ND Corn Growers Association  
ND Corn Utilization Council  
ND Crop Improvement & Seed Association  
ND Dry Bean Council  
ND Elk Growers  
ND Ethanol Council  
ND Farm Credit Council  
ND Farmers Union  
Grain Dealers Association  
Grain Growers Association  
Irrigation Association  
ND Lamb & Wool Producers  
ND Oilseed Council  
ND Pork Producers Council  
ND Soybean Growers Association  
ND Stockmen's Association  
ND Wheat Commission  
Northern Canola Growers Association  
Northern Plains Potato Growers  
Northern Pulse Growers Association  
Northwest Landowners Association  
Red River Valley Sugarbeet Growers  
U.S. Durum Growers Association

**NON-VOTING MEMBERS**

BNSF Railway, Inc.  
Ellingson Companies  
Garrison Diversion Conservancy District  
ND Association of Ag Educators  
ND Association of Soil Conservation Districts  
ND Beef Commission  
Department of Ag  
Grazing Lands Coalition  
ND Soybean Council  
ND State Seed Commission  
NDSU Agricultural Affairs

#37

HB 1020 Extension  
3-20-2019

pg 1

**Testimony of Jim Bahm  
North Dakota Ag Coalition Executive Committee  
HB 1020**

Chairman Holmberg and members of the committee, my name is Jim Bahm, and I am here today as an Executive Committee member of the North Dakota Ag Coalition. The Ag Coalition has provided a unified voice for North Dakota agricultural interests for over 35 years. Today, we represent more than 40 statewide organizations and associations that represent specific commodities or have a direct interest in agriculture. Through the Ag Coalition, our members seek to enhance the climate for North Dakota's agricultural producers.

The Ag Coalition takes a position on a limited number of issues, brought to us by our members, that have significant impact on North Dakota's agriculture industry. The Ag Coalition supports the funding of the 2019-21 SBARE priorities for the NDSU Extension Service and the North Dakota Agricultural Experiment Station, as ag research and extension continue to be one of the top priorities for North Dakota's crop and livestock producers. Private industry provides numerous options for producers who then rely on ag research and extension to determine the value of those products and services.

We appreciate your past support and urge your continued support of research and extension as these programs provide valuable information, education, and tools for the state's producers. They have been, and will continue to be, the driving force in the future of North Dakota's agriculture industry. We encourage your support of HB 1020.

#38

HB 1020 Extension  
3-20-2019  
P91

Good morning Chairman Holmberg and members of the Senate Appropriations Committee:

My name is Barton Schott. I am the chairman of the State Soil Conservation Committee. I also farm with my son Andy. He is the fifth generation farming the land. We practice no-till seeding and have land enrolled in CSP where we have planted buffer strips around our prairie potholes.

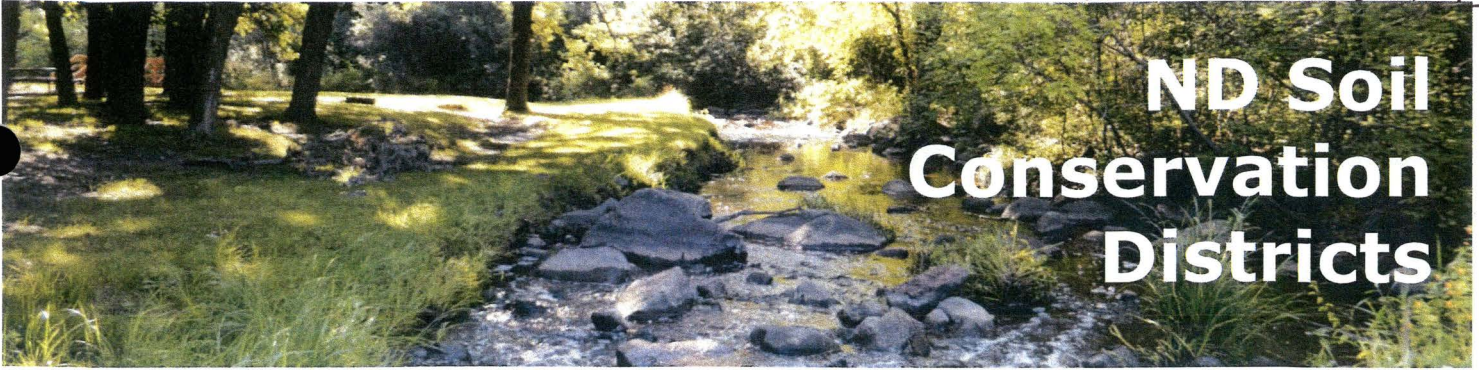
The state soil conservation committee consists of two governor-appointed and five regional directors from across the state.

- Barton Schott, Appointee, Chairman, Kulm, ND
- Dennis Renner, Appointee, Mandan, ND
- Donna Grann, Area 1, Sheyenne, ND
- Warren Solberg, Area 2 Supervisor, Colfax, ND
- Bruce Knudson, Area 3 Supervisor, Bottineau, ND
- Jack Spath, Area 4 Supervisor, Grand Forks, ND
- Wes Frederick, Vice Chair, Area 5 Supervisor, Flasher, ND

Other Committee Members:

- Doug Goehring, Department of Agriculture
- Sarah Tunge, NDCDEA Director
- Tina Harding, Nd State Water Commission
- Kevin Kading, ND Game and Fish Department
- Mary Podell, State NRCS Conservationist

As you have heard in previous testimony, this committee, with Bruce Schmidt's guidance, has really made significant changes this past year or so. The state soil conservation committee has become more hands-on with the 54 districts in our state. The committee works together with the State and Federal agencies, not duplicating, but rather partnering. The funding that you provide is crucial to the day-to-day operations of the districts. Thank you for providing the basic funding for the district assistance program at its current level.



# ND Soil Conservation Districts

## Soil Conservation Districts

### Inside:

<i>Education</i>	2
<i>Conservation Cropping System Project</i>	2
<i>Composting</i>	2
<i>Saline Management Tools</i>	3
<i>Rural Women</i>	3
<i>Irrigation Pump</i>	3
<i>Urban Conservation</i>	4
<i>Soil Health</i>	4
<i>Nutrient Balancer</i>	4
<i>No-till Gardening</i>	4
<i>Directory Insert</i>	

In 1937 the State Legislature, under Governor William Langer, enacted Senate Bill 222 providing soil conservation districts a law with provisions for organizing such districts under state supervision.

Districts are organized by the vote of the people within the district and are managed by a board of supervisors also elected by the people.

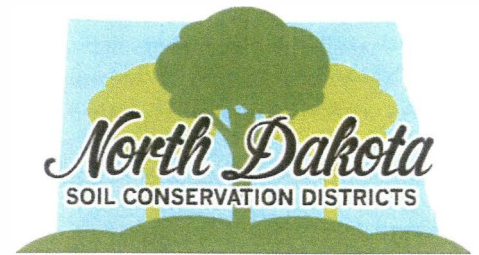
Soil Conservation Districts are responsible for carrying out a program of conservation on all our natural resources on cooperating farms and ranches within the district.

District supervisors shall provide for the execution of surety bonds for all employees and officers, provide full and accurate records of all proceedings, resolutions, regulations and orders issued or adopted by them.

They are responsible for maintaining complete and accurate records of receipts and disbursements of the district and provide for an annual audit. An annual financial statement must be forwarded to the State Soil Conservation Committee at the close of the business year.

Among other things, conservation districts help;

- implement farm, ranch and forestland conservation practices to protect soil productivity, water quality and quantity, air quality and wildlife habitat;
- conserve and restore wetlands, which purify water and provide habitat for birds, fish and numerous other animals;
- protect groundwater resources;
- assist communities and homeowners to plant trees and other land cover to hold soil in place, clean the air, provide cover for wildlife and beautify neighborhoods;
- help developers control soil erosion and protect water and air quality during construction; and
- reach out to communities and schools to teach the value of natural resources and encourage conservation efforts.



Soil Conservation Districts - Deliver cost effective, sustainable land & water management on the landscape & work to maintain the healthy watersheds we all live in together.

## It's Not Just Tree Planting

You might know us as "those people" that plant trees. Well we would like to fill you in on a little secret - we do plant trees, but we do so much more. We work daily with our local farmers, ranchers and district residents in protecting and enhancing our glorious North Dakota natural resources.

This newsletter highlights just a few of the services and projects in which we are involved with. So often we are lumped in with NRCS. We do have similar missions and we share the same office space, but we are locally led, and funded through district mill levies and the much needed financial support through the Soil Conservation Assistance Program (state funds).

Please take some time to really get to know us and what we do.

## A sample of what we offer...

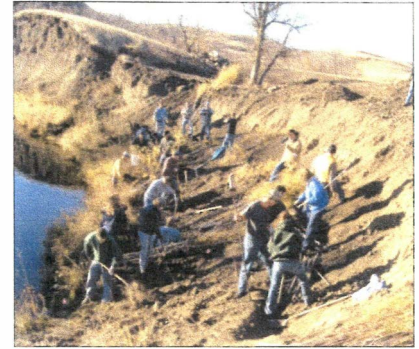
### Education

Soil Conservation Districts carry out information programs directed to the farm and non-farm public. Newsletters, newspaper articles, workshops, tours, demonstrations, and informative meetings are some of the means used to promote conservation.

Youth education is also a high priority. The Eco-Ed program brings 6th grade students outdoors. Professionals teach them about prairies, soils, wetlands, woodlands and their connection to water quality. Some districts hold range tours, or participate in Water Festivals for elementary students.

High School students are able to participate in the State-wide Envirothon competition held every spring.

Districts also strive to educate our own personnel through workshops, and hands-on training. Employees have been offered soil health, composting, rain gardens, rangeland, and grazing workshops. Classes are offered for water 101, macro invertebrates, and shelterbelt planting (design, specie selection, seedling care and storage and correct planting technique.)



### Conservation Cropping Systems Project

The mission of the CCSP project is to evaluate profitable crop rotations and crop management strategies that are uniquely adapted to the climate and friendly to our environment. This project creates an educational forum for the exchange of ideas, information, and issues regarding best management practices for no-till seeding systems, crop rotations, and non-point source pollution.

The extra rainfall in the southeastern portion of ND and water conserved in a no-till cropping system has caused production

problems for farmers trying to adapt a no-till seeding system.

It is believed that modification to the crop rotation and associated management practices will allow farmers to be successful in a no-till situation. Data generated from these rotations is available to all parties through news releases, and the web-site <http://notillfarm.org/>.

Field Day tours are held a couple of times each year to show what has been done at the demonstration farm and how it may be beneficial to our producers.



### Composting Project

Since 2005, Wells County Soil Conservation District has been a leader in the promotion of windrow composting in North Dakota and throughout the upper mid-west. The project promotes the economic, environmental and animal health aspects of windrow composting on livestock operations.

The broad objective of Wells County's **Composting Project** has been to introduce animal waste composting, as an economically viable component of a

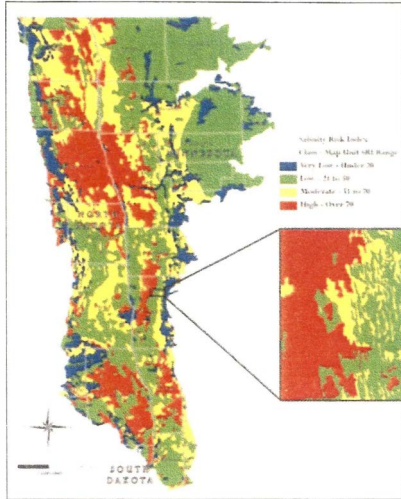
management system for handling organic waste material.

The project also demonstrates the direct benefits to water, soil, and atmospheric resources, grazing land health, and the associated benefits to wildlife habitat.

Since the project began in 2005, trials have been conducted on at least 22 active livestock operations and many of those producers have adopted windrow composting as an annual practice on their farm.



## Saline Soil Management Tools



Saline soils are those that are high in soluble salts. North Dakota has 5.8 million acres of saline soils, and that number is growing. In the Red River Valley, \$150 million is lost each year due to these soils.

Grand Forks County contains one of the largest areas of salt affected soils. This stems from an artesian discharge area that sits on top of sandstone, which formed in the Dakota Sandstone Formation. This combination gives the county a high water table that is continuously bringing up salts.

Historic farming practices have increased the affected areas. Tillage leaves soils bare and allows water to evaporate, while the salts sit at the surface.

The Grand Forks County Soil Conservation District has been helping landowners understand the causes of salinity and demonstrating different farming practices that will help reduce its devastating impacts.

Workshops, tours, and a demonstration site have all been implemented in the past two years to educate and showcase practices like no-till, cover crops, crop rotation, and water management. Collaborations with UND, NDSU, and the NRCS have helped bring this education to the forefront. Salinity will not go away, but better management will help keep those natural salts in the soil profile instead of on the soil surface.

## Rural Women



“Ladies Ag Nights or Days” bring women together who have one common goal: to keep agriculture alive and thriving! These nights are sponsored by Soil Conservation Districts along with many other generous donors.

Ladies Ag is important as women are an integral part of the farming and ranching communities and enjoy a chance to be recognized for doing their part to keep rural America strong! They may have different connections to agriculture and rural life, but their time and efforts can easily be related to by each other!”

Like all the equipment on rural operations, women too need regular maintenance. Many programs share stories about working with husbands on the farm. We all must learn how to laugh at ourselves because somewhere, someone else is sharing our very same experiences.

Rural Women’s Days or Nights inspire, educate and entertain women on a wide variety of topics such as new recipes, decorating techniques, thrift ideas, landscaping inspiration, holistic family vision and important subjects targeting production agriculture.

## Irrigation Pump for Holding Ponds



The Barnes County Soil Conservation District’s Watershed Project purchased a big gun irrigation system. Local cattle operations that have installed manure management systems through EQIP and EPA-319 watershed projects are experiencing holding ponds filled to their capacity.

The SCD felt there was an urgent need to provide a cost effective and appropriate method of lowering the effluent levels in these ponds.

The district collected effluent samples from 15 ponds which were tested for N, P & K, pH, Ammonia, Chloride, Salts, TSS, E.coli, Dissolved Solids, and Bio Oxygen Demand to provide a baseline of nutrients.

By offering this service local producers are able to dispose of their dirty water in an appropriate manner, thereby staying in compliance with their nutrient management plans and with the North Dakota Department of Health regulations.



## Urban Conservation



All states, North Dakota included are experiencing increases in urban acreage and decreases in rural acreage. When we think of natural resource conservation we often first think of rural areas, but with this increase in urbanization, conservation of our precious resources becomes just as important in urban areas.

What are our urban residents interests:

Rain gardens are colorful, perennial plantings designed to capture and use retained water that may otherwise run off. Runoff from roofs, lawns, driveways and parking areas may overload storm sewers and pollute streams.

Rain barrels are a catchment system designed to capture and store rain water

coming off a roof. Rain barrels help lower water costs during peak summer months, reduce runoff to storm sewers, and provide oxygenated, un-chlorinated water for plants.

Composting significantly reduces the amount of solid waste contributed to landfills. Using compost as fertilizer cuts back on the use of chemical fertilizers, which could run off and contaminate the water.

Xeriscaping is a conscious attempt to develop plantings which are compatible with the environment. It entails the wise use of water through water efficient landscaping and utilizing plants better adapted to local climate. and varied soil conditions.

## Soil Health



Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plant, animals, and humans. Soil contains living organisms that when provided the basic necessities of life: food, shelter, and water - perform functions required to produce food and fiber.

Producers are looking for information, data and research. Various workshop topics have included; Increasing Soil Health Through Biodiversity, Bringing CRP into a No-Till Grain System, Cov-

er Crops for Prevented Plant Ground, Enhancing Forage Based on Livestock Operation, Managing Soil Moisture, Soil Testing for Soil Health, and the Financial Impact of Good Soil Health.

New technology is developing daily and the SCD's are a perfect gateway to share this information with our operators. Workshops or meetings always end with a great discussion between the presenters and their audience.

## Nutrient Balancer

Cedar SCD offers Nutrient Balancer through the Grazing Animal Nutrition Lab at Texas A&M University. Producers can have fecal samples from their cattle analyzed to maximize their grazing lands. Cedar SCD will collect the samples or producers can bring them in. We go through a series of questions and the sample is sent for analysis. The report comes back from the lab and producers can then make informed grazing decisions for their cattle.



## No-till Gardening

The Selfridge No-till Garden has been growing strong for three years. The site was grassy to start, then sprayed with Round-up (it could be covered with tarps or plastic) to kill the vegetation. Using screw drivers, pizza cutters and pick axes, the garden was planted with little ground disturbance. It has been a huge success, and we have been able to donate well over a thousand pounds of produce to area schools, diabetes programs and area individuals.



# ND Structural Organization Soil Conservation Districts

## SUPPORTING ORGANIZATIONS / AGENCIES

**ND State Legislature**  
 Assistance Funding - Legislation  
 Operating and SCDAP  
 in NDSU Ext Budget

**NDSU Extension Service**  
 District Directors/Ext Agents  
 Technical Assistance  
 (State & County Appropriations)

**National Association of Conservation Districts (NACD)**  
 National Voice  
 (Membership, Services, grants)

**ND Association of Soil Conservation Districts (NDASCD)**  
 Legislation Proposals - Lobbyist  
 Dues, Lincoln Oakes Nurseries

**ND Soil Conservation District Employee Association (NDSCDEA)**  
 Networking - Employee Training  
 Employee Memberships

**State Soil Conservation Committee**  
 Est. 1937 Federal Conservation Law Act  
 5 Elected SCD Supervisors - 1 from each Area  
 2 Governor Appointed Members  
 Funding Administration - Regulations - Supervisor Training  
 State Funding - Grants

**Soil Conservation Districts**  
 SCD Supervisors  
 3 Elected 2 Appointed  
 District Conservation Plan  
 Mill Levy - Sales

**SCD District Employees**  
 Local Support  
 Mill Levy - Grants - Sales -

**Watershed Coordinators**  
 Local Conservation Projects  
 Federal Funds - Mill Levy - Grants

**Land Owner / Land User**

## SUPPORTING ORGANIZATIONS / AGENCIES

**NDSU Ext Soil Conservation Program Leader**  
 Coordination - Accountability  
 NDSU Ext Budget - Grants

**USDA- NRCS**  
 Technical Assistance  
 Federal Appropriations

**ND Forest Service  
 ND Dept of Ag &  
 ND Game & Fish**  
 Technical Assistance  
 State / Federal Appropriations

**North Dakota Health Dept**  
 Funding  
 Federal Appropriation - EPA 319

Organization Major Contribution  
 Organization Funding Source

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 4/8/2020  
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# U.S. Durum Growers Association

PROMOTING THE PRODUCTION AND MARKETING OF DURUM AND SEMOLINA

P.O. Box 1091 • Bismarck, ND 58502 • (701) 214-3203  
office@durumgrowers.com • www.durumgrowers.com

# 40

HB 1020  
3-20-2019

Ag 1

**Testimony of Blake Inman  
USDGA President  
In Support of HB 1020**

Chairman Holmberg and members of the Senate Appropriations Committee:

My name is Blake Inman, and I am a farmer from Berthold and the owner of a seed company that conditions and sells certified seed. I am here today as president of the U.S. Durum Growers Association in support of HB 1020 as we recognize the significant importance of ag research and extension to the future of agriculture in North Dakota.

Ag research and extension are an essential tool for the state's producers, and it is proven a high rate of return to the state's economy for money invested in ag research and breeding programs. Restoring the funding for ongoing research is essential as quality breeding programs, such as those that have been established at NDSU, take decades to establish and, therefore, can't just be turned on and off. North Dakota produces 60 percent of the nation's durum, and NDSU's durum breeding program is essential as no significant other public or private breeding programs exist. The two most recent releases from the breeding program are specifically bred for low Cadmium uptake to help us better compete against Canada in the world export market. Research, especially for scab management and resistance and quality management in durum, is also of utmost importance.

USDGA also supports the one-time funding for a new seed cleaning facility at the Williston Research Extension Center, as these facilities are extremely important for producers statewide. They provide the essential link between the great new varieties from our breeding programs to seed producers such as myself so that we can get them into the hands of producers. They are also an income generator for the research centers through the sale of foundation and registered seed.

USDGA also supports funding of a new building to replace Waldron Hall. Waldron Hall is well over 50 years old and can no longer provide a space or safety that our researches need to carryout the research that is so vitally important to the producers in our state.

We understand past and current budget situations. However, agriculture is and will continue to be the foundation of our state's economy. Even in times of low commodity prices, our families will continue to be here buying groceries, patronizing local businesses and contributing to the state's economy. We appreciate your past support and urge your continued support of ag research and extension.

#41

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3-20-2019

Ag



You Raise. We Represent. [www.ndgga.com](http://www.ndgga.com)

**North Dakota Grain Growers Association  
Testimony on HB 1020  
Senate Appropriations Committee  
March 20, 2019**

Chairman Holmberg, members of the Senate Appropriations Committee, for the record my name is Dan Wogsland, Executive Director of the North Dakota Grain Growers Association (NDGGA). For over 50 years the North Dakota Grain Growers Association has, through its contracts with the North Dakota Wheat Commission and the North Dakota Barley Council, represented North Dakota wheat and barley farmers on domestic policy issues on the state and federal levels. Ag research and extension is the lifeblood of North Dakota agriculture; NDGGA is proud to support the SBARE budget priorities contained in HB 1020 and will be asking for enhancements to the spending levels in the SBARE budget as it came to you from the House.

The State Board of Ag Research and Education does an excellent job of prioritizing the research and extension needs in North Dakota agriculture. As you are all well aware, for every \$1.00 expended in agricultural research \$40 is returned to the state. That return on investment reaps huge benefits for the North Dakota economy. Prioritizing those dollars is a formidable task; as in every budget there are unlimited wants but limited means to meet the needs.

Additionally, you can have all the research in the world but if you don't have the capacity to share that information what is the use? To disseminate the information, you need to have a strong delivery system that meets the needs of today's agriculture. The NDSU Extension system does an excellent job of making sure the research and extension information that is necessary for the success of North Dakota agriculture is provided to its constituency, the agriculture industry as well as the general populace of the state.

*NDGGA provides a voice for wheat and barley producers on domestic policy issues – such as crop insurance, disaster assistance and the Farm Bill – while serving as a source for agronomic and crop marketing education for its members.*

#41

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3-20-2019

pg 2

Chairman Holmberg, members of the Senate Appropriations Committee, as you can see the needs here are broad in scope. That said, the budget you have before you provide an excellent guideline for your deliberations.

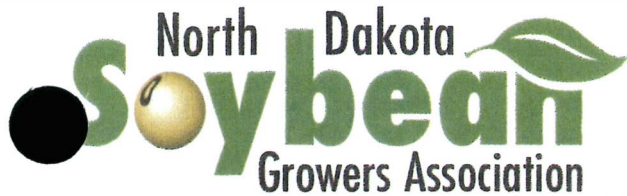
Some specifics:

- Extension operational support; NDSU does arguably the best ag research anywhere. However, it takes a strong delivery system to get that research out to farmers and ranchers. Providing County Extension Agents the means necessary to carry out this vital agricultural mission is paramount in importance to the success of North Dakota agriculture.
- Web and digital delivery; the web is the informational highway of today. Enhancing Extension's web opportunities proves even better access to agricultural information and access to a wider demographic than ever before.
- Agri biome Initiative; the harnessing of microbiomes in plants, animals and soils is revolutionizing agriculture and agricultural products. North Dakota is a leader in agricultural research; to keep pace with Agri biome research it is critical to put the people in place to take advantage of this technology and to provide North Dakota agriculture the advantages this technology provides.
- Precision agriculture; this isn't the future of agriculture it is the now of agriculture. Enhancing precision agriculture pays immediate and future dividends to the North Dakota ag industry.
- Operations support; enhancements at all levels are great but you need the funding necessary to maintain those enhancements. Operations support is a normal cost of business; falling behind in operations support cannot and should not be an option.

NDGGA would respectfully request the Committee consider the following enhancements:

- Restoration of the cuts implemented in the House version of HB 1020 for the Main Experiment Station and the Research Extension Centers
- Ensure there is an adequate compensation package for employees
- Making sure the SBARE initiatives are a part of the budget.

In closing, Chairman Holmberg, members of the Senate Appropriations Committee, you are very well aware of the dividends returned to North Dakota agriculture and the North Dakota economy by the investments made in the research and extension priorities that have been outlined by the State Board of Ag Research and Education. Agriculture drives the bus in the North Dakota economy; it is essential that we provide the necessary research and extension "fuel" to keep the bus going. Therefore, it is with great pride that the North Dakota Grain Growers Association supports HB 1020 with the enhancements mentioned and would respectfully request the Committee's concurrence.



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3-20-2019  
AS1

North Dakota Soybean Growers Association  
4852 Rocking Horse Circle South, Fargo, ND 58104  
(701) 566-9300 | www.ndsoygrowers.com

## HB1020 Testimony

Good Morning Chairman Holmberg and Senate Appropriations members.

I am Scott Rising, representing the North Dakota Soybean Growers Association. We are in support of the HB1020 with some adjustment.

Agricultural research (Main Station and Branch Research Centers) under North Dakota conditions and the effective capability to share successful processes (Extension Service) is critical to the economic future of our State. But the more recent budgetary path we've followed has had its potholes.

Successful Research and Transformational Education needs dedicated, persistent, talented people; safe and effective equipment; and controlled facilities, safe and controllable laboratories, as well as ground and space commensurate for effective results. We also need the appropriate capital to move through our time continuum in an ever-changing world.

I've attached spreadsheets to provide a condensed review and comparison of our On-going General Funds, both "approved" and "adjusted", for the 2013-15 through 2017-19 bienniums. Also included, is my perception and comparisons for the basic hold-even 2017-19 approved budget level requested for the 2019-21 biennium.

The Main Research Center recovers about 55% of the 2013-15 through 2015-17 reductions are recovered in 2019-21 budget request, if the House approved budget state employee salary and benefit package is included. We are in support of this recovery action.

In aggregate, the Branch Research Centers recover with the same package. However, individual Centers may require some adjustments to support their particular needs. We support of this as well.

The Extension Service just recovers with the package. We would also ask you look into the County request for funding relief for the budget changes enacted locally to help while state budgets were challenged during the last couple of sessions. The \$820,000 they are seeking is direct property tax relief for those that absorbed funding needs.

Because successful Research and Extension are activities are driven by human talent, skill and time, it critical to end the Full-Time Equivalent reductions.

We are extremely grateful for this Legislature's goal to increase the salaries while maintaining a complete benefit package for these critical people.

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Ag2

North Dakota's total Agricultural Economy (direct & indirect) continues to be rooted in the research and the transformational education package represented in this budget. These successful activities are our future. We know they are the root of the future of our customer consumers as well. Safe, nutritious and plentiful food; reliable and renewable fuels; soil improving techniques and water quality improvement practices benefit all. The blossoming biotechnology research and technique refinements are proving to be extremely important to our medical future too.

While our children and grandchildren will likely see beneficial changes we cannot even imagine, I keep hoping to see the day when brussel sprouts taste like French fries and the newest variety of Soybeans come off the field both nutritious and tasting like chocolate covered peanuts.

Others across our country have whittled away at these critically needed Research and Extension budget investments and have found in whittling, they've rendered necessary programs ineffective. In North Dakota we've build a strong research core with world class researchers, educators and facilities that benefit everyone of us.

Our point is serious and simple; Tomorrow's North Dakota's Agricultural Economy resides with the talent, dedication, skill and time of Today's Ag researchers and Extension's educators.

Please give HB1020 a DO PASS recommendation with the recommended adjustments.  
Thank You for your attention, and the gift of your talent and time.

Scott Rising,  
NDSGA Legislative Director  
C 710.527.1073  
scott.rising@ndsga.com



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3-20-2019

pg 3

### Agricultural Research & Extension Budget Look

#### Main Research Center

	<u>2013-15</u>	<u>2015-17</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$52,199,521	\$57,345,112	\$5,145,591	9.9%
FTEs	351.49	353.85	2.36	0.7%
	<u>2015-17</u>	<u>2017-19</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF		\$49,557,415	(\$4,023,840)	-7.5%
Adjusted Approps	\$53,581,255			
FTEs	353.85	336.12	(17.73)	-5.0%
	<u>2017-19</u>	<u>2019-21</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$49,557,415			
Gov & House Tally		\$48,624,499	(\$932,916)	-1.9%
FTEs	336.12	340.05	3.93	1.2%

#### Aggregate Change 2013-15 to proposed 2019-21

	<u>2013-15</u>	<u>2019-21</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$52,199,521	\$48,624,499	(\$3,575,022)	-6.8%
FTEs	351.49	340.05	(11.44)	-3.3%

	<u>Proposed 2019-21</u>	<u>2019-21 Ask: 2017-19</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$48,624,499	\$49,577,415	\$952,916	2.0%
FTEs	340.05	336.12		

Plus Proposed Salary & Benefit Increases Equaling about \$1,039,641 (Greensheet)

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3-20-2019

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# Agricultural Research & Extension Funding

## Branch Centers

	<u>2013-15</u>	<u>2015-17</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$17,585,702	\$19,798,447	\$2,212,745	12.6%
FTEs	107.4	113.94	6.54	6.1%
	<u>2015-17</u>	<u>2017-19</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF		\$17,155,257	(\$1,328,419)	-7.2%
Adjusted Approps	\$18,483,676			
FTEs	113.94	110.29	(3.65)	-3.2%
	<u>2017-19</u>	<u>2019-21</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$17,155,257			
Gov & House Tally		\$16,595,462	(\$559,795)	-3.3%
FTEs	110.29	109.81	(0.48)	-0.4%

### Aggregate Change 2013-15 to proposed 2019-21

	<u>2013-15</u>	<u>2019-21</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$17,585,702	\$16,595,462	(\$990,240)	-5.6%
FTEs	107.4	109.81	2.41	2.2%

	<u>Proposed 2019-21</u>	<u>2019-21 Ask: 2017-19</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$16,595,462	\$17,155,257	\$559,795	3.4%
FTEs	109.81	110.29		

28 **Plus Proposed Salary & Benefit Increases Equaling about \$663,865 (Greensheet)**

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# Agricultural Research & Extension Funding

## Extension Service

	<u>2013-15</u>	<u>2015-17</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$27,824,265	\$29,775,688	\$1,951,423	7.0%
FTEs	258.26	263.91	5.65	2.2%

	<u>2015-17</u>	<u>2017-19</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF		\$25,633,320	(\$2,190,922)	-7.9%
Adjusted Approps	\$27,824,242			
FTEs	263.91	252.98	(10.93)	-4.1%

	<u>2017-19</u>	<u>2019-21</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$25,633,320			
Gov & House Tally		\$26,818,238	\$1,184,918	4.6%
FTEs	252.98	242.51	(10.47)	-4.1%

### Aggregate Change 2013-15 to proposed 2019-21

	<u>2013-15</u>	<u>2019-21</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$27,824,265	\$26,818,238	(\$1,006,027)	-3.6%
FTEs	258.26	242.51	(10.93)	-4.1%

	<u>Proposed 2019-21</u>	<u>2019-21 Ask: 2017-19</u>	<u>Change</u>	<u>Biennium %</u>
Ongoing GF	\$26,818,238	\$25,633,320	(\$1,184,918)	-4.4%
FTEs	242.51	252.26	9.75	4.0%

**Plus Proposed Salary & Benefit Increases Equaling about \$1,084,918 (Greensheet)**

An Additional Consideration is the \$820,000 Counties are seeking for the County Extension Agents formula now that our 2015-2019 budget woes have eased. (Property Tax Relief)

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As/

My name is Mark Birdsall. I am a farmer in the Ward and Mountrail County areas. I am also Vice Chair for (SBARE) State Board of Agriculture Research and Education.

As a producer we have a tremendous amount of information available to use everyday. Many different companies tout their research results on a host of different agronomy products, seed varieties, seed treatments, crop protection, and biologicals. Some are great products and offer great returns on investments. Some do not. We depend on research and trial work at NDSU to guide us through the decision making with independent unbiased information to help make sure our return on our investment is the best it can be. There really isn't anyone else out there that can do that for producers.

North Dakota has an environment that is conducive to many different crops. Some are major crops, but many are considered minor crops. This helps with diversity and gives producers crop choices to help with profitability potential, especially when major crop prices are struggling. This has also created an opportunity for smaller local processing facilities to show up in North Dakota to process and package these crops. This has been great for our main streets and our state. In order for this to happen, producers have needed and have utilized public breeding programs at NDSU to develop varieties that work in North Dakota. These minor crops aren't big enough for large private breeding companies to ever consider. We then rely on NDSU agronomic research to give the producers production information on new crops that allow them to have the confidence to produce a new or minor crop.

In closing, I hope to leave you with an understanding of the importance the #1 industry in our state puts on ag research and education. The return on investment in agricultural research has been well documented and proven. Ag dollars for the most part stay in North Dakota and are spent on main street. I am a crop farmer and my comments are related to crop production. If I raised livestock, the importance would be the same. We as crop and livestock producers don't have a substitute for the independent information we depend on from NDSU. I cannot stress enough its importance. Thank You! Mark Birdsall

#1 HB 1020-NCI  
3-20-2019  
AJ1

**Remarks to Senate Appropriations Committee**  
**Senator Ray Holmberg, Chairman**  
**March 20, 2019**  
**Mark Jirik, Director, Northern Crops Institute**

The Northern Crops Institute was founded to promote the crops grown in North Dakota, Minnesota, Montana and South Dakota. For over thirty-five years, NCI has had remarkable success and evolved into a first class facility that is recognized worldwide and has earned a high level of trust for quality educational and technical expertise.

NCI is governed by the Northern Crops Council, consisting of producers from all four states as well as members of the industry. The Northern Crops Institute continues to look toward the future and endeavors to be on the leading edge of market innovation and market development. There is a strong belief among our stakeholders that we can be a significant agent of change for the region.

The Northern Crops Institute finds itself at a critical time of change within the organization, as well as within both the domestic and international market. As with any changes, we can shrink from the challenge, or we can choose to face the change head on to create a positive change for our organization, for our region, and for agriculture.

Internally, due to retirements and departures, we have seen close to 50% staff turnover in the last two years. State budget challenges have caused us to look closer at our activities and our thinking has evolved to less about we cut costs, and more about how we add value to the farmers, communities, states, and industries we serve to earn the right to grow.

We have also been challenged with some of our traditional approaches to how we conduct our courses and the structure of our organization. Getting participants from overseas continues to be a challenge due to visa concerns as well as cultural changes globally. Our use of technology and alternative educational methods have been limited to this point.

Over the last year, we have changed both the structure and positions within the organization to allow us to both expand our educational offerings as well as change some of those delivery methods. In addition, we are changing the roles to be more outward focused to increase our marketing efforts for our educational and technical service capabilities.

We are working to expand our programs for both international and domestic focused educational efforts on food, feed, and fuel. There is an increasing focus on a need for greater asset utilization and seeing the investments made by the region being put to the best use.

NCI has been fortunate to have invested in our facilities and equipment over our history, and have done so in a prudent and economic minded manner. We've utilized space, repurposed, reused, and consolidated wherever possible. However, changing food safety rules, changing industry needs, and the age of our equipment and facilities will require significant investment in the future.

Both international and domestic markets continue to present many challenges and opportunities. Recent developments in international relationships continue to highlight the need for continued education and continued focused on developing markets. While some might look at the overall situation and be disheartened, we can't lose sight of the fact that the world economy continues to grow, as does the GDP per capita.

UN projections expect total global population will grow from today's 7.6 billion people to 8.6 billion by 2050 and 11.2 billion by 2100. Recently, much of that growth has come from Asia, but it is expected that this growth will shift west to the Middle East and Africa over the coming years.

On the back of this population growth will be rising middle class incomes and demand for more protein and better diets. The traditional progression of consumer diets has seen a shift from the basic necessities to a more complex diet that includes meat, snacks, and more convenience items.

Domestically and in other developed economies, we are seeing increasing focus on foods that are seen to be healthier and in some cases more traditional. Concepts like gut health, healthy fats, plant proteins, fermented foods, ancient grains, and heritage foods continue to gain popularity and scientific study. In addition, consumer trends around eating local, heritage foods, transparent supply chains, and 'foods with a story' are driving what the consumer is purchasing, and in some cases how they purchase their food.

Biofuel consumption also continues to grow internationally. 2018 will be the biggest year on record for ethanol exports as other countries look to find an oxygenate that will serve their environmental and economic goals.

NCI has an important place to play in all of these markets as we focus on our mission of growing both domestic and international markets for northern grown crops and expanding value added processing.

NCI has historically been successful due to the partnerships we have developed, and that cooperation will be key to any future success. These partnerships have been focused on state level commodity groups and their national check off partners. In addition, NCI has partnered with our land grant university partners in the four respective states. Our success wouldn't be possible without the support of NDSU's Plant Science and Food Science program, NDSU's Department of Agribusiness and Applied Economics, NDSU's extension programs and a host of other programs at North Dakota State University, South Dakota State University, University of Minnesota, and Montana State University.

From an international standpoint, farmers have relied on national commodity check off groups along with matching Foreign Agriculture Service funds to promote crops in overseas markets. In light of recent trade disputes, our national partners have indicated that they are expecting one time funding for new and innovative international marketing programs and they are counting on NCI to be a key part of those programs.

#2

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pg 1

# PASTA PRODUCTION AND TECHNOLOGY COURSE

April 30-May 2, 2019  
Northern Crops Institute  
Fargo, ND



#2  
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3-20-2019  
Pg 2



## COURSE OVERVIEW

This course introduces participants to the fundamental and applied aspects of pasta production and quality through lectures, laboratory demonstrations and hands-on processing in NCI's pilot-scale pasta processing laboratory. Grain and ingredient quality, specifications and processing variables and their impact on final pasta product quality are presented in detail. The course focuses primarily on traditional dry durum-based pasta; however, non-traditional ingredients and fresh pasta are also covered through lectures and demonstrations.



## OBJECTIVES

- Learn how to evaluate the quality of durum wheat, semolina, and pasta
- Participate in the hands-on processing of pasta in NCI's pilot-scale processing laboratory
- Learn from industry professionals on the fundamentals of pasta production, quality assurance, die manufacturing and maintenance
- Experience the commercial production of pasta with a field-trip to a state-of-the-art pasta manufacturing plant
- Gain important understanding of ingredient quality and how it impacts pasta processing and quality



## REGISTRATION DEADLINE

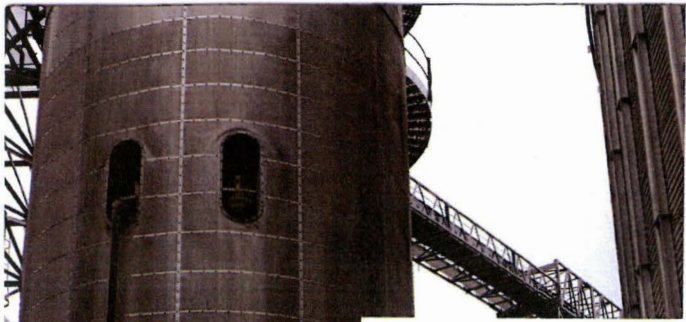
Monday, April 8th, 2019

Learn more and register at:

**[northern-crops.com](http://northern-crops.com)**







#3

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NCI

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pg 1

(Front of  
card)



### NCI-INTSOY COURSE

August 12-16, 2019

Northern Crops Institute | Fargo, ND

### COURSE OVERVIEW

This course will provide an overview of many aspects of the soy industry. The course will explore new ideas for soy-based foods and snack foods, soy as a supplement to fortify foods, soy as animal nutrition, and an overview of soy production in the U.S.

### OBJECTIVES

- Learn from industry professionals about the potential uses for soy in food products, including baking, snack foods, meat alternatives, beverages, and more!
  - Participate in the hands-on processing of soy foods and feeds
- Learn about the current status and future potential of the global soy foods industry
  - Learn about the soy industry in the United States

(Back  
of  
Card)

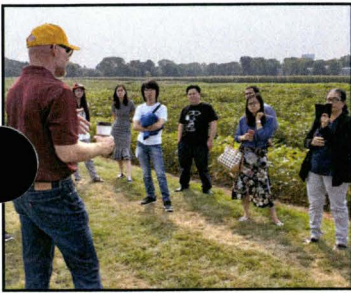
### REGISTRATION DEADLINE

Monday, July 1st, 2019

Learn more and register at:

[northern-crops.com](http://northern-crops.com)






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3-20-2019  
A91

# NCI

## Northern Crops Institute



### ND SENATE APPROPRIATIONS COMMITTEE

Senator Ray Holmberg, Chairman  
Senate Appropriations Committee

9:15 a.m., Wednesday, March 20, 2019

HB 1020

### NORTHERN CROPS INSTITUTE

Budget No. 638

- Mark Jirik, Director  
Northern Crops Institute
- Greg Kessel, Chairman  
Northern Crops Council
- Dean L. Bresciani, Ph.D., President  
North Dakota State University
- Greg Lardy, Ph.D., Associate VP for Agricultural Affairs  
North Dakota State University

## NORTH DAKOTA STATE UNIVERSITY

# 2019-2021 BIENNIAL BUDGET



[www.ndsu.edu/legislators](http://www.ndsu.edu/legislators)

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# Northern Crops Institute

Northern Crops Institute (NCI) is an international meeting and learning center that brings together customers, commodity traders, technical experts, agricultural producers, and food and industrial processors for education, discussion and technical services. A cooperative effort between North Dakota, Minnesota, Montana and South Dakota, we work to support the promotion, market development and expanded sales of crops grown in this four state region.

Some of our accomplishments are highlighted in this material. NCI continues to focus on education and technical services as mandated in the NDCC.

The Northern Crops Institute has undergone a tremendous amount of change in the last two years with over 50% of the staff being new as a result of retirements and departures. This has resulted in us closely examining our strategy, operations, and outreach.

NCI did not request or receive any new general fund initiatives in the 2017 legislative session, and is not requesting any new initiatives for 2019-2021. Our focus has been, and continues to be on growing our revenue to cover costs by adding value to the industry. We do this by providing relevant and worthwhile courses as well as generate more fee income from the industry for our processing, baking, and analytical laboratory services.

The environment that we are operating in is significantly different than in prior years due to ongoing trade concerns and disruptions as well as changing trends in the domestic market. The mission and role of NCI is as critical today as likely any time in our history. NCI will be adding more employees funded by a combination of other state support, support from our industry partners, and fee based income. In short, as long as we are adding value for the farmers, communities, states and industries we serve, we will endeavor to earn our right to grow.

At the conclusion of this biennium ending June 30, 2019, it is anticipated that NCI will have a zero ending balance in general appropriations. The majority of general appropriations covers 10 FTE's with the remaining two FTE's covered from other funds.

Engrossed HB 1020 includes a general fund budget reduction of \$37,738 from the 2017-19 biennium appropriation and recommended base increase of \$87,154 resulting in total appropriations of \$1,936,307.

For the 2019-21 biennium we are not seeking any one-time initiatives. Under a 5% budget cut as proposed by the Governor, NCI will intent to grow through the cuts by adding value to the industry and the region.

NCI continues to receive regional funding, however, without the support of the North Dakota Legislature, we would not be able to continue the level of work documented here. We appreciate your continued interest and support of the Northern Crops Institute.

Submitted by,  
Mark Jirik, Director  
Northern Crops Institute  
www.northern-crops.com  
701-231-7736

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# Northern Crops Institute

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## AGENCY STATUTORY AUTHORITY

North Dakota Century Code Chapter 4-14.2.

## AGENCY DESCRIPTION

The Northern Crops Institute (NCI) is a cooperative effort between North Dakota, Minnesota, Montana and South Dakota to support the promotion and market development of crops grown in this four-state region. NCI brings together customers, commodity traders, technical experts, agricultural producers, and food and industrial processors for education, discussion and technical services. NCI provides technical and marketing assistance through specialized training courses and technical services that facilitate domestic and international market development and expanded sales of northern grown crops. Representatives from more than 135 countries have visited NCI since its inception. Northern Crops Institute is located on the campus of North Dakota State University.

## AGENCY MISSION STATEMENT

Northern Crops Institute supports regional agriculture and value-added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern-grown crops.

## AGENCY VISION STATEMENT

Northern Crops Institute will be the international meeting and learning center to promote the northern-grown crops of the United States.

## AGENCY PERFORMANCE MEASURES

NCI provides status reports to the Northern Crops Council three times annually at Council meetings (per NDCC Section 4-14.2-02 and 4-14.2-03).

Minutes and financial reports of the following meetings of the Northern Crops Council for the 2017-2019 biennium are on file at the NCI office and with NCC members. The dates of the meetings are as follows:

- June 15, 2017
- November 14, 2017
- March 16, 2018
- June 26, 2018
- November 13, 2018
- Next scheduled meeting is tentatively set for April 1, 2019

Staff reports on educational courses, technical support of industry, future strategic plans, funding situation, and collaborative efforts with NCI's partners are given at each meeting.

The NCI also provides regular status reports on NCI accomplishments to other agencies and regional commodity groups that provide special (other) funds when requested. Those groups include: South Dakota and Minnesota Legislatures, Minnesota Department of Agriculture, and the commodity groups from the four-state region.

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**PROPOSED BUDGET REDUCTIONS**

In this critical stage in agriculture with a shifting international trade landscape and changing domestic consumer, ideally, we would not be facing a budget cut. We are faced with the difficult choice of cutting the important work that we are doing to support the agricultural industry, or to endure and grow through the budget cuts. Our work and our mission at this time is too critical not to move forward. Our focus has shifted from how can we cut, to how can we grow through the cuts with our other region support and technical services.

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## Northern Crops Institute

### AGENCY FUTURE CRITICAL ISSUES

The Northern Crops Institute was founded to promote the crops grown in North Dakota, Minnesota, Montana and South Dakota. For almost forty years, NCI has had remarkable success and evolved into a first class facility that is recognized worldwide and has earned a high level of trust for quality educational and technical expertise.

NCI is governed by the Northern Crops Council, consisting of producers from all four states as well as members of the industry. The Northern Crops Institute continues to look toward the future and endeavors to be on the leading edge of market innovation and market development. There is a belief among our stakeholders that we can be a significant agent of change for the region.

The Northern Crops Institute finds itself at a critical time of change within the organization, as well as within both the domestic and international market.

Internally, due to retirements and departures, we have seen close to 50% staff turnover in the last two years. State budget challenges have caused us to look closer at our activities and our thinking has evolved to less about we cut costs, and more about how we add value to the farmers, communities, states, and industries we serve to earn the right to grow.

We have also been challenged with some of our traditional approaches to how we conduct our courses and the structure of our organization. Getting participants from overseas continues to be a challenge due to visa concerns as well as cultural changes globally. Our use of technology and alternative educational methods have been limited to this point.

Over the last year, we have changed both the structure and positions within the organization to allow us to both expand our educational offerings as well as change some of those delivery methods. In addition, we are changing the roles to be more outward focused to increase our marketing efforts for our educational and technical service capabilities.

We are working to expand our programs for both international and domestic focused educational efforts on food, feed, and fuel. There is an increasing focus on a need for greater asset utilization and seeing the investments made by the region being put to the best use.

NCI has been fortunate to have invested in our facilities and equipment over our history, and have done so in a prudent and economic minded manner. We've utilized space, repurposed, reused, and consolidated wherever possible. However, changing food safety rules, changing industry needs, and the age of our equipment and facilities will require significant investment in the future.

Both international and domestic markets continue to present many challenges and opportunities. Recent developments in international relationships continue to highlight the need for continued education and continued focused on developing markets. While some might look at the overall situation and be disheartened, we can't lose sight of the fact that the world economy continues to grow, as does the GDP per capita.

UN projections expect total global population will grow from today's 7.6 billion people to 8.6 billion by 2050 and 11.2 billion by 2100. Recently, much of that growth has come from Asia, but it is expected that this growth will shift west to the Middle East and Africa over the coming years.

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## Northern Crops Institute

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### AGENCY FUTURE CRITICAL ISSUES (continued)

On the back of this population growth will be rising middle class incomes and demand for more protein and better diets. The traditional progression of consumer diets has seen a shift from the basic necessities to a more complex diet that includes meat, snacks, and more convenience items.

Domestically and in other developed economies, we are seeing increasing focus on foods that are seen to be healthier and in some cases more traditional. Concepts like gut health, healthy fats, plant proteins, fermented foods, ancient grains, and heritage foods continue to gain popularity and scientific study while consumer trends around eating local, heritage foods, transparent supply chains, and foods with a story are driving what the consumer is purchasing, and in some cases how they purchase their food.

Biofuel consumption also continues to grow internationally. 2018 will be the biggest year on record for ethanol exports as other countries look to find an oxygenate that will serve their environmental and economic goals.

NCI has an important place to play in all of these markets as we focus on our mission of growing both domestic and international markets for northern grown crops and expanding value added processing.

NCI has historically been successful due to the partnerships we have developed, and that cooperation will be key to any future success. These partnerships have been focused on state level commodity groups and their national check off partners. In addition, NCI has partnered with our land grant university partners in the four respective states. Our success wouldn't be possible without the support of NDSU's Plant Science (which also encompasses the Food Science program), NDSU's Department of Agribusiness and Applied Economics, NDSU's extension programs and a host of other programs at North Dakota State University, South Dakota State University, University of Minnesota, and Montana State University.

From an international standpoint, farmers have relied on national commodity check off groups along with matching Foreign Agriculture Service funds to promote crops in overseas markets. In light of recent trade disputes, our national partners have indicated that they are expecting one time funding for new and innovative international marketing programs and they are counting on NCI to be a key part of those programs.

Domestically, we continue to build relationships with organizations that help drive domestic consumption and should allow us to expand our knowledge of current trends, and increase awareness of our capability leading us to more educational efforts and technical services.

The Northern Crops Institute is committed to our mission of growing both domestic and overseas markets for northern grown crops, as well as expanding value added agriculture. The current market environment is filled with opportunities masked as challenges. We look forward to meeting these challenges in cooperation with our partners and adding value back to the farmers, communities, businesses, and the states we serve.

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**UPDATE ON NCI INITIATIVES IN 2017-2019**

NCI did not seek any new initiatives in 2017-2019.



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 Northern Crops Institute

**COMPARISON OF 2017-2019 APPROPRIATION AND ESTIMATED SPENDING**

	<b>2017-19 Appropriation</b>	<b>Actual Expenditures Through 11/30/18</b>	<b>Remaining Balance</b>	<b>Comments</b>
Total General Fund Appropriation	\$1,886,891	\$1,117,179	\$769,712	Balance will be drawn down for expenditures by end of biennium.

Source: November 2018 Appropriation Status Report  
Note: No significant changes anticipated in federal formula funds of federal grants.

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**Northern Crops Institute**

**NCI  
2019-2021 Needs-Based Budget**

Reconciliation of 2017-19 Orig. General Fund Appropriation to 2019-21 Engrossed HB1020

	<u>NCI</u>
<b>2017-19 Original General Fund Appropriation(5/31/18 Approp.)</b>	<b>\$ 1,886,891</b>
<b>Base Adjustments:</b>	
Less 2017-19 One-time Appropriations	-
Less 2017-19 Capital Projects	-
<b>Total Base Adjustmenets</b>	<b>-</b>
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>1,886,891</b>
<b>Engrossed HB1020 Base Increases (Decreases):</b>	
2%/2% salary/benefit increase and health insurance increases	87,154
Miscellaneous Expense	(37,738)
<b>2019-21 Recommended Base General Fund Increases(Decreases)</b>	<b>49,416</b>
<b>2019-21 Total Engrossed HB1020 - General Fund</b>	<b>1,936,307</b>
<b>Increase (Decrease) From 2017-19 Base General Fund Budget</b>	<b>\$ 49,416</b>
<b>Other Funds:</b>	
<b>2017-19 Original Other Fund Appropriation</b>	<b>\$ 1,755,830</b>
Remove Capital Project & One Time funds	
<b>2017-19 Adjusted Appropriation, Less Base Adjustments- (2019-21 Base Budget)</b>	<b>\$ 1,755,830</b>
<b>Engrossed HB1020 Base Increases (Decreases):</b>	
2%/2% salary/benefit increase and health insurance increases	37,010
Miscellaneous Expense	100,000
<b>Total Engrossed HB1020 Increases</b>	<b>137,010</b>
<b>2019-21 Total Engrossed HB1020 - Other Funds</b>	<b>\$ 1,892,840</b>
<b>Increase (Decrease) From 2017-19 Base Other Funds Appropriation</b>	<b>137,010</b>

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## Northern Crops Institute

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### IMPACT

The Northern Crops Institute has endeavored to tell the global consumer about the quality characteristics of the crops grown in the Northern Great Plains of the United States via education and technical services. We believe that crops grown in the northern-tier of the U.S. are valued by discriminating worldwide customers and will stand the test of quality against competitors.

NCI is the prime source of technical education about the regions food grains, feed grains, oilseeds, and pulses and their value added products. We are seeing strong demand growth for our educational programs and technical services and we are exploring new and innovative ways to achieve our mission and reach an even wider audience. This is a reflection of the success of our programs to date and the credibility of the information provided through our programs.

Results from educational programs are long-term. We provide information on marketing and technical utilization of northern-grown commodities for both domestic and export markets. This service increases the possibilities of buyers using northern-grown commodities in the future. Often purchases occur several years after educational efforts when conditions become optimal for the buyers.

One of our national partners had this to say about our programs, "I'm not sure we can directly link their purchases to course attendance but it certainly has contributed to the ongoing success of their business. They not only attend the trainings themselves, but send their customers as well. We use NCI courses to support the development of African businesses."

Crops grown in the northern tier of the U.S. are valued by discriminating customers around the globe. Since 1983, NCI has hosted crop buyers, technical experts, commodity traders, processors and producers from more than 132 nations. They come to learn more about crop quality and availability. NCI does not buy or sell crops. We teach people how to use our crops in their food and feed products and how to buy them through the U.S. grain marketing system.

In 2017 and 2018, NCI trained more than 374 professionals from 43 countries in our educational programs, with 24 scheduled short courses and customized courses. Another important part of our educational program is our activity with trade teams. In the last two years, NCI hosted 102 international visitors from 11 countries representing trade missions. In addition, NCI's staff often participates in domestic and overseas programs reaching more than 1,000 buyers and processors in the last two years alone. Our website ([www.northern-crops.com](http://www.northern-crops.com)) lists information and photos on our recent programs and trade teams, and the 2018 Annual Update is included at the end of this report.

### STATE AND REGIONAL IMPACT

Agriculture is the economic backbone in the states of North Dakota, Minnesota, Montana and South Dakota. NCI conducts programs that focus on building relationships and developing markets for our high quality crops and value added products. Agricultural exports are extremely important to the North Dakota economy with \$4.5 billion exported in 2017 (USDA ERS). Agricultural related jobs continue to be an important share of employment in all four states. The combined value of the four-state exports of agricultural products in 2017 was \$16.2 billion, accounting for 12% of the total U.S. exports. (<http://www.ers.usda.gov/Data-products/state-export-data>).

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## Northern Crops Institute

### MAJOR ACCOMPLISHMENTS

- **International business depends on personal relationships.** Offering courses at NCI remains the best means of connecting potential customers to our state and region. The hospitality displayed in our region by NCI staff, course lecturers, regional farmers and hosts for field trips to hotel, restaurant and retail personnel create positive connections to our state and region. For many international buyers of crops, developing a relationship with the producers and visiting their farms is essential.
- **Overseas seminars and service:** In 2017 and 2018, NCI staff attended twelve international seminars, events or provided technical support in Brazil, Cambodia, China, England, Indonesia, Japan, Myanmar, Peru, Philippines, South Korea, Taiwan, Thailand and Vietnam.
- **Wheat and soybean procurement training:** In 2017 and 2018, NCI educated 67 crop buyers from 22 countries at four procurement courses. These courses teach grain merchandisers how to make more effective U.S. crop purchases while managing their risk. The procurement courses continue to utilize the NDSU electronic Commodity Trading Room (CTR), which is a high-technology room with live information feeds for financial information including equities and credit, plus commodity market information such as agriculture, energy and biofuels.
- **“Barley to Beer” was a course developed in response from barley growers, who wanted a greater understanding of the malting and brewing process.** Growers and others in the industry are often the first source of knowledge for customers and consumers, especially those that represent the industry at both domestic and international marketing events. Giving them greater knowledge allows these growers to better educate and discuss the value of the crops grown in this region.
- **“Wheat to Bread” was a course developed at the request of wheat growers who wanted a greater understanding of the quality characteristics of wheat, and what determines the value of their wheat.** It was designed for those in the industry that deal with consumers, but also those involved in variety development.
- **Technical services to processors and users of regional commodities:** Food companies, small to large, regional to multinational, use NCI’s processing capabilities to develop new or modified food products and to evaluate ingredients and processing parameters under proprietary conditions. In 2018, NCI conducted in-house processing, baking investigations, and analytical testing projects for approximately 40 entities.
- **Continued demand for pasta courses:** NCI’s pasta manufacturing courses are very unique. In fact, there are no other U.S. organizations that offer pasta processing courses. Pasta courses remain in demand by U.S. and international pasta companies. In 2018, our pasta course attracted 32 participants from 3 countries and we are looking at expanding our courses as the frozen, refrigerated and fresh pasta markets continue to expand.
- **NCI Feed Center activities:** In fiscal year 2017, the NCI Feed Center made 1,487 tons of feed – 1,235 tons for teaching animals and 252 tons for research animals. In fiscal year 2018, the center made 1,388 tons – 1,180 tons for teaching animals and 208 tons for research animals.

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## Northern Crops Institute

### MAJOR ACCOMPLISHMENTS (continued)

- **Food and feed safety education:** Feed Production Center Manager Kim Koch, Ph.D., is a Trainer of Trainers and a Lead Instructor for Human and Animal Food Preventive Controls and serves on several national committees of the Food Safety Preventive Controls Alliance – the organization charged with the implementation of the training programs in support of the current Good Manufacturing Practice, Hazard Analysis and Risk Based Preventive Controls for Human Food 21 CFR 117 and Animal Food 21 CFR 507 set forward in the Food Safety Modernization Act. Trainings began in 2016 and Koch has provided training for one human food course and five animal food courses.
- **In 2018, NCI hosted two feed manufacturing courses.** One was designed with the U.S. Grains Council and Iowa State University and utilized both online content as well as in person training held at the NCI Feed Center. The second course was held in conjunction with World Initiative on Soy in Human Health (part of the American Soybean Association) for participants from Nigeria and Cambodia and was held at both the NCI Feed Production center as well as at South Dakota State Swine Production Center and traveled through southern Minnesota.
- **In 2017, NCI successfully carried out its first INT-SOY program.** The INT-SOY (International Soybean) course was held at the University of Illinois until changes at the state level caused the course to be discontinued. With the support of the regional soy groups, the course was successfully moved to NCI. Over the last two years, 51 participants from 13 countries learned about the versatility of soybeans from feed, food, to industrial uses.
- **NCI has partnered with the NDSU Experiment Station Pilot plant to utilize their Hexane Extraction unit.** In order for new varieties of oilseeds to enter production, feeding trials of the meal are generally recommended. Outside of NDSU, there are only two other hexane extraction units in operation in North America, both with long wait times. NCI has been working closely with NDSU to market and utilize this valuable piece of equipment.
- **Teaching the value of Northern Grown Wheat:** Fourteen foreign flour millers and bakers from six countries have attended the two contracting for wheat value courses at NCI in 2017-18. At the NCI's Baking Laboratory they test their own flours procured from other countries against this regions wheat varieties in breads, cakes and other baked goods for functionality and quality. In side by side comparison, baking trials from this region win every time.
- **Pulses:** dry beans, peas, and lentils. Production of these crops has seen tremendous growth. To promote these markets, NCI offered three courses in 2017-18 which addressed their utilization, functionality, and quality characteristics. NCI staff has also been featured speakers for the pulse crops at national and international seminars. Bean and lentil production continues to expand significantly in western North Dakota and eastern Montana. NCI is also actively engaged in the "Protein Highway" project, stretching across southern Canada and the Northern Plains region of the U.S..

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## Northern Crops Institute

### MAJOR ACCOMPLISHMENTS (continued)

- **Barley craft malting initiatives:** According to the Brewers Association website, the growing U.S. craft brewing industry accounted for 25% of the total malt production in 2014 and contributed almost \$3 billion to the four state economy in 2016. NCI collaborated with NDSU Plant Sciences and the Institute of Barley and Malt Sciences on three courses teaching farmers and brewers to understand malt processing and effectively interpreting barley and malt analyses. There were a total of 78 participants that attended the courses in the past two years.
- **NCI has been actively engaging with a number of organizations that have complimentary missions such as the North Dakota Livestock Alliance.** We hosted FFA alumni leaders for leadership training and a session for resiliency and stress management for agricultural education teachers in 2018. We hosted several tours for FFA members with the hope of inspiring interest in food science, innovation, and entrepreneurship.
- **In late November through mid-December, the Northern Crops Institute hosted Dennis Hoiberg of Lessons Learnt Consulting, Melbourne, Australia.** Dennis is an expert in resiliency, stress management, and dealing with change in rural and farm economies. Dennis has over thirty years working in rural environments in Australia, New Zealand and South Africa, places that are no strangers to extreme weather, market, and financial risks. Building resilient communities with the ability to manage change is an important component of building strong agricultural communities with a value added mindset. Dennis had the chance to visit with over 1,000 individuals over twenty different presentations in the region.

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# Northern Crops Institute

## PARTNERSHIPS AND LEADERSHIP

- Northern Crops Institute provides leadership in North Dakota and the nation, and in return receives collaborative assistance from many companies, regional universities, organizations and individuals. Without these partnerships, NCI could not do its work.
- Educational courses are offered in partnership with American Association of Cereal Chemists (AACC), American Feed Industry Association (AFIA), American Society for Brewing Chemists (ASBC), American Soybean Association International Marketing (ASAIM), Ameriflax, Association of Oil Chemists Society (AOCS), International Association of Operative Millers (IAOM), National Grain and Feed Association (NGFA), NDSU Extension Service, U.S. Grains Council (USGC), U.S. Soybean Export Council (USSEC), World Initiative for Soy in Human Health (WISHH), U.S. Wheat Associates (USW), USA Dry Pea and Lentil Council (USADPLC), U.S. Dry Bean Council (USDBC), the USDA/FAS Cochran Program, and others. These groups assist in identifying possible participants and often provide other resources.
- Regional universities, particularly North Dakota State University, South Dakota State University, University of Minnesota, and Montana State University, make important contributions to NCI's programs through technical, scientific, and practical applications for the use of crops in food and feed processing. Significant contributions by the NDSU Departments of Agribusiness and Applied Economics, Agricultural and Biosystems Engineering, Cereal and Food Sciences, Plant Sciences, and the use of the electronic Commodity Trading Room in NDSU's Barry Hall allow NCI to offer programs with the most sophisticated information and research.
- Commodity check-off groups and their producer members in North Dakota, South Dakota, Minnesota, and Montana continue to be major partners and supporters of Northern Crops Institute. NCI staff identify new market opportunities for regional producers and design courses to focus on wheat, soybeans, corn, barley, pulses and other specialty crops.
- The Northern Crops Council, NCI's governing board of directors, continues to provide regional four-state leadership for NCI's programs and strategic planning. NCI's Industry Advisory Board, drawn from the four-state agricultural supply and processing industries and the grain trade, provides advice, lecturers, tours, and resources for NCI programs and initiatives.

## 43 Nations Learn More About Northern-Grown Crops

In 2017 and 2018, NCI staff taught short course participants, hosted trade teams and visitors, and consulted with companies from the following countries:

Algeria	El Salvador	Mexico	Spain
Argentina	Ethiopia	Morocco	Sri Lanka
Australia	Ghana	Myanmar	Sweden
Bangladesh	Guatemala	Nigeria	Taiwan
Cambodia	Honduras	Panama	Thailand
Canada	India	Peru	The Netherlands
China	Indonesia	Philippines	Tunisia
Costa Rica	Israel	Senegal	UAE
Dominican Republic	Italy	Singapore	USA
Ecuador	Japan	South Africa	Vietnam
Egypt	Kenya	South Korea	

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FIRST ENGROSSMENT

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Sixty-sixth  
Legislative Assembly  
of North Dakota

ENGROSSED HOUSE BILL NO. 1020

Introduced by

Appropriations Committee

1 A BILL for an Act to provide an appropriation for defraying the expenses of the North Dakota  
2 state university extension service, northern crops institute, upper great plains transportation  
3 institute, main research center, branch research centers, and agronomy seed farm.

4 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

5 **SECTION 1. APPROPRIATION.** The funds provided in this section, or so much of the funds  
6 as may be necessary, are appropriated out of any moneys in the general fund in the state  
7 treasury, not otherwise appropriated, and from special funds derived from federal funds and  
8 other income, to the North Dakota state university extension service, the northern crops  
9 institute, the upper great plains transportation institute, the main research center, branch  
10 research centers, and agronomy seed farm, for the purpose of defraying the expenses of the  
11 North Dakota state university extension service, the northern crops institute, the upper great  
12 plains transportation institute, the main research center, branch research centers, and  
13 agronomy seed farm, for the biennium beginning July 1, 2019, and ending June 30, 2021, as  
14 follows:

15 Subdivision 1.

16 NORTH DAKOTA STATE UNIVERSITY EXTENSION SERVICE

		Adjustments or		
	<u>Base Level</u>	<u>Enhancements</u>		<u>Appropriation</u>
18				
19	Extension service	\$51,188,489	\$2,167,185	\$53,355,674
20	Soil conservation committee	<u>1,091,520</u>	<u>0</u>	<u>1,091,520</u>
21	Total all funds	\$52,280,009	\$2,167,185	\$54,447,194
22	Less estimated income	<u>26,646,689</u>	<u>982,267</u>	<u>27,628,956</u>
23	Total general fund	\$25,633,320	\$1,184,918	\$26,818,238
24	Full-time equivalent positions	252.98	(10.47)	242.51



1 Subdivision 2.

2 NORTHERN CROPS INSTITUTE

3		Adjustments or		
4		<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
5	Northern crops institute	\$3,642,721	\$186,426	\$3,829,147
6	Total all funds	\$3,642,721	\$186,426	\$3,829,147
7	Less estimated income	<u>1,755,830</u>	<u>137,010</u>	<u>1,892,840</u>
8	Total general fund	\$1,886,891	\$49,416	\$1,936,307
9	Full-time equivalent positions	11.80	1.00	12.80

10 Subdivision 3.

11 UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

12		Adjustments or		
13		<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
14	Upper great plains transportation	<u>\$22,060,242</u>	<u>\$777,487</u>	<u>\$22,837,729</u>
15	institute			
16	Total all funds	\$22,060,242	\$777,487	\$22,837,729
17	Less estimated income	<u>18,617,068</u>	<u>257,255</u>	<u>18,874,323</u>
18	Total general fund	\$3,443,174	\$520,232	\$3,963,406
19	Full-time equivalent positions	43.88	0.00	43.88

20 Subdivision 4.

21 MAIN RESEARCH CENTER

22		Adjustments or		
23		<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
24	Main research center	<u>\$108,642,243</u>	<u>(\$775,377)</u>	<u>\$107,866,866</u>
25	Total all funds	\$108,642,243	(\$775,377)	\$107,866,866
26	Less estimated income	<u>59,084,828</u>	<u>157,539</u>	<u>59,242,367</u>
27	Total general fund	\$49,557,415	(\$932,916)	\$48,624,499
28	Full-time equivalent positions	336.12	3.93	340.05

29 Subdivision 5.

30 BRANCH RESEARCH CENTERS

		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
1			
2			
3	Dickinson research center	(\$152,469)	\$6,673,082
4	Central grasslands research center	(56,881)	3,366,743
5	Hettinger research center	(22,900)	4,952,233
6	Langdon research center	(16,696)	2,947,911
7	North central research center	314	4,953,966
8	Williston research center	(50,125)	5,068,765
9	Carrington research center	<u>198,300</u>	<u>9,373,791</u>
10	Total all funds	(\$100,457)	\$37,336,491
11	Less estimated income	<u>459,338</u>	<u>20,741,029</u>
12	Total general fund	(\$559,795)	\$16,595,462
13	Full-time equivalent positions	(0.48)	109.81

Subdivision 6.

AGRONOMY SEED FARM

		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
16			
17			
18	Agronomy seed farm	\$26,205	\$1,562,334
19	Total special funds	\$26,205	\$1,562,334
20	Full-time equivalent positions	0.00	3.00

Subdivision 7.

BILL TOTAL

		Adjustments or	
	<u>Base Level</u>	<u>Enhancements</u>	<u>Appropriation</u>
23			
24			
25	Grand total general fund	\$261,855	\$97,937,912
26	Grand total other funds	<u>2,019,614</u>	<u>129,941,849</u>
27	Grand total all funds	\$2,281,469	\$227,879,761

**SECTION 2. ONE-TIME FUNDING.** The following amounts reflect the one-time funding items approved by the sixty-fifth legislative assembly for the 2017-19 biennium and the one-time funding items included in the appropriation in section 1 of this Act:

	<u>2017-19</u>	<u>2019-21</u>
1 <u>One-Time Funding Description</u>		
2    Seed cleaning plants	\$1,500,000	\$750,000
3    Extraordinary repairs	0	1,440,465
4    Junior master gardener program	15,000	0
5    Road and bridge asset management system	<u>300,000</u>	<u>0</u>
6    Total all funds	\$1,815,000	\$2,190,465
7    Total other funds	<u>1,700,000</u>	<u>1,940,465</u>
8    Total general fund	\$115,000	\$250,000

9            The 2019-21 biennium one-time funding amounts are not a part of the entity's base budget  
10 for the 2021-23 biennium. The main and branch research centers shall report to the  
11 appropriations committees of the sixty-seventh legislative assembly on the use of this one-time  
12 funding for the biennium beginning July 1, 2019, and ending June 30, 2021.

13            **SECTION 3. ADDITIONAL INCOME - APPROPRIATION.** In addition to the amount  
14 included in the grand total other funds appropriation line item in section 1 of this Act, any other  
15 income, including funds from federal acts, private grants, gifts, and donations, or from other  
16 sources received by the North Dakota state university extension service, the northern crops  
17 institute, the upper great plains transportation institute, the main research center, branch  
18 research centers, and agronomy seed farm, except as otherwise provided by law, is  
19 appropriated for the purpose designated in the act, grant, gift, or donation, for the biennium  
20 beginning July 1, 2019, and ending June 30, 2021.

21            **SECTION 4. ESTIMATED INCOME - STRATEGIC INVESTMENT AND IMPROVEMENTS**  
22 **FUND.** The estimated income line item in subdivision 4 of section 1 of this Act includes  
23 \$1,440,465 of one-time funding from the strategic investment and improvements fund for  
24 extraordinary repairs.

25            **SECTION 5. DICKINSON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
26 **INCOME.** The Dickinson research extension center may spend up to \$755,000 of revenues  
27 received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing  
28 operational expenses. Any revenues received in excess of \$755,000 may be spent only for  
29 one-time expenditures for the biennium beginning July 1, 2019, and ending June 30, 2021.

30            **SECTION 6. WILLISTON RESEARCH EXTENSION CENTER - MINERAL RIGHTS**  
31 **INCOME - REPORT.** The Williston research extension center shall report to the sixty-seventh

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1 legislative assembly on amounts received and spent from mineral royalties, leases, or  
2 easements in the biennium beginning July 1, 2017, and ending June 30, 2019, and the  
3 biennium beginning July 1, 2019, and ending June 30, 2021.

4 **SECTION 7. TRANSFER AUTHORITY.** Upon approval of the state board of agricultural  
5 research and education and appropriate branch research center directors, the director of the  
6 office of management and budget shall transfer appropriation authority within subdivisions 1, 2,  
7 4, and 5 of section 1 of this Act.

8 **SECTION 8. FULL-TIME EQUIVALENT POSITION ADJUSTMENTS.** The state board of  
9 higher education may adjust or increase full-time equivalent positions as needed for the entities  
10 in section 1 of this Act, subject to availability of funds. All full-time or part-time positions must be  
11 separate from North Dakota state university. Annually, the board shall report to the office of  
12 management and budget and to the budget section any adjustments made pursuant to this  
13 section.

14 **SECTION 9. UNEXPENDED GENERAL FUND - EXCESS INCOME.** Any unexpended  
15 general fund appropriation authority to and any excess income received by entities listed in  
16 section 1 of this Act are not subject to the provisions of section 54-44.1-11, and any  
17 unexpended funds from these appropriations or revenues are available and may be expended  
18 by those entities, during the biennium beginning July 1, 2021, and ending June 30, 2023.

19 **SECTION 10. EXEMPTION - WILLISTON SEED CLEANING PLANT.** The \$1,500,000 of  
20 special funds appropriation authority for the Williston research extension center included in  
21 subdivision 5 of section 1 of chapter 45 of the 2017 Session Laws for a seed cleaning plant is  
22 not subject to the provisions of section 54-44.1-11 and may be continued and expended by the  
23 Williston research extension center for the seed cleaning plant during the biennium beginning  
24 July 1, 2019, and ending June 30, 2021.

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# Northern Crops Institute Annual Update

2018

Northern Crops Institute supports regional agriculture and value-added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern-grown crops.



Connecting in the Global Marketplace

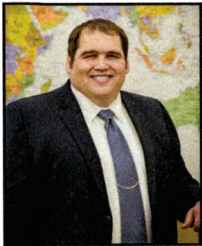


# Leadership

## Director Report | Mark Jirik

2018 was a year of tremendous change both within the region, as well as within the Northern Crops Institute.

John Crabtree and Linda Briggs both retired during the course of the year. Betsy Armour departed NCI to pursue other opportunities. All of them are missed, but this has also allowed us to look at our structure to more quickly adapt to changes in the future.



Jirik

The need for more and better educational efforts continues to expand. Brian Sorenson and Jena Bjertness were hired as program managers to lead and grow our educational programs and offerings. In 2018, we added several new courses and several other new courses are already in the works for 2019.

Grant Christian was brought on as Communications and Marketing Manager, a role that was changed to place greater emphasis on the marketing component – making sure people know who we are and what we can do on both education and technical services.

There are also many things that didn't change. Our mission to support regional agriculture and value added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern grown crops has not changed. Our commitment to the region we serve, the growers, and our collaborators is as strong as ever. Our passion for the success of our regions growers and communities, and the impact we can have locally, regionally, and internationally continues to drive us.

## Connect with us!

Did you know you can connect with NCI in more places than just [northern-crops.com](http://northern-crops.com)? Keep current with what is happening by following, liking and sharing NCI on Facebook, Twitter, YouTube and LinkedIn.



## NCC Chair Report | Greg Kessel

Greg Kessel, a producer from Belfield, North Dakota, was re-elected as chair of the Northern Crops Council at the reorganizational meeting on June 26, 2018. Tregg Cronin, a producer from Gettysburg, South Dakota, was re-elected as the vice chair of the NCC.



Kessel

In March, the NCC heard from Kimberly Atkins, the Vice President and COO of the US Grains Council who reviewed the strategic plan and forward projections on feed grains exports, ethanol, and DDGS and program highlights for the next year. Atkins toured the NCI building, Feed Production Center, and the NDSU

Commodity Trading Room at the conclusion of the meeting.

In June, US Wheat Director of Programs, Erica Oakley joined the Northern Crops Council to review US Wheat's outlook for the future and US Wheat's focus on building relationships, and markets through education, training, and demonstrating value. Oakley also highlighted the long term relationship that US Wheat and NCI have shared.

"Hearing from our partner's and their vision of the future growth of the industry helps us form the NCI's future as well and helps us understand where our future directions will be headed," stated Kessel. "As the industry changes and with the changing trading situation, we have to be willing and able to change as well."

The Northern Crops Council, made up of producers, industry representatives, and administrators from the four state region to guide the path of the Northern Crops Institute and ensures it is carrying out its mission to support regional agriculture and value added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern grown crops.

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## Retirements

John Crabtree retired in June after a thirty-three year career as the assistant director. John was responsible for NCI's short courses and also ended up being our international participant's main point of contact while they were here in Fargo. This ranged from airport pick up to handling any emergencies that happened along the way (of which there were a quite a few).

Linda Briggs retired in October after sixteen years as administrative assistant and office manager. Helping with the day-to-day running of the institute as well as making arrangements for the courses – she was the first point of contact for many at NCI.

We miss them both, but wish them well in retirement!



Assistant Director John Crabtree with a personalized gift for his retirement.

# 2019 COURSE SCHEDULE

- January 22-24**  
Preventive Controls for Animal Food
  - April 30 - May 2**  
Pasta Production and Technology
  - May 14-17**  
Baking with Hard Red Spring Wheat
  - May 21-24**  
Soy Based Texturized Protein and Meat Analog
  - June 19-21**  
Preventive Controls for Animal Food (Brookings, SD)
  - June 24-26**  
Preventive Controls for Human Food
  - July 30 - August 2**  
Baking with Whole Wheat & Whole Grains
  - August 12-16**  
NCI-INTSOY
  - September 9-18**  
Grain Procurement Management for Importers
  - September 30 - October 3**  
Barley and Malt Quality:
  - October 7-11**  
Soybean Procurement Management for Importers
- Other courses will be added to our schedule as the year progresses. Please check our website [www.northern-crops.com](http://www.northern-crops.com) for the most up-to-date information.

## 2018-19 Northern Crops Council (NCC)

**Greg Kessel, Chair**  
Belfield, ND  
ND Barley Council

**Tregg Cronin, Vice Chair**  
Gettysburg, SD  
SD Wheat Commission

**Dean Bresciani, Ph.D.**  
Fargo, ND  
President  
North Dakota State University

**Anthony Chavez**  
Minneapolis, MN  
Buhler Inc.

**Kris Folland**  
Halma, MN  
MN Soybean R&P Council

**Doug Goehring**  
Bismarck, ND  
Commissioner of Agriculture  
ND Department of Agriculture

**Ken Grafton, Ph.D.**  
Fargo, ND  
VP Agricultural Affairs  
North Dakota State University

**Justin Halvorson**  
Sheldon, ND  
ND Corn Growers Association

**Randy Hinebauch**  
Chinook, MT  
MT Wheat & Barley  
Committee

**Dave Katzke**  
Minneapolis, MN  
General Mills

**Mark Martinson**  
Rolette, ND  
U.S. Durum Growers  
Association

**John Swanson**  
Mentor, MN  
MN Corn R & P Council

**Todd Sinner**  
Casselton, ND  
SB&B Foods

**Greg Svenningsen**  
Valley City, ND  
ND Wheat Commission

**Vance Taylor**  
Grand Forks, ND  
North Dakota Mill

**Troy Uglem**  
Northwood, ND  
ND Soybean Council

**Ben Vig**  
Sharon, ND  
ND Oilseed Council

**Chris Westergard**  
Dagmar, MT  
Northern Pulse Growers  
Association

**Chris Wiegert**  
Watertown, SD  
Healthy Food Ingredients

Thank You

# Thank You to All Who Supported NCI Programs and Activities in 2018

- North Dakota State University
  - Agribusiness and Applied Economics
    - Frayne Olson, Ph.D.
    - William Wilson, Ph.D.
    - David Bullock, Ph.D.
  - Agricultural and Biosystems Engineering
    - Kenneth Hellevang, Ph.D.
  - Cereal and Food Sciences
    - Clifford Hall, Ph.D.
  - Plant Sciences
    - John Barr
    - Paul Schwarz
    - Elias Elias, Ph.D.
    - Rich Horsley, Ph.D.
    - Frank Manthey, Ph.D.
    - Senay Simsek, Ph.D.
    - DeLane Olsen
    - Kristin Whitney
- Adam's Family Farm, Grand Forks, ND
- ADM
  - Ross Wyatt
- AGT Foods U.S.A.
  - Eric Bartsch
- Alton Grain Terminal
  - Scott Altoff
  - Mark Wild
- AmeriFlax
  - Sheri Coleman
- Amity Technology LLC
  - Howard Dahl
- Ardent Mills
  - Kurt Becker
- Askegaard Organic Farm, Fargo, ND
- Benson-Quinn Co.
  - Thomas Lahey
- BNSF Railway Inc.
  - Jennie Hubert
  - Darrell Faircloth
  - Brandon Mortenson
- Briess Malt and Ingredients
  - Cassie Poirier
- Brushvale Seed Inc.
  - Travis Meyer
- Buhler, Inc.
  - Anthony Chavez
  - Eugene Dust
  - Michael Ehr
  - Aidin Milani
  - Rene Steiner
- Busch Agricultural Resources
  - Alan Slater
- Canadian Northern Railway
  - Bryan Paskewicz
- Cargill, Inc.
  - Katie Jorgenson
  - April Morgan
  - Teresa Kurkowski
- Central Farm Service Elevator
  - Jim Schulz
- CHS, Inc.
  - Brian Bleyl
  - Taylor Smalley
  - Yuxi Weng
  - Ryan Caffrey
  - Dick Carlson
- Anita Florido
- Justin Friesz
- Mike Klein
- Greg Oberle
- Colfax Farmers Elevator Inc.
  - Paul Sanderson
- Columbia Grain
  - Darren Bjornson
  - Mike Brinda
  - Ron DeJongh
- CW Valley Coop
  - Curt Bjertness
- Dakota Global
  - Travis Maddock
- Dakota Growers Pasta Company Inc.
  - Alexis Freier-Johnson
  - David Hahn
- Dakota Specialty Milling Inc.
  - Robert Meyer
- De Mari Pasta Dies USA
  - Gabriele Cannata
- Demaco
  - Leonard De Francisci
  - Joseph De Francisci
  - Al Lucia
- Duluth Seaway Port Authority
  - Kate Ferguson
  - Adele Yorde
- Dupont
  - David Sabbagh
  - Grace Arney
- Fargo Brewing Company
  - Chris Anderson
- Frontier Futures Inc.
  - Adam Knosalla
- General Mills
  - Dave Katzke
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- Gillespie Family Farms, Johnson, MN
- Global Innovative Solutions
  - Gene Griffin
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  - Roger Mortenson
- HC International, Inc.
  - Curt Petrich
- Healthy Food Ingredients
  - Jennifer Tesch
  - Chris Weigart
- Hunter Grain Company
  - Scott Murch
- Insta-Pro International
  - Dave Albin
  - Katie Mayo
- Intelligent Malt
  - Chris Anderson
  - Katrina Christiansen, Ph.D.
- Kansas State University
  - Grain Science and Industry
  - Shawn Thiele
- Kelley Bean
  - John Bartsch
- Land O'Lakes
  - Scott Waldner
- Legume Matrix
  - Kevin Haas
- Lindeman Farm, Brownnton, MN
- Maple River Grain & Agronomy, LLC
  - Terry Johnson
  - Jeremy Rolf
- Minneapolis Grain Exchange
  - Joe Albrecht
  - Mark Bagan
- Minnesota Barley Council
  - Marvin Zutz
- Minnesota Corn Growers Association
  - Adam Birr
- Minnesota Corn Research & Promotion Council
  - Dwight Mork
- Minnesota Department of Agriculture
  - Ben Thomas
- Minnesota Soybean Growers Association
  - Kyle Raguse
- Minnesota Soybean Research & Promotion Council
  - Kim Nill
  - Drew Parsley
  - Tom Slunicka
- Minnesota Wheat Research & Promotion Council
  - Dave Torgerson
- Montana Department of Agriculture
  - Ben Thomas
- Montana Wheat and Barley Committee
  - Randy Hinebauch
  - Collin Watters
- National Sunflower Association
  - John Sandbakken
- Natural Products Inc.
  - Paul Lang
  - Jon Stratford
- North Dakota Agricultural Weather Network
  - Daryl Ritchison
- North Dakota Barley Council
  - Steve Edwardson
  - Greg Kessel
- North Dakota Corn Growers Association
  - Justin Halvorson
- North Dakota Corn Utilization Council
  - Dale Ihry
- North Dakota Department of Agriculture
  - Doug Goehring
- North Dakota Farm Bureau
  - Jeff Missing
- North Dakota Farmers Union
  - Mark Watne
- North Dakota Grain Dealers Association
  - Stuart Letcher
- North Dakota Grain Growers Association
  - Dan Wogsland
- North Dakota Grain Inspection Service
  - Mark Adams
- North Dakota Mill & Elevator
  - Vance Taylor
- North Dakota Oilseed Council
  - Donna Ellison
  - Benjamin Vig
- North Dakota Soybean Council
  - Derik Pulvermacher
  - Stephanie Sinner
  - Harrison Weber
  - Nancy Johnson



Thank You

North Dakota Wheat Commission  
Neal Fisher  
Erica Olson  
Jim Peterson  
Greg Svenningsen

Northharvest Bean Growers Association  
Tim Courneya

Northern Canola Growers  
Barry Coleman

Northern Plains Potato Growers Association  
Charles Gunnerson

Northern Pulse Growers Association  
Shannon Berndt  
Chris Westergard

O'Leary Farm, Danvers, MN

Prairie Aquatech  
Dennis Harstad

Proseed  
Keith Peltier

Rahr Malting Co.  
Jesse Theis  
Curt Jacobson  
Aaron Eernisse  
Xiang Yin

Red River Commodities  
Robert Majkrzak

Red River Valley Sugarbeet Growers Association  
Duane Maatz

Richland IFC Inc.  
Rick Brandenburger

Riverbend Malting  
Brent Manning

SB&B Foods  
Robert Sinner  
Todd Sinner

South Dakota Corn Utilization Council  
Lisa Richardson

South Dakota Department of Agriculture  
Mike Jaspers

South Dakota Soybean Processors Inc.  
Thomas Kersting

South Dakota State University  
Dairy & Food Science Dept.  
John Haberkorn  
Dept. of Animal Science  
Robert Thaler, Ph.D.  
Keith Underwood  
Dept. of Biology & Microbiology  
Bill Gibbons  
Dept. of Economics  
Lisa Elliott, Ph.D.

South Dakota Wheat Commission  
Reid Christopherson  
Tregg Cronin

Stone Arch Commodities  
Hunter Kaestner

Swenson Farms, Walcott, ND

The Money Farm, Fargo, ND  
Mike Krueger

The Scoular Company  
Walter Lanza

The Soyfoods Council  
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Noah Brook

U.S. Durum Growers Association  
Mark Martinson  
Deana Wiese

U.S. Wheat Associates  
Steve Wirsching

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Dept. of Agricultural & Consumer Economics  
Craig Gundersen, Ph.D.

University of Minnesota  
Dept. of Agronomy & Plant Genetics  
Seth Naeve, Ph.D.  
Jochum Wiersma, Ph.D.

Valley Malt  
Andrea Stanley

Wenger Manufacturing Inc.  
Brian Plattner

### Thank You 2018 Agribusiness Sponsors!

AgCountry Farm Credit Services  
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ND Soybean Growers Association  
North Dakota Trade Office Inc.  
Northern Canola Growers Association  
Northern Plains Potato Growers Association  
Northern Pulse Growers Association  
ProSeed  
Red River Commodities  
Richland IFC Inc.  
RRV Sugarbeet Growers Association  
Sinner Brothers & Bresnahan Farm  
Sue and David Katzke  
US Durum Growers

## NCI Thanks Outgoing NCC Members for Their Service

The Northern Crops Council is the governing body for the Northern Crops Institute. They dedicate their time and talent to making sure NCI is focused on our mission and properly utilizing the time and resources of the institute.

We would like to thank the following outgoing council members for their service: Keith Peltier, ProSeed, who served as industry representative from West Fargo, ND. Dwight Mork, producer from Bellingham, MN who represented Minnesota Corn Research and Promotion Council; and Drew Parsley, producer from Warroad, MN who represented the Minnesota Soybean Research and Promotion Council.



Former NCI Director Mark Weber presents Keith Peltier, ProSeed, who served as industry representative from West Fargo, ND, a gavel plaque for his service.

### A Special Thank You to Our 2018-2019 Funding Partners

Minnesota Department of Agriculture  
Minnesota Soybean Research and Promotion Council  
Minnesota Wheat Research and Promotion Council  
Montana Wheat and Barley Council  
State of North Dakota  
North Dakota Soybean Council  
Northharvest Bean Growers  
North Dakota Wheat Commission  
South Dakota Department of Agriculture  
South Dakota Soybean Research and Promotion Council  
South Dakota Wheat Commission

# Highlights

## 2018 Brings New Faces and Directions to NCI's Educational Efforts

NCI's 2018 educational programming got off to a great start in April with the "Pasta Production and Technology" course, and finished with the "Barley to Beer" and "Wheat to Bread" courses in November, for a total of 12 courses.

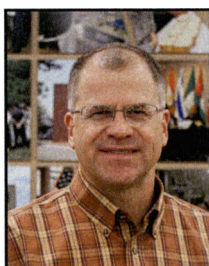
After 34 years at NCI, Assistant Director John Crabtree began a well-deserved retirement on June 29, 2018. In his role, John ran all of the educational courses at NCI, in addition to assisting in many of the day to day responsibilities under five directors.

In place of an assistant director, two program managers were hired to focus on increasing the number of educational programs that NCI offers, for both overseas as well as domestic markets, and increase the presence of NCI in the industry.

NCI welcomed Jena Bjertness and Brian Sorenson to the NCI team in July; Bjertness joined NCI from the Nutrition Lab in the Animal Science department at NDSU, and has an M.S. degree in Animal Science and a strong background in animal nutrition. NCI welcomed back Brian Sorenson who returns to NCI after seven years at Dakota Specialty Milling. He has an M.S. degree in Cereal Chemistry and a career focused on grain quality and food processing. Brian and Jena jumped right in to our busy course calendar in July, and completed the year in November.



Bjertness



Sorenson

At the request of industries, we added several new course offerings over the last year, most notably the Soybean Meal Procurement course directed to Southeast Asian buyers. In the process of organizing a number of procurement courses, NCI has looked at how we can consolidate some of our content and deliver it more effectively. In 2019, instead of having a soy procurement, food grade soy procurement, and soybean meal procurement, we will be having a general soy procurement with multiple tracks for embedded into the course for more specific requirements.

Several of our partner organizations asked that we conduct training for those farmers and partners that talk directly to customers and policy both domestically and worldwide. As one of them said, "Most people know barley goes into beer, but most don't know how it got there." As a result, we added two new courses, targeted towards our farmer board members and industry partners called, "Barley to Beer" and "Wheat to Bread."

The fast changing trade relationships highlight the need for NCI to be nimble and adjust with the needs of the industry. NCI will continue to work with our international partners such as USSEC, WISHH, US Wheat Associates, and USGC to ensure we are working hand in hand with them helping grow markets and value for our crops beyond our borders.

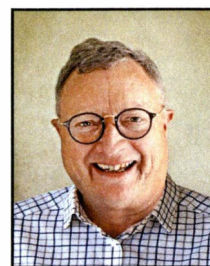
A key part of our mission is focusing on the domestic markets and growing value added agriculture. Going forward, we will be developing courses and programs designed for our region and serving our domestic consumers.

Part of that will be in evaluating how we can be in front of emerging trends in the market place, part of that will be working with our partners on bringing new value added products to the marketplace. An example of this is in 2019 we will be holding our first high oleic soybean oil course.

NCI will continue to leverage the strengths that we have at our disposal including a food and animal food safety experts, pilot scale processing equipment, training feed mill, and regional expertise.

## NCI Hosts Resiliency Expert Dennis Hoiberg

In late November through Mid-December, the Northern Crops Institute hosted Dennis Hoiberg of Lessons Learnt Consulting, Melbourne, Australia. Dennis is an expert in resiliency, stress management, and dealing with change in rural and farm economies. Dennis has over thirty years working in rural environments in Australia, New Zealand and South Africa, places that are no strangers to extreme weather, market, and financial risks. Building resilient communities with the ability to manage change is an important component of building strong agricultural communities with a value added mindset.



Hoiberg

Dennis had the chance to visit with over one thousand individuals and conducted over twenty different presentations; spreading his message of HOPE (Habits, Optimism, Planning, Enacting) with a blend of science, humor, and real life experience.

In early 2019, NCI will be releasing short video clips on social media highlighting the key messages that Dennis shared with the audiences.

"The receptiveness of the people, the willingness of people to listen to my message, and the willingness of people to share their experience, highlighted the need for the message." Said Hoiberg.

Dennis' trip was made possible with financial help from AgCountry Farm Credit Services, Minnesota Wheat, Minnesota Corn, and the Minnesota Department of Agriculture.

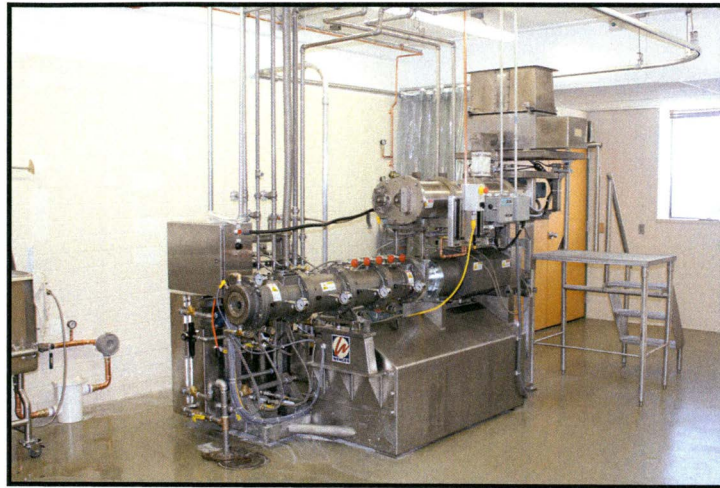
## NCI's Wenger TX-52 Twin-Screw Extruder Capabilities

The four-state region that the Northern Crops Institute serves produces a wide range of grain, pulse, and oilseed crops. Most of those crops can be utilized either solely or in combination to produce an array of food, feed, and industrial products through the use of extrusion technology. The Northern Crops Institute utilizes a Wenger Model TX-52 twin-screw, co-rotating extruder to convert northern crops into useful and nutritious food and feed as well as interesting industrial products. The Northern Crops Institute hosts visitors from around the globe to view Wenger Model TX-52 twin-screw demonstrations, attend educational courses and training seminars, and conduct product development to improve existing products or develop new products.

In recent years, twin screw extruders have seen increased utilization for new products with intricate shapes, novel ingredients, and unique sizes, which are beyond the capabilities of single-screw extrusion systems. Twin-screw extruders can fill many of these food, feed, and industrial needs. The term "twin-screw" applies to extruders with two screws of equal length, placed next to each other inside an extrusion barrel. Twin-screw extruders are much more complex than single-screw extruders, however, twin-screw extruders provide much more flexibility and better control.

The Northern Crops Institute has three extrusion experts on staff. The three staff members compliment each other in their respective areas of expertise so that a broad range of extrusion-related expertise can be provided to industry clients. Dr. Kim Koch, Feed Production Center Manager, has experience in feed and food extrusion technology theory and application throughout his career. Mr. Rilie Morgan, Process Manager, has over a dozen years of experience operating the Institute's Wenger TX-52 twin-screw extruder and has utilized many of the crops produced in the four-state region. Dr. Zach Liu, Food Scientist, has expertise in understanding chemical and physical interactions of ingredients that are processed with twin-screw extrusion technology.

The Northern Crops Institute staff employs twin-screw technology to provide client-



Wenger TX-52 Twin-Screw Extruder

**Products Range**

- \* Expanded Snacks (Baked/Fried)
- \* Breakfast Cereals
- \* Snack Pellets (Half Products)
- \* Pasta

**\* Pet food**

- \* Animal Feed - Specialty
- \* Texturized Vegetable Protein
- \* Meat Analogs
- \* Pregelatinized Flours and Meal
- \* Industrial Ingredients and more

based product development services and to provide instructional demonstrations for the Institute's educational courses. The food industry is continuously demanding new innovations and new products. Twin-screw extruders were adopted by the food industry about 30 years ago to provide new products for the food industry. Originally developed for the plastics industry, twin-screw extruders were first used by candy manufacturers for hard to extrude soft candies, but have become very popular with food, feed, and industrial products manufacturers to produce many highly specialized products.

The Institute's Wenger TX-52 twin-screw extruder system consists of several sub-components that include a live bin, a feeding screw, a preconditioning chamber, an extruder barrel, jacketed heads, rotating screws, and a cutting die head. The Institute's twin-screw has three primary processing zones: feeding, kneading, and final processing zone involving the device's twin-screws. The Institute's Wenger twin-screw extruder has greater ability and flexibility for controlling both product and process parameters than conventional single screw extruders. The twin-screw's design, allows for easy cleaning and rapid product changeover. The twin-screw extruder has more control over process and product variability due to the ability to more closely match desired shear during extruder operation. Products produced on

the Wenger TX-52 twin-screw extruder can be dried by either the Institute's Buhler OTW-50 Fluid Bed Dryer or Lincoln Air Impingement Oven/Toaster.

The Institute's Wenger TX-52 twin-screw extruder has such flexibility that it allows the production of a wide variety of high-value products at low processing volumes. Product and process parameters derived from the twin-screw extruder can closely match large scale production extruders. This fact encourages food and feed manufacturers to undergo process and product development with confidence at the Northern Crops Institute and obtain real-world information on their quest to develop new products, introduce innovation, optimize processes, introduce new ingredients in exiting products, or simply fine-tune exiting products.

The Northern Crops Institute's Wenger TX-52 Twin-screw Extruder provides an opportunity to educate food industry professionals on twin-screw extrusion technologies, to explore new ideas, to develop new processing methods, and to produce new experimental products. The Northern Crops Institute's staff has expertise to educate interested parties on twin-screw processing, to analyze unique twin-screw extrusion industry needs and apply the most pertinent and effective twin-screw technology to satisfy those needs.

## Educational Courses

### Pasta Production and Technology

Ecuador, Canada, USA • April 17-19, 2018



This course provided participants with good basic knowledge of Durum wheat, from breeding to production and quality, as well as the milling of Durum into semolina and quality analysis. Industry professionals lectured on all aspects of the equipment and commercial production of pasta from Durum and non-traditional crops. The participants received hands-on experience in the production and quality testing of pasta in NCI's pilot-scale processing and analytical laboratories.

### Tunisian Feed Manufacturing

Tunisia • July 16-20, 2018



In conjunction with the U.S. Grains Council, NCI, along with Iowa State University hosted a group of 15 feed millers for a "train the trainer" course. These individuals were tasked with managing feed milling operations installed in Tunisia with the help of the U.S. Grains Council. The group started with one week of coursework in Iowa, where they covered basic nutritional needs of animals and some feed milling techniques, along with feed mill tours. They traveled to Fargo to spend a week at the NCI feed mill with Dr. Kim Koch to cover in depth feed mill management, and enjoyed visiting a farm in Hillsboro with the help of the ND Corn Growers Association.

The course was sponsored by:

- U.S. Grains Council

### Southeast Asia Contracting for Wheat Value

Indonesia, Philippines, Vietnam • August 8-10, 2018



Quality control and purchasing personnel from South Asia attended the course. At the course, wheat buyers learned how to better manage supply chains and how to write contracts that accurately specify the wheat they want to purchase. The participants learned about wheat quality testing and procurement through lectures and end-product evaluations.

The course was sponsored by:

- U.S. Wheat Associates

## Educational Courses

### Commodity Soybean Meal Procurement Mgmt. for Importers Myanmar, Cambodia, China • August 13-17, 2018

Participants from Myanmar, Cambodia, and China arrived at NCI in Fargo to learn about risk management in procuring U.S. soybean meal. We worked with the United States Soybean Export Council and World Initiative for Soy in Human Health to recruit participants for this course. The group started with classroom work in Fargo, and traveled to Minneapolis with a farm tour in Danvers, MN along the way; MN Soybean Research and Promotion Council assisted in arranging this farm tour. In Minneapolis, participants were able to meet with traders to discuss trade relationships, and visit a transloader and container yard to learn more about how the soybean meal gets from the field to their countries. Thanks to the North Dakota Soybean Council, the Minnesota Soybean Research and Promotion Council, and the South Dakota Soybean Research and Promotion Council for sponsoring this course.

The course was sponsored by:

- North Dakota Soybean Council
- Minnesota Soybean Research and Promotion Council
- South Dakota Soybean Research and Promotion Council



### NCI-INTSOY

#### Ghana, Indonesia, Myanmar, Philippines, Senegal, Sri Lanka, Japan, USA • August 19-25, 2018

NCI brought in many experts from across the grain and food industry to educate participants with a fundamental knowledge on the production and quality of soybeans, and the processing of many different food and feed products made from soy. The team assembled in Minneapolis for an opening reception, and toured Buhler's plant in Plymouth and Gillespie Farms near Johnson, MN on their way to Fargo for one day of lectures and laboratory demonstrations before traveling to South Dakota State University for additional lectures and demonstrations related to the food and feed uses of soy, including Prairie Aquatech's pilot-scale feed processing plant and fish farm. The team traveled to Mankato to visit the CHS soybean crush plant, followed by the graduation dinner with producers and staff with the Minnesota Soybean Research and Promotion Council. The team also visited the Central Farm Service shuttle-train loading facility in Randolph, MN before the conclusion of the course in Minneapolis.

The course was sponsored by:

- American Soybean Association (WISHH Program)
- Minnesota Soybean Research and Promotion Council
- North Dakota Soybean Council
- Northern Food Grade Soybean Association
- U.S. Soybean Export Council



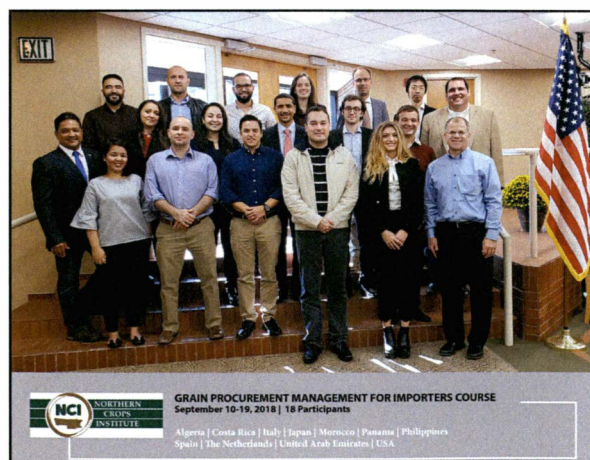
### Grain Procurement Management for Importers

#### UAE, Algeria, Costa Rica, Italy, Japan, Morocco, Netherlands, Panama, Philippines, Spain, USA • September 10-19, 2018

This year's course was a wonderful opportunity to bring together 19 people from 11 countries to learn about the production, quality, storage and handling of grains produced in the four-state region that NCI represents. Professors from NDSU Department of Agribusiness and Applied Economics and industry consultants covered topics related to grain procurement and risk management, including hedging, futures, and options. Industry experts gave presentations on rail transportation, grain sampling and inspection, as well as the economic opportunities caused by weather. NCI led the class on tours at Hunter Grain Cooperative; Richtsmeier Farm (near Hunter, ND), Alton Grain Terminal Elevator, CHS Terminal Elevator in Superior, WI, and the CHS Barge Loading Facility in Savage, MN. The participants met with the Duluth Seaway Port Authority, and nine representatives of the grain trade at the Minneapolis Grain Exchange in Minneapolis. The team also enjoyed time at Itasca State Park (MN) and a charter-boat tour of the Duluth Harbor.

The course was sponsored by:

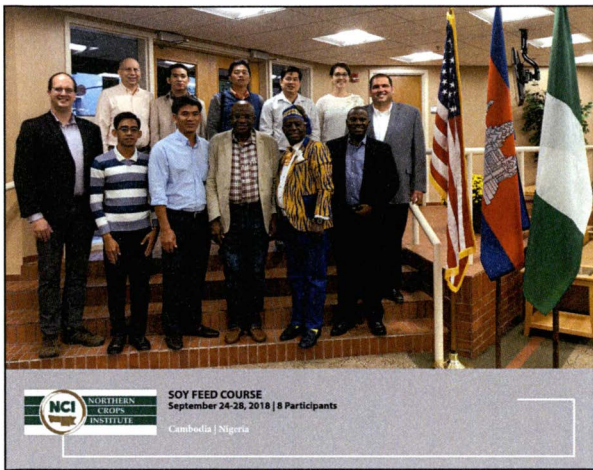
- U.S. Wheat Associates
- U.S. Grains Council



# Educational Courses

## Soy Feed Course

Nigeria, Cambodia • September 24-28, 2018



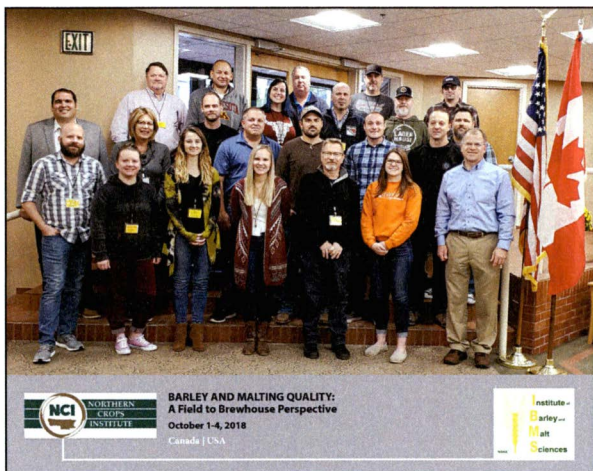
In conjunction with the World Initiative for Soy in Human Health sector of the American Soybean Association, NCI hosted eight participants from Nigeria and Cambodia to come to the Midwest and learn more about how soybean products can be used in livestock feeds. The group had some risk management and economics coursework at NCI, and then spent a few days at the feed mill with Dr. Kim Koch for some hands-on training. The group then traveled to Brookings, SD to tour their hog facility and discuss swine nutrition, they also delved in to aquaculture feeds and toured Prairie Aquatech to learn more about their process and soy product. The group then traveled to Minneapolis, with a stop in New Ulm to hear from a poultry nutritionist and a farm tour in Brownton, MN arranged by MN Soybean Research and Promotion Council. In Minneapolis, the group met with traders to discuss trade relationships, and toured the International Feed and Grain container loading facility to see how the product reaches their country.

The course was sponsored by:

- World Initiative for Soy in Human Health, American Soybean Association

## Barley & Malt Quality: Field to Brewhouse Perspective

USA • October 1-4, 2018



This year's course was held at NCI. NDSU Plant Sciences and the Institute of Barley and Malt Sciences coordinated the course. There were lectures, discussion sessions and laboratory demonstrations that provided participants with knowledge to understand malt processing and to effectively interpret barley and malt analysis.

## Food Grade Soybean Procurement Management for Importers

South Korea, Thailand, Myanmar, China, India • October 8-12, 2018



Northern Food Grade Soybean Association sponsored a Food Grade Soybean Procurement course for eight participants at NCI this fall. The participants spent most of their time learning about risk management practices, and were able to meet with food grade soybean suppliers to discuss issues that are important to both suppliers and buyers. The participants also got to tour a food grade soybean processing facility, see a demonstration on how to make soymilk, and tour American grocery stores to see what food grade soy products are available to American consumers. Finally, both suppliers and buyers of food grade soybeans presented information about their companies to help foster future trade relationships.

The course was sponsored by:

- North Dakota Soybean Council
- Minnesota Soybean Research and Promotion Council
- Northern Food Grade Soybean Association

## Educational Courses

### Barley to Beer

USA • November 14, 2018

NCI hosted an inaugural course showing farmers and people involved in various sectors of the barley industry how barley becomes beer. The group learned some basics about barley and malt production, and spent the better part of a day with a local brewer learning about the brewing industry. This course facilitated thought-provoking and productive conversations between people from all segments of the barley industry – from farmers, to elevator personnel, to industry people charged with producing beer as the end product for consumption.

The course was sponsored by:

- MN Barley
- MT Wheat and Barley
- ND Barley Council



### Wheat to Bread

USA • November 15, 2018

With the help of many commodity groups in the four state region (MN Barley, MT Wheat and Barley, ND Barley Council, MN Wheat, ND Wheat Commission, and SD Wheat), NCI hosted an inaugural set of courses showing farmers and people involved in the agriculture industry how the commodity they work with becomes a consumable – in this case, how barley becomes beer and how wheat becomes bread. The barley to beer group learned some basics about barley and malt production, and spent the better part of a day with a local brewer learning about the brewing industry. The wheat to bread group discussed wheat production basics, and spent the rest of their day working with several bakers both from industry and NCI to learn the basics of bread making and dough quality. These courses facilitated thought-provoking and productive conversations between people from all segments of their industries – from farmers, to elevator personnel, to industry people charged with producing an end product for consumption.

The course was sponsored by:

- MN Wheat
- MT Wheat and Barley
- ND Wheat Commission
- SD Wheat



### Private Courses

In addition to doing technical services, NCI hosts privately sponsored courses for companies and individuals that want to gain both the technical and scientific knowledge and the hands on processing experience. The courses can be customized to fit the needs and desires of the customers for as few as one or two people, and as many as forty. For cost of these programs, please reach out to NCI staff.

**PRIVATE COURSES AVAILABLE**

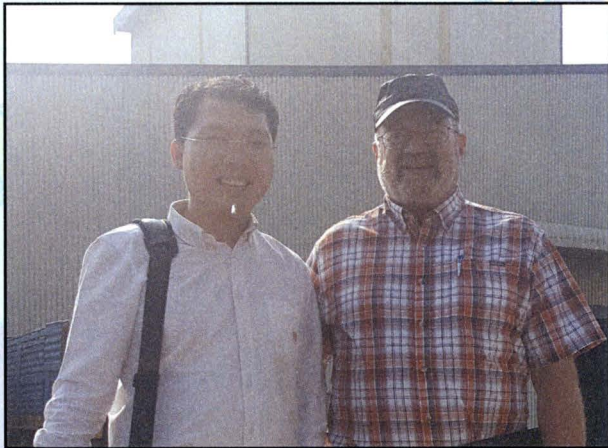
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# Global Marketing

Algeria...Cambodia...Canada...China  
 Costa Rica...Ecuador...Ghana  
 India...Indonesia...Italy...Japan  
 Morocco...Myanmar...Netherlands...Nigeria  
**Buyers from 27 Nations  
 Educated by NCI in 2018**  
 Panama...Philippines...Senegal...Singapore  
 South Korea...Spain...Sri Lanka...Thailand  
 Tunisia...United Arab Emirates...  
 United States of America...Vietnam



**Prior Lake, MN USA | March 5-7**  
 MN Grain and Feed held a Preventive Controls for Animal Food Safety, PCQI, course. Feed Production Center Manager Kim Koch, David Fairfield of National Grain and Feed Association (NGFA), and Doug Mancini of the MN Dept. Ag, were the instructors.



**Cambodia | April 2-11**  
 Feed Production Center Manager Kim Koch attended the International Food Technology Program in Cambodia. The event was sponsored by World Initiative for Soy in Human Health (WISHH) which is a subsidiary of the U.S. Soybean Export Council (USSEC) as they branch out into animal food production. He had meetings with representatives of five animal food companies, visited three production sites and delivered a two day seminar to Agri-Master Ltd., the largest animal food producer in Cambodia.



**China | April 12-14**  
 Food Scientist, Zhisheng (Zach) Liu, attended the China International Soyfood Processing Technology and Equipment Exhibition. NCI had an exhibit during the meeting. Zach was also invited by the North Dakota Trade Office to deliver a presentation titled "Introduction of North Dakota IP Soybeans" to attendees.



# Global Marketing



## 2018 AOCs Annual Meeting & Expo May 6-9

Minneapolis, Minnesota, USA

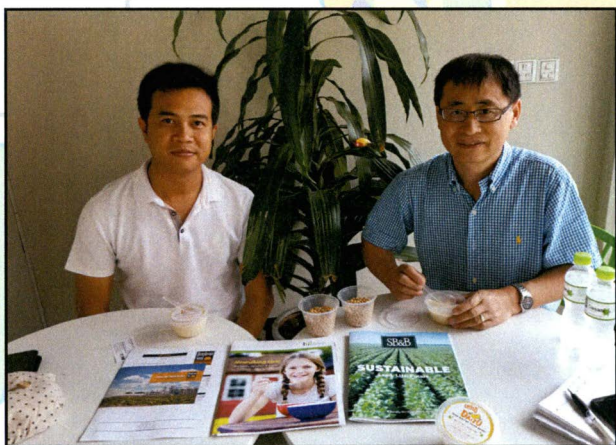


### Hutchinson, MN USA | April 28

Feed Production Center Manager Kim Koch, attended a one day seminar sponsored by Form-A-Feed for their personnel to share with them the latest developments in pelleting equipment, production techniques, and to allow them to ask questions. He and Alan Vering of California Pellet Mill were the presenters.

### Minneapolis, MN USA | May 6-9

Neil, Zach and Kim attended the American Association of Oil Chemists Annual Meeting & Expo. The expo is a premier international science and business forum on fats, oils, surfactants, proteins and related materials. It was also a good opportunity to learn and connect with other professionals in industry and academia.



### Cambodia, Myanmar | June 11-23

Food Scientist, Zhisheng (Zach) Liu, was invited by ASA WISHH to take a trip to Cambodia and Myanmar. This trip was funded by the North Dakota Soybean Council. During the trip, Zach visited 8 soy foods companies in three cities. These companies received US food grade soybean samples and are interested in buying US soybeans because of quality and price. Through each technical problem/question Zach always validated the necessity of using/purchasing U.S. food grade identity preserved soybeans.



### Ecuador, Chili | June 29

Northern Crops Institute welcomed trade teams from Ecuador and Chili. The North Dakota Wheat Commission hosted the team.

# Global Marketing



## Ames, IA USA | July 9-20

Feed Production Center Manager Kim Koch attended a program that was sponsored by U.S. Grains Council (USGC) using funding from a USDA grant to prepare a group of Tunisia feed industry professionals to become instructors in the "new" feed technology training center that is being created in Tunis. The program was split between Iowa State University and Northern Crops Institute; with ISU doing theory of feed technology and NCI doing practical application using the NCI feed center for "hands-on" training.

## Mexico | July 10

Northern Crops Institute welcomed the trade team from Mexico. The North Dakota Barley Council hosted the team.



## Chicago, IL USA | July 15-18

Food Scientist, Zhisheng (Zach) Liu, attended the IFT Annual Meeting & Expo. This event showcases products like food ingredients, equipment, processing, and packaging suppliers etc. in the food & beverage industry. It was a good opportunity to learn and connect with other professionals in industry and academia.

## Japan | July 27

Northern Crops Institute welcomed the trade team from Japan. The North Dakota Wheat Commission hosted the team.

# Global Marketing



## Kansas City, MO USA | August 28-30

Neil, Zach and Brian attended the 2018 U.S. Soy Global Trade Exchange & Midwest Specialty Grains Conference & Tradeshow. NCI was an exhibitor at the Expo, allowing us to make new connections and re-connect with many of the key people in the various industries. Of special note, the team of ten Indonesian participants of the NCI-INTSOY course also attended the GTE, and NCI held an award ceremony to mark their completion of a two-week collaborative program by NCI and Midwest Shippers Association that was sponsored by the USDA-Cochran Fellowship program (August 19-25).



## Philippines, Vietnam | Aug 31-Sept 9

Feed Production Center Manager Kim Koch, presented on the current status of animal food manufacturing processes and trends (including the production and use of "fullfat" soybean meal) at a Feed Technology and Nutrition program in Manila, Tagbilaran and Ho Chi Minh.



## New Ulm, MN USA | September 24-29

Feed Production Center Manager Kim Koch, presented at a WISHH/USSEC animal food technology and nutrition program with participants from Cambodia and West Africa. Participants did "hands-on" exercises using the NCI feed center and traveled to SDSU for presentations on swine and aquaculture nutrition and a visit to Prairie Aquatech and poultry nutrition in New Ulm, MN.



## St. Louis, MO USA | October 12-18

Natsuki Barber, Food Scientist, assisted the US Dry Bean Council to put together a roasting and frying bean snack course along with Buhler Inc. and Heat and Control. 24 participants from Southeast Asia learned how to make roasted and fried snacks with the US dry beans.

# Global Marketing



## Indonesia | October 18-19

Director Mark Jirik attended the International Conference on Science, Technology, and Humanities hosted by Udayana University in Badung, Bali, Indonesia. The focus of the conference was on global partnerships for advancing innovation. His presentation was focused on the collaboration done at NCI in both showing the value of the commodities grown in northern region of the US, as well as helping educate global consumers in how they can use those commodities to improve lives around the world.



## England | October 21-23

Kim, Natsuki and Rachel attended the Cereal and Grains Association meeting. Kim presented on the importance of cereal and grains in animal nutrition (pet and food animal) and a "crystal ball" look at how the demand for animal food products (meat, milk and eggs) will continue to grow and how cereal and grains production must increase to meet the challenge. He is also the chair of the Scientific Advisory Committee which helps guide association planning.



## Minneapolis, MN USA | Oct 22-24

Program Manager, Jena Bjertness, attended the U.S. Grains Council's Global Trade Exchange in Minneapolis. This event provided an opportunity for global customers to network with suppliers, and for trade relationships to be established. Current U.S. trade policies were addressed in detail, along with issues facing the various corn and coarse grains markets.



## Tampa, FL USA | Oct 31 - Nov 2

Mark Jirik and Brian Sorenson attended the USW/ NAWG Joint Fall Meeting, in Tampa, Florida. Jirik gave a presentation to the USWA Grain Quality Subcommittee, updating them on the personnel changes and NCI's commitment to wheat-based educational programs.

# Global Marketing



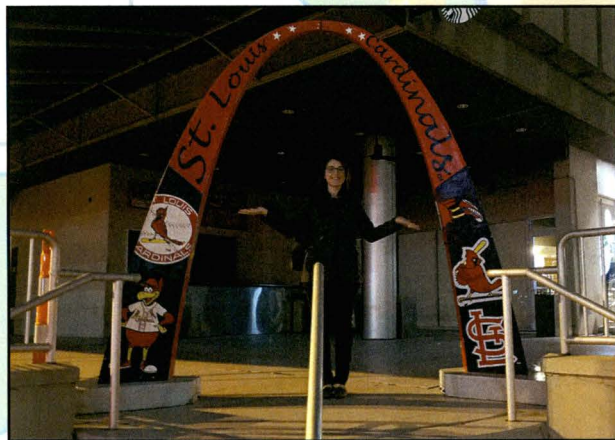
## Taiwan, China, Japan | Nov 12-20

Program Manager, Brian Sorenson, participated in the 2018 USW Crop Quality Seminars in Taiwan, China and Japan in November, presenting the quality data on the 2018 Hard Red Spring wheat crop to grain buyers, millers, bakers and government officials. Greg Svenningsen, representing the North Dakota Wheat Commission on the Northern Crops Council, also participated in the USW CQ Tour, with a presentation highlighting his family farm and passion for producing wheat.



## Brazil | Nov 30 - Dec 7

Feed Production Center Manager Kim Koch, presented at a Preventive Controls for Animal Food course, delivered for Inter-American Institute for Cooperation on Agriculture (IICA) in Campinas, Brazil. This was a three day PCQI course followed by a two day Lead Instructor course for those who qualified.



## St. Louis, MO USA | December 4-6

Program Managers Brian Sorenson and Jena Bjertness attended meetings for the various national soy groups: United States Soybean Export Council (USSEC), American Soybean Association (ASA), and United Soybean Board (USB). These meetings highlighted the missions and areas of concentration for the groups in the coming year, and progress that has been made on the missions of the past year. Areas of concentration included soy foods and oils, soybean meal, and sustainability for the future.

## NCI Product and Process Development

NCI's technical staff has worked with food processors and ingredient suppliers, large to small, established to start-up from all over the globe.

Our technical staff has experience in extrusion, post-extrusion, pasta manufacturing, milling and baking. We can assist in developing fresh/pre-cooked/frozen pasta, noodles, couscous, expanded snacks, texturized foods, imitation extruded foods, ready-to-eat cereals (expanded and flaked), expanded snack foods, and industrial products from food grade materials.

### We offer:

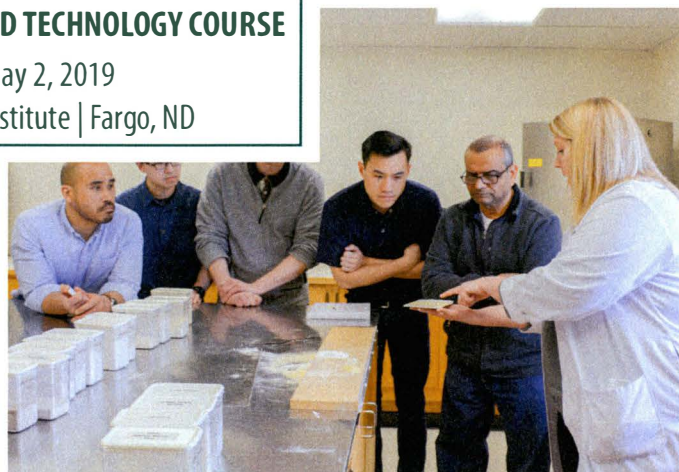
- Cost effective service fees
- Confidentiality
- Complete services, including purchase of ingredients (specialty ingredients are supplied by client — other ingredients provided at cost)
- Laboratory for proprietary use (upon approval).

For more information about our technical services, go to: <http://bit.ly/NCIProductDevelopment>

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**PASTA PRODUCTION AND TECHNOLOGY COURSE**  
 April 30-May 2, 2019  
 Northern Crops Institute | Fargo, ND

## COURSE OVERVIEW

This course introduces participants to the fundamental and applied aspects of pasta production and quality through lectures, laboratory demonstrations and hands-on processing in NCI's pilot-scale pasta processing laboratory. Grain and ingredient quality, specifications and processing variables and their impact on final pasta product quality are presented in detail. The course focuses primarily on traditional dry durum-based pasta; however, non-traditional ingredients and fresh pasta are also covered through lectures and demonstrations.

## OBJECTIVES

- Learn from industry professionals about the fundamentals of pasta production, quality assurance, die manufacturing and maintenance
  - Gain important understanding of ingredient quality and how it impacts pasta processing and quality
  - Learn how to evaluate the quality of durum wheat, semolina, and pasta
- Experience the commercial production of pasta with a field-trip to a state-of-the-art pasta manufacturing plant

## REGISTRATION DEADLINE

Monday, April 8th, 2019

Learn more and register at:

**[northern-crops.com](http://northern-crops.com)**



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**NORTHERN CROPS INSTITUTE**

**NCI-INTSOY COURSE**  
August 12-16, 2019  
Northern Crops Institute | Fargo, ND



## COURSE OVERVIEW

This course will provide an overview of many aspects of the soy industry. The course will explore new ideas for soy-based foods and snack foods, soy as a supplement to fortify foods, soy as animal nutrition, and an overview of soy production in the U.S.

## OBJECTIVES

- Learn from industry professionals about the potential uses for soy in food products, including baking, snack foods, meat alternatives, beverages, and more!
  - Participate in the hands-on processing of soy foods and feeds
- Learn about the current status and future potential of the global soy foods industry
  - Learn about the soy industry in the United States

## REGISTRATION DEADLINE

Monday, July 1st, 2019

Learn more and register at:

**[northern-crops.com](http://northern-crops.com)**





Northern Crops Institute  
 North Dakota State University  
 Dept. 7400  
 P.O. Box 6050  
 Fargo, ND 58108-6050

ADDRESS SERVICE REQUESTED

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Non-Profit Org.  
 U.S. Postage  
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 Permit No. 818  
 Fargo, ND

2018 Annual Update

*Offering Technical Services and Educational Opportunities*

**Educational Courses:**

- Value-enhanced uses
- Grain standards and inspection
- Procurement, risk management
- Quality, processing and milling
- Extrusion technology
- Pasta processing
- Feed milling and manufacturing
- Customized seminars
- Soyfoods

**Technical Services:**

- Pilot-Scale Processing
- Milling
- Baking
- Pasta processing
- Oilseed cold pressing
- Extrusion
- Post-extrusion
- Feed
- Industrial

**NCI Provides:**

- Skilled staff
- Up-to-date information
- Fully-equipped labs
- Hands-on experience
- Extrusion
- Confidential environment
- Network of resources

**NCI Staff**

Mark Jirik, director  
 Brian Sorenson, program manager  
 Jena Bjertness, program manager  
 Grant Christian, communications & marketing manager  
 Janel Brooks, account technician  
 Neil C. Doty, Ph.D., technical director (consultant)  
 Kim Koch, Ph.D., feed production center manager  
 Natsuki Barber, food scientist  
 Rachel Carlson, food technologist  
 Rilie Morgan, process project manager  
 Zhisheng (Zach) Liu, Ph.D., CFS, food scientist  
 Vanessa Johansen, processing technologist

**Connect with us:**

Northern Crops Institute  
 NDSU Dept. 7400  
 P.O. Box 6050  
 Fargo, ND 58108-6050  
 Phone: (701) 231-7736  
 Fax: (701) 231-7235  
 E-mail: [nci@ndsu.edu](mailto:nci@ndsu.edu)

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 This publication will be made available in alternative formats for people with disabilities upon request, 701-231-6538.



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**Upper Great Plains Transportation Institute - Budget No. 627**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version				House Changes to Executive Budget Increase (Decrease) - Executive Budget			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	43.88	\$3,443,174	\$18,617,068	\$22,060,242	43.88	\$3,443,174	\$18,617,068	\$22,060,242	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes				\$0				\$0				\$0
Salary increase		\$132,904	\$234,012	\$366,916		\$83,222	\$136,645	\$219,867		(49,682)	(97,367)	(147,049)
Health insurance increase		54,750	96,403	151,153		57,873	120,610	178,483		3,123	24,207	27,330
Retirement contribution increase		5,531	9,739	15,270				0		(5,531)	(9,739)	(15,270)
Reduce funding for miscellaneous expenses		(172,159)		(172,159)		(70,863)		(70,863)		101,296		101,296
Add funding for a road and bridge study				0		450,000		450,000		450,000		450,000
Total ongoing funding changes	0.00	\$21,026	\$340,154	\$361,180	0.00	\$520,232	\$257,255	\$777,487	0.00	\$499,206	(\$82,899)	\$416,307
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$21,026	\$340,154	\$361,180	0.00	\$520,232	\$257,255	\$777,487	0.00	\$499,206	(\$82,899)	\$416,307
<b>2019-21 Total Funding</b>	43.88	\$3,464,200	\$18,957,222	\$22,421,422	43.88	\$3,963,406	\$18,874,323	\$22,837,729	0.00	\$499,206	(\$82,899)	\$416,307

**Other Sections for Upper Great Plains Transportation Institute - Budget No. 627**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.

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**Branch Research Centers - Budget No. 628**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version				House Changes to Executive Budget Increase (Decrease) - Executive Budget			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	110.29	\$17,155,257	\$20,281,691	\$37,436,948	110.29	\$17,155,257	\$20,281,691	\$37,436,948	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	(0.48)			\$0	(0.48)			\$0				\$0
Salary increase		\$550,257	\$205,965	756,222		\$342,408	\$110,751	453,159		(207,849)	(95,214)	(303,063)
Health insurance increase		288,089	110,003	398,092		321,448	148,587	470,035		33,359	38,584	71,943
Retirement contribution increase		25,606	9,583	35,189				0		(25,606)	(9,583)	(35,189)
Reduce funding for travel, miscellaneous supplies, repairs, and operating fees and services		(1,200,560)		(1,200,560)		(1,200,560)		(1,200,560)				0
Add funding for Oakes irrigation site			200,000	200,000			200,000	200,000				0
Reduce funding for capital bond payments		(23,091)		(23,091)		(23,091)		(23,091)				0
Total ongoing funding changes	(0.48)	(\$359,699)	\$525,551	\$165,852	(0.48)	(\$559,795)	\$459,338	(\$100,457)	0.00	(\$200,096)	(\$66,213)	(\$266,309)
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	(0.48)	(\$359,699)	\$525,551	\$165,852	(0.48)	(\$559,795)	\$459,338	(\$100,457)	0.00	(\$200,096)	(\$66,213)	(\$266,309)
<b>2019-21 Total Funding</b>	109.81	\$16,795,558	\$20,807,242	\$37,602,800	109.81	\$16,595,462	\$20,741,029	\$37,336,491	0.00	(\$200,096)	(\$66,213)	(\$266,309)

**Other Sections for Branch Research Centers - Budget No. 628**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Dickinson Research Extension Center mineral rights income	Section 4 would authorize the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.	Section 5 authorizes the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019-21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019-21 biennium.

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Other Sections for Branch Research Centers - Budget No. 628

Executive Budget Recommendation

House Version

Williston Research Extension Center mineral rights income

Section 5 would direct the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.

Section 6 directs the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017-19 biennium and the 2019-21 biennium.

Transfer authority

Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

FTE position adjustments

Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provide that any adjustments be reported to the Office of Management and Budget.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the branch research centers into the 2021-23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the branch research centers into the 2021-23 biennium.

Exemption - Williston seed cleaning plant

Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

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**NDSU Extension Service - Budget No. 630**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version				House Changes to Executive Budget Increase (Decrease) - Executive Budget			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	252.98	\$25,633,320	\$26,646,689	\$52,280,009	252.98	\$25,633,320	\$26,646,689	\$52,280,009	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	(10.47)			\$0	(10.47)			\$0	(0.00)			\$0
Salary increase		\$933,689	\$819,104	1,752,793		\$577,488	\$473,054	1,050,542		(356,201)	(346,050)	(702,251)
Health insurance increase		458,641	402,356	860,997		507,430	509,213	1,016,643		48,789	106,857	155,646
Retirement contribution increase		21,470	18,835	40,305				0		(21,470)	(18,835)	(40,305)
Reduce funding for miscellaneous expenses		(1,063,332)		(1,063,332)				0		1,063,332		1,063,332
Increase funding for miscellaneous expenses				0		100,000		100,000		100,000		100,000
<b>Total ongoing funding changes</b>	<b>(10.47)</b>	<b>\$350,468</b>	<b>\$1,240,295</b>	<b>\$1,590,763</b>	<b>(10.47)</b>	<b>\$1,184,918</b>	<b>\$982,267</b>	<b>\$2,167,185</b>	<b>(0.00)</b>	<b>\$834,450</b>	<b>(\$258,028)</b>	<b>\$576,422</b>
<b>One-time funding items</b>												
Add one-time funding for website and digital upgrades		\$345,000		\$345,000				\$0		(\$345,000)		(\$345,000)
<b>Total one-time funding changes</b>	<b>0.00</b>	<b>\$345,000</b>	<b>\$0</b>	<b>\$345,000</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0.00</b>	<b>(\$345,000)</b>	<b>\$0</b>	<b>(\$345,000)</b>
<b>Total Changes to Base Level Funding</b>	<b>(10.47)</b>	<b>\$695,468</b>	<b>\$1,240,295</b>	<b>\$1,935,763</b>	<b>(10.47)</b>	<b>\$1,184,918</b>	<b>\$982,267</b>	<b>\$2,167,185</b>	<b>(0.00)</b>	<b>\$489,450</b>	<b>(\$258,028)</b>	<b>\$231,422</b>
<b>2019-21 Total Funding</b>	<b>242.51</b>	<b>\$26,328,788</b>	<b>\$27,886,984</b>	<b>\$54,215,772</b>	<b>242.51</b>	<b>\$26,818,238</b>	<b>\$27,628,956</b>	<b>\$54,447,194</b>	<b>(0.00)</b>	<b>\$489,450</b>	<b>(\$258,028)</b>	<b>\$231,422</b>

**Other Sections for NDSU Extension Service - Budget No. 630**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

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Other Sections for NDSU Extension Service - Budget No. 630

Executive Budget Recommendation

House Version

FTE position adjustments

Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provide that any adjustments be reported to the Office of Management and Budget.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the NDSU Extension Service into the 2021-23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the NDSU Extension Service into the 2021-23 biennium.

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**Northern Crops Institute - Budget No. 638**

**House Bill No. 1020**

**Base Level Funding Changes**

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PI*

	Executive Budget Recommendation			
	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	11.80	\$1,886,891	\$1,755,830	\$3,642,721
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes	1.00			\$0
Salary increase		\$77,693	\$32,717	110,410
Health insurance increase		34,570	14,557	49,127
Retirement contribution increase		958	404	1,362
Adjust funding for miscellaneous expenses		(94,345)	94,345	0
Total ongoing funding changes	1.00	\$18,876	\$142,023	\$160,899
<b>One-time funding items</b>				
No one-time funding items				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	1.00	\$18,876	\$142,023	\$160,899
<b>2019-21 Total Funding</b>	12.80	\$1,905,767	\$1,897,853	\$3,803,620

	House Version			
	FTE Position	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	11.80	\$1,886,891	\$1,755,830	\$3,642,721
<b>2019-21 Ongoing Funding Changes</b>				
Base payroll changes	1.00			\$0
Salary increase		\$46,996	\$19,162	66,158
Health insurance increase		40,158	17,848	58,006
Retirement contribution increase				0
Adjust funding for miscellaneous expenses		(37,738)	100,000	62,262
Total ongoing funding changes	1.00	\$49,416	\$137,010	\$186,426
<b>One-time funding items</b>				
No one-time funding items				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	1.00	\$49,416	\$137,010	\$186,426
<b>2019-21 Total Funding</b>	12.80	\$1,936,307	\$1,892,840	\$3,829,147

House Changes to Executive Budget Increase (Decrease) - Executive Budget			
FTE Positions	General Fund	Other Funds	Total
0.00	\$0	\$0	\$0
			\$0
	(\$30,697)	(\$13,555)	(44,252)
	5,588	3,291	8,879
	(958)	(404)	(1,362)
	56,607	5,655	62,262
0.00	\$30,540	(\$5,013)	\$25,527
			\$0
0.00	\$0	\$0	\$0
0.00	\$30,540	(\$5,013)	\$25,527
0.00	\$30,540	(\$5,013)	\$25,527

**Other Sections for Northern Crops Institute - Budget No. 638**

	Executive Budget Recommendation
Additional income appropriation	Section 3 would provide that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

	House Version
Additional income appropriation	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Transfer authority	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

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Other Sections for Northern Crops Institute - Budget No. 638

	<u>Executive Budget Recommendation</u>	<u>House Version</u>
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Northern Crops Institute into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Northern Crops Institute into the 2021-23 biennium.

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**NDSU Main Research Center - Budget No. 640**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version				House Changes to Executive Budget Increase (Decrease) - Executive Budget			
	FTE Positions	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	336.12	\$49,557,415	\$59,084,828	\$108,642,243	336.12	\$49,557,415	\$59,084,828	\$108,642,243	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	3.93			\$0	3.93			\$0	(0.00)			\$0
Salary increase		\$1,676,842	\$1,047,754	2,724,596		\$1,039,641	\$593,352	1,632,993		(\$637,201)	(\$454,402)	(1,091,603)
Health insurance increase		739,838	462,279	1,202,117		798,276	621,120	1,419,396		58,438	158,841	217,279
Retirement contribution increase		25,147	15,712	40,859				0		(25,147)	(15,712)	(40,859)
Adjust funding for miscellaneous expenses		(2,955,742)	2,000,000	(955,742)		(2,955,742)	3,000,000	44,258			1,000,000	1,000,000
Reduce funding for capital bond payments		(65,091)		(65,091)		(65,091)		(65,091)				0
Reduce capital funding from special funds			(5,997,398)	(5,997,398)			(5,997,398)	(5,997,398)				0
Total ongoing funding changes	3.93	(\$579,006)	(\$2,471,653)	(\$3,050,659)	3.93	(\$1,182,916)	(\$1,782,926)	(\$2,965,842)	(0.00)	(\$603,910)	\$688,727	\$84,817
<b>One-time funding items</b>												
Add one-time funding from the strategic investment and improvements fund for extraordinary repairs			\$1,440,465	\$1,440,465			\$1,440,465	\$1,440,465			\$0	\$0
Add one-time funding for a Williston seed cleaning plant				0		\$250,000	500,000	750,000		\$250,000	500,000	750,000
Total one-time funding changes	0.00	\$0	\$1,440,465	\$1,440,465	0.00	\$250,000	\$1,940,465	\$2,190,465	0.00	\$250,000	\$500,000	\$750,000
<b>Total Changes to Base Level Funding</b>	3.93	(\$579,006)	(\$1,031,188)	(\$1,610,194)	3.93	(\$932,916)	\$157,539	(\$775,377)	(0.00)	(\$353,910)	\$1,188,727	\$834,817
<b>2019-21 Total Funding</b>	340.05	\$48,978,409	\$58,053,640	\$107,032,049	340.05	\$48,624,499	\$59,242,367	\$107,866,866	(0.00)	(\$353,910)	\$1,188,727	\$834,817

**Other Sections for NDSU Main Research Center - Budget No. 640**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
Estimated income - Strategic investment and improvements fund		Section 4 provides the estimated income line item in subdivision 4 of Section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs.

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Other Sections for NDSU Main Research Center - Budget No. 640

Executive Budget Recommendation

Transfer authority Section 6 would authorize the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provide that any transfers be reported to the Office of Management and Budget.

FTE position adjustments Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provide that any adjustments be reported to the Office of Management and Budget.

Unexpended general fund - Excess income Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Main Research Center into the 2021-23 biennium.

Exemption - Williston seed cleaning plant

House Version

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Main Research Center into the 2021-23 biennium.

Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

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**Agronomy Seed Farm - Budget No. 649**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	Executive Budget Recommendation				House Version				House Changes to Executive Budget Increase (Decrease) - Executive Budget			
	FTE Positions	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	3.00	\$0	\$1,536,129	\$1,536,129	3.00	\$0	\$1,536,129	\$1,536,129	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes				\$0				\$0				\$0
Salary increase			\$21,393	\$21,393			\$12,819	\$12,819			(\$8,574)	(\$8,574)
Health insurance increase			11,337	11,337			13,386	13,386			2,049	2,049
Retirement contribution increase			2,789	2,789			0	0			(2,789)	(2,789)
<b>Total ongoing funding changes</b>	<b>0.00</b>	<b>\$0</b>	<b>\$35,519</b>	<b>\$35,519</b>	<b>0.00</b>	<b>\$0</b>	<b>\$26,205</b>	<b>\$26,205</b>	<b>0.00</b>	<b>\$0</b>	<b>(\$9,314)</b>	<b>(\$9,314)</b>
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
<b>Total one-time funding changes</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Changes to Base Level Funding</b>	<b>0.00</b>	<b>\$0</b>	<b>\$35,519</b>	<b>\$35,519</b>	<b>0.00</b>	<b>\$0</b>	<b>\$26,205</b>	<b>\$26,205</b>	<b>0.00</b>	<b>\$0</b>	<b>(\$9,314)</b>	<b>(\$9,314)</b>
<b>2019-21 Total Funding</b>	<b>3.00</b>	<b>\$0</b>	<b>\$1,571,648</b>	<b>\$1,571,648</b>	<b>3.00</b>	<b>\$0</b>	<b>\$1,562,334</b>	<b>\$1,562,334</b>	<b>0.00</b>	<b>\$0</b>	<b>(\$9,314)</b>	<b>(\$9,314)</b>

**Other Sections for Agronomy Seed Farm - Budget No. 649**

	Executive Budget Recommendation	House Version
Additional income appropriation	Section 3 would provide that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 7 would authorize the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 8 would authorize the continuation of any unexpended general fund appropriation and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Agronomy Seed Farm into the 2021-23 biennium.

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PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1020

Page 1, line 3, after "farm" insert "; and to provide exemptions"

Page 1, replace lines 19 through 24 with:

"Extension service	\$51,188,489	\$3,677,816	\$54,866,305
Soil conservation committee	<u>1,091,520</u>	<u>121,280</u>	<u>1,212,800</u>
Total all funds	\$52,280,009	\$3,799,096	\$56,079,105
Less estimated income	<u>26,646,689</u>	<u>1,131,470</u>	<u>27,778,159</u>
Total general fund	\$25,633,320	\$2,667,626	\$28,300,946
Full-time equivalent positions	252.98	(10.47)	242.51"

Page 2, replace lines 5 through 9 with:

"Northern crops institute	<u>\$3,642,721</u>	<u>\$197,306</u>	<u>\$3,840,027</u>
Total all funds	\$3,642,721	\$197,306	\$3,840,027
Less estimated income	<u>1,755,830</u>	<u>140,387</u>	<u>1,896,217</u>
Total general fund	\$1,886,891	\$56,919	\$1,943,810
Full-time equivalent positions	11.80	1.00	12.80"

Page 2, replace lines 14 through 19 with:

"Upper great plains transportation institute	<u>\$22,060,242</u>	<u>\$1,331,981</u>	<u>\$23,392,223</u>
Total all funds	\$22,060,242	\$1,331,981	\$23,392,223
Less estimated income	<u>18,617,068</u>	<u>278,826</u>	<u>18,895,894</u>
Total general fund	\$3,443,174	\$1,053,155	\$4,496,329
Full-time equivalent positions	43.88	0.00	43.88"

Page 2, replace lines 24 through 28 with:

"Main research center	<u>\$108,642,243</u>	<u>\$3,818,323</u>	<u>\$112,460,566</u>
Total all funds	\$108,642,243	\$3,818,323	\$112,460,566
Less estimated income	<u>59,084,828</u>	<u>(641,588)</u>	<u>58,443,240</u>
Total general fund	\$49,557,415	\$4,459,911	\$54,017,326
Full-time equivalent positions	336.12	7.93	344.05"

Page 3, replace lines 3 through 13 with:

"Dickinson research center	\$6,825,551	\$127,811	\$6,953,362
Central grasslands research center	3,423,624	87,201	3,510,825
Hettinger research center	4,975,133	137,270	5,112,403
Langdon research center	2,964,607	87,453	3,052,060
North central research center	4,953,652	121,418	5,075,070
Williston research center	5,118,890	167,943	5,286,833
Carrington research center	<u>9,175,491</u>	<u>510,370</u>	<u>9,685,861</u>
Total all funds	\$37,436,948	\$1,239,466	\$38,676,414
Less estimated income	<u>20,281,691</u>	<u>318,697</u>	<u>20,600,388</u>
Total general fund	\$17,155,257	\$920,769	\$18,076,026
Full-time equivalent positions	110.29	(0.48)	109.81"

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 pg 2

Page 3, replace lines 18 through 20 with:

"Agronomy seed farm	<u>\$1,536,129</u>	<u>\$29,846</u>	<u>\$1,565,975</u>
Total special funds	\$1,536,129	\$29,846	\$1,565,975
Full-time equivalent positions	3.00	0.00	3.00"

Page 3, replace lines 25 through 27 with:

"Grand total general fund	\$97,676,057	\$9,158,380	\$106,834,437
Grand total other funds	<u>127,922,235</u>	<u>1,257,638</u>	<u>129,179,873</u>
Grand total all funds	\$225,598,292	\$10,416,018	\$236,014,310"

Page 4, replace lines 2 through 8 with:

"Seed cleaning plants		\$1,500,000	\$750,000
Extraordinary repairs		0	1,440,465
Junior master gardener program		15,000	0
Road and bridge asset management system		300,000	0
Two equipment storage sheds		0	600,000
Greenhouse		<u>0</u>	<u>500,000</u>
Total all funds		\$1,815,000	\$3,290,465
Total other funds		<u>1,700,000</u>	<u>1,940,465</u>
Total general fund		\$115,000	\$1,350,000"

Page 5, after line 24, insert:

**"SECTION 11. EXEMPTION - CARRINGTON RESEARCH CENTER AND NORTH CENTRAL RESEARCH CENTER.** Any amounts continued for seed cleaning plants at the Carrington research center and North Central research center pursuant to section 12 of chapter 45 of the 2017 Session Laws are not subject to the provisions of section 54-44.1-11 and any unexpended funds may be used to defray the expenses of seed cleaning plants at the Carrington research center and the North Central research center during the biennium beginning July 1, 2019, and ending June 30, 2021."

Renumber accordingly

**STATEMENT OF PURPOSE OF AMENDMENT:**

**House Bill No. 1020 - Summary of Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Transportation Institute				
Total all funds	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Less estimated income	<u>18,617,068</u>	<u>18,874,323</u>	21,571	<u>18,895,894</u>
General fund	\$3,443,174	\$3,963,406	\$532,923	\$4,496,329
FTE	43.88	43.88	0.00	43.88
Branch Research Centers				
Total all funds	\$37,436,948	\$37,336,491	\$1,339,923	\$38,676,414
Less estimated income	<u>20,281,691</u>	<u>20,741,029</u>	(140,641)	<u>20,600,388</u>
General fund	\$17,155,257	\$16,595,462	\$1,480,564	\$18,076,026
FTE	110.29	109.81	0.00	109.81
NDSU Extension Service				
Total all funds	\$52,280,009	\$54,447,194	\$1,631,911	\$56,079,105
Less estimated income	<u>26,646,689</u>	<u>27,628,956</u>	149,203	<u>27,778,159</u>
General fund	\$25,633,320	\$26,818,238	\$1,482,708	\$28,300,946
FTE	252.98	242.51	0.00	242.51

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<b>Northern Crops Institute</b>				
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Less estimated income	1,755,830	1,892,840	3,377	1,896,217
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810
FTE	11.80	12.80	0.00	12.80
<b>Main Research Center</b>				
Total all funds	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Less estimated income	59,084,828	59,242,367	(799,127)	58,443,240
General fund	\$49,557,415	\$48,624,499	\$5,392,827	\$54,017,326
FTE	336.12	340.05	4.00	344.05
<b>Agronomy Seed Farm</b>				
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Less estimated income	1,536,129	1,562,334	3,641	1,565,975
General fund	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00
<b>Bill total</b>				
Total all funds	\$225,598,292	\$227,879,761	\$8,134,549	\$236,014,310
Less estimated income	127,922,235	129,941,849	(761,976)	129,179,873
General fund	\$97,676,057	\$97,937,912	\$8,896,525	\$106,834,437
FTE	758.07	752.05	4.00	756.05

### House Bill No. 1020 - Transportation Institute - Senate Action

	Base Budget	House Version	Senate Changes	Senate Version
Upper Great Plains Trans. Institute	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Total all funds	\$22,060,242	\$22,837,729	\$554,494	\$23,392,223
Less estimated income	18,617,068	18,874,323	21,571	18,895,894
General fund	\$3,443,174	\$3,963,406	\$532,923	\$4,496,329
FTE	43.88	43.88	0.00	43.88

### Department 627 - Transportation Institute - Detail of Senate Changes

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for a Road and Bridge Study <sup>2</sup>	Total Senate Changes
Upper Great Plains Trans. Institute	\$29,494	\$525,000	\$554,494
Total all funds	\$29,494	\$525,000	\$554,494
Less estimated income	21,571	0	21,571
General fund	\$7,923	\$525,000	\$532,923
FTE	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Ongoing funding of \$525,000 from the general fund is added to continue the road and bridge study, for a total of \$975,000. The House added \$450,000 from the general fund.

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**House Bill No. 1020 - Branch Research Centers - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Dickinson Research Center	\$6,825,551	\$6,673,082	\$280,280	\$6,953,362
Central Grasslands Research Center	3,423,624	3,366,743	144,082	3,510,825
Hettinger Research Center	4,975,133	4,952,233	160,170	5,112,403
Langdon Research Center	2,964,607	2,947,911	104,149	3,052,060
North Central Research Center	4,953,652	4,953,966	121,104	5,075,070
Williston Research Center	5,118,890	5,068,765	218,068	5,286,833
Carrington Research Center	9,175,491	9,373,791	312,070	9,685,861
Total all funds	\$37,436,948	\$37,336,491	\$1,339,923	\$38,676,414
Less estimated income	20,281,691	20,741,029	(140,641)	20,600,388
General fund	\$17,155,257	\$16,595,462	\$1,480,564	\$18,076,026
FTE	110.29	109.81	0.00	109.81

**Department 628 - Branch Research Centers - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Operating Expenses <sup>2</sup>	Adds Funding for Oakes Irrigation Site <sup>3</sup>	Total Senate Changes
Dickinson Research Center	\$16,894	\$263,386		\$280,280
Central Grasslands Research Center	13,113	130,969		144,082
Hettinger Research Center	18,420	141,750		160,170
Langdon Research Center	10,698	93,451		104,149
North Central Research Center	17,788	103,316		121,104
Williston Research Center	19,337	198,731		218,068
Carrington Research Center	43,113	268,957		312,070
Total all funds	\$139,363	\$1,200,560	\$0	\$1,339,923
Less estimated income	59,359	0	(200,000)	(140,641)
General fund	\$80,004	\$1,200,560	\$200,000	\$1,480,564
FTE	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$1,200,560 from the general fund reduced by the House for operating expenses is restored.

<sup>3</sup> The funding source for \$200,000 added to the Carrington Research Center for the Oakes irrigation site is changed from other funds as added by the House to the general fund.

**House Bill No. 1020 - NDSU Extension Service - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Extension Service	\$51,188,489	\$53,355,674	\$1,510,631	\$54,866,305
Soil Conservation Committee	1,091,520	1,091,520	121,280	1,212,800
Total all funds	\$52,280,009	\$54,447,194	\$1,631,911	\$56,079,105
Less estimated income	26,646,689	27,628,956	149,203	27,778,159
General fund	\$25,633,320	\$26,818,238	\$1,482,708	\$28,300,946
FTE	252.98	242.51	0.00	242.51

**Department 630 - NDSU Extension Service - Detail of Senate Changes**

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	Adds Funding for Salary Increases <sup>1</sup>	Adds Funding for Extension Agent Funding <sup>2</sup>	Adds Funding for Soil Conservation <sup>3</sup>	Adds One-Time Funding for Website and Digital Upgrades <sup>4</sup>	Total Senate Changes
Extension Service	\$295,631	\$870,000		\$345,000	\$1,510,631
Soil Conservation Committee			\$121,280		121,280
Total all funds	\$295,631	\$870,000	\$121,280	\$345,000	\$1,631,911
Less estimated income	149,203	0	0	0	149,203
General fund	\$146,428	\$870,000	\$121,280	\$345,000	\$1,482,708
FTE	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> Funding of \$870,000 from the general fund is added for providing additional state funding for the cost of county extension agents. The House did not add any funding for additional county extension agent funding.

<sup>3</sup> Funding of \$121,280 from the general fund is added for soil conservation. The House did not add funding for soil conservation.

<sup>4</sup> One-time funding of \$345,000 from the general fund is provided for website and digital upgrades. The House did not add funding for website and digital upgrades.

**House Bill No. 1020 - Northern Crops Institute - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Northern Crops Institute	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Total all funds	\$3,642,721	\$3,829,147	\$10,880	\$3,840,027
Less estimated income	1,755,830	1,892,840	3,377	1,896,217
General fund	\$1,886,891	\$1,936,307	\$7,503	\$1,943,810
FTE	11.80	12.80	0.00	12.80

**Department 638 - Northern Crops Institute - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Senate Changes
Northern Crops Institute	\$10,880	\$10,880
Total all funds	\$10,880	\$10,880
Less estimated income	3,377	3,377
General fund	\$7,503	\$7,503
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

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**House Bill No. 1020 - Main Research Center - Senate Action**

	Base Budget	House Version	Senate Changes	Senate Version
Main Research Center	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Total all funds	\$108,642,243	\$107,866,866	\$4,593,700	\$112,460,566
Less estimated income	59,084,828	59,242,367	(799,127)	58,443,240
General fund	\$49,557,415	\$48,624,499	\$5,392,827	\$54,017,326
FTE	336.12	340.05	4.00	344.05

**Department 640 - Main Research Center - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Adds FTE Positions for AgriBiome Initiative <sup>2</sup>	Adjusts Funding for Miscellaneous Expenses <sup>3</sup>	Adjusts One-Time Funding for Williston Seed Cleaning Plant <sup>4</sup>	Adds One-Time Funding for Two Equipment Storage Sheds <sup>5</sup>	Adds One-Time Funding for a Williston Greenhouse <sup>6</sup>
Main Research Center	\$377,958	\$1,160,000	\$1,955,742		\$600,000	\$500,000
Total all funds	\$377,958	\$1,160,000	\$1,955,742	\$0	\$600,000	\$500,000
Less estimated income	200,873	0	(1,000,000)	(500,000)	0	500,000
General fund	\$177,085	\$1,160,000	\$2,955,742	\$500,000	\$600,000	\$0
FTE	0.00	4.00	0.00	0.00	0.00	0.00

	Total Senate Changes
Main Research Center	\$4,593,700
Total all funds	\$4,593,700
Less estimated income	(799,127)
General fund	\$5,392,827
FTE	4.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

<sup>2</sup> The following FTE positions and related funding are added for the agriBiome initiative:

	FTE Positions	General Fund
Scientist and technician	2.0	\$580,000
Scientist and technician	2.0	580,000
Total	4.0	\$1,160,000

<sup>3</sup> The Senate adjusted funding for miscellaneous expenses by adding \$2,955,742 from the general fund and reducing \$1,000,000 of other funds. The House reduced funding for miscellaneous expenses by \$2,955,742 from the general fund but increased funding by \$3,000,000 of other funds.

<sup>4</sup> One-time funding of \$500,000 from the general fund is added to the \$250,000 of one-time funding from the general fund added by the House for the Williston Research Center seed cleaning plant, for a total of \$750,000 from the general fund. The \$500,000 of other funds added by the House for the seed cleaning plant is removed.

<sup>5</sup> One-time funding of \$600,000 from the general fund is added for two equipment storage sheds. The House did not add funding for equipment storage sheds.

<sup>6</sup> One-time funding of \$500,000 of other funds is added for a Williston Research Center greenhouse. The House did not add funding for a Williston greenhouse.



**House Bill No. 1020 - Agronomy Seed Farm - Senate Action**

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	Base Budget	House Version	Senate Changes	Senate Version
Agronomy Seed Farm	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Total all funds	\$1,536,129	\$1,562,334	\$3,641	\$1,565,975
Less estimated income	1,536,129	1,562,334	3,641	1,565,975
General fund	\$0	\$0	\$0	\$0
FTE	3.00	3.00	0.00	3.00

**Department 649 - Agronomy Seed Farm - Detail of Senate Changes**

	Adds Funding for Salary Increases <sup>1</sup>	Total Senate Changes
Agronomy Seed Farm	\$3,641	\$3,641
Total all funds	\$3,641	\$3,641
Less estimated income	3,641	3,641
General fund	\$0	\$0
FTE	0.00	0.00

<sup>1</sup> Funding is added to provide for state employee salary increases of 2 percent on July 1, 2019, with a minimum monthly increase of \$120 and a maximum monthly increase of \$200, and an increase of 2.5 percent on July 1, 2020. The House provided funding for a salary increase of 2 percent on July 1, 2019, and 2 percent on July 1, 2020.

This amendment also adds a section to allow funds appropriated for the 2017-19 biennium for seed cleaning plants at the Carrington Research Center and the North Central Research Center to be continued and spent during the 2019-21 biennium.

Att 1 HB 1020 4/15/19

**Upper Great Plains Transportation Institute - Budget No. 627**  
**House Bill No. 1020**  
**Base Level Funding Changes**

	House Version				Senate Version				Senate Changes to House Version Increase (Decrease) - House Version			
	FTE Position	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	43.88	\$3,443,174	\$18,617,068	\$22,060,242	43.88	\$3,443,174	\$18,617,068	\$22,060,242	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes				\$0				\$0				\$0
Salary increase		\$83,222	\$136,645	\$219,867		91,145	158,216	249,361		7,923	21,571	29,494
Health insurance increase		57,873	120,610	178,483		57,873	120,610	178,483				0
Retirement contribution increase				0				0				0
Reduce funding for miscellaneous expenses		(70,863)		(70,863)		(70,863)		(70,863)				0
Add funding for a road and bridge study		450,000		450,000		975,000		975,000		525,000		525,000
Total ongoing funding changes	0.00	\$520,232	\$257,255	\$777,487	0.00	\$1,053,155	\$278,826	\$1,331,981	0.00	\$532,923	\$21,571	\$554,494
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$520,232	\$257,255	\$777,487	0.00	\$1,053,155	\$278,826	\$1,331,981	0.00	\$532,923	\$21,571	\$554,494
<b>2019-21 Total Funding</b>	43.88	\$3,963,406	\$18,874,323	\$22,837,729	43.88	\$4,496,329	\$18,895,894	\$23,392,223	0.00	\$532,923	\$21,571	\$554,494

**Other Sections for Upper Great Plains Transportation Institute - Budget No. 627**

	House Version	Senate Version
Additional income appropriation	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Upper Great Plains Transportation Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019-21 biennium.
FTE position adjustments	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Upper Great Plains Transportation Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Upper Great Plains Transportation Institute into the 2021-23 biennium.

ATT 2 HB 1020 4/15/19

**Branch Research Centers - Budget No. 628**

**House Bill No. 1020**

**Base Level Funding Changes**

	House Version				Senate Version				Senate Changes to House Version Increase (Decrease) - House Version			
	FTE Position	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	110.29	\$17,155,257	\$20,281,691	\$37,436,948	110.29	\$17,155,257	\$20,281,691	\$37,436,948	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	(0.48)			\$0	(0.48)			\$0				\$0
Salary increase		\$342,408	\$110,751	453,159		422,412	170,110	592,522		80,004	59,359	139,363
Health insurance increase		321,448	148,587	470,035		321,448	148,587	470,035				0
Retirement contribution increase				0				0				0
Reduce funding for travel, miscellaneous supplies, repairs, and operating fees and services		(1,200,560)		(1,200,560)		0		0		1,200,560		1,200,560
Add funding for Oakes irrigation site			200,000	200,000		200,000	0	200,000		200,000	(200,000)	0
Reduce funding for capital bond payments		(23,091)		(23,091)		(23,091)		(23,091)				0
<b>Total ongoing funding changes</b>	<b>(0.48)</b>	<b>(\$559,795)</b>	<b>\$459,338</b>	<b>(\$100,457)</b>	<b>(0.48)</b>	<b>\$920,769</b>	<b>\$318,697</b>	<b>\$1,239,466</b>	<b>0.00</b>	<b>\$1,480,564</b>	<b>(\$140,641)</b>	<b>\$1,339,923</b>
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
<b>Total one-time funding changes</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Changes to Base Level Funding</b>	<b>(0.48)</b>	<b>(\$559,795)</b>	<b>\$459,338</b>	<b>(\$100,457)</b>	<b>(0.48)</b>	<b>\$920,769</b>	<b>\$318,697</b>	<b>\$1,239,466</b>	<b>0.00</b>	<b>\$1,480,564</b>	<b>(\$140,641)</b>	<b>\$1,339,923</b>
<b>2019-21 Total Funding</b>	<b>109.81</b>	<b>\$16,595,462</b>	<b>\$20,741,029</b>	<b>\$37,336,491</b>	<b>109.81</b>	<b>\$18,076,026</b>	<b>\$20,600,388</b>	<b>\$38,676,414</b>	<b>0.00</b>	<b>\$1,480,564</b>	<b>(\$140,641)</b>	<b>\$1,339,923</b>

**Other Sections for Branch Research Centers - Budget No. 628**

	House Version	Senate Version
Additional income appropriation	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the branch research centers, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.
Dickinson Research Extension Center mineral rights income	Section 5 authorizes the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019–21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019–21 biennium.	Section 5 authorizes the Dickinson Research Extension Center to spend up to \$755,000 of revenue received during the 2019–21 biennium from mineral royalties, leases, or easements for ongoing operational expenses. Any revenues received in excess of \$755,000 may be spent only for one-time expenditures for the 2019–21 biennium.

Other Sections for Branch Research Centers - Budget No. 628

Att 2 HB 1020 4/15/19

House Version

Senate Version

Williston Research Extension Center mineral rights income

Section 6 directs the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017–19 biennium and the 2019–21 biennium.

Section 6 directs the Williston Research Extension Center to report to the 67th Legislative Assembly on amounts received and spent from mineral royalties, leases, or easements in the 2017–19 biennium and the 2019–21 biennium.

Transfer authority

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

FTE position adjustments

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the branch research centers and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the branch research centers into the 2021–23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the branch research centers into the 2021–23 biennium.

Exemption - Williston seed cleaning plant

Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017–19 biennium is not subject to the provisions of North Dakota Century Code Section 54–44.1–11 and may be continued and expended during the 2019–21 biennium.

Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017–19 biennium is not subject to the provisions of North Dakota Century Code Section 54–44.1–11 and may be continued and expended during the 2019–21 biennium.

Exemption - Carrington research center and North Central research center

Section 11 exempts any amounts carried over for the seed cleaning plants at the Carrington research center and the North Central research center pursuant to Section 12 of Chapter 45 of the 2017 Session Laws are not subject to the provisions of Section 54–44.1–11 and may be continued and expended during the 2019–21 biennium.

*443 AB 1020*  
**NDSU Extension Service - Budget No. 630**

*9/15/19*

**House Bill No. 1020**

**Base Level Funding Changes**

	House Version				Senate Version				Senate Changes to House Version Increase (Decrease) - House Version			
	FTE Position	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	252.98	\$25,633,320	\$26,646,689	\$52,280,009	252.98	\$25,633,320	\$26,646,689	\$52,280,009	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	(10.47)			\$0	(10.47)			\$0				\$0
Salary increase		\$577,488	\$473,054	1,050,542		723,916	622,257	1,346,173		146,428	149,203	295,631
Health insurance increase		507,430	509,213	1,016,643		507,430	509,213	1,016,643				0
Retirement contribution increase				0				0				0
Reduce funding for miscellaneous expenses				0				0				0
Increase funding for miscellaneous expenses		100,000		100,000		100,000		100,000				0
Adds funding for extension agent funding				0		870,000		870,000		870,000		870,000
Adds funding for soil conservation				0		121,280		121,280		121,280		121,280
Total ongoing funding changes	(10.47)	\$1,184,918	\$982,267	\$2,167,185	(10.47)	\$2,322,626	\$1,131,470	\$3,454,096	0.00	\$1,137,708	\$149,203	\$1,286,911
<b>One-time funding items</b>												
Add one-time funding for website and digital upgrades				\$0		\$345,000		\$345,000		\$345,000		\$345,000
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$345,000	\$0	\$345,000	0.00	\$345,000	\$0	\$345,000
<b>Total Changes to Base Level Funding</b>	(10.47)	\$1,184,918	\$982,267	\$2,167,185	(10.47)	\$2,667,626	\$1,131,470	\$3,799,096	0.00	\$1,482,708	\$149,203	\$1,631,911
<b>2019-21 Total Funding</b>	242.51	\$26,818,238	\$27,628,956	\$54,447,194	242.51	\$28,300,946	\$27,778,159	\$56,079,105	0.00	\$1,482,708	\$149,203	\$1,631,911

**Other Sections for NDSU Extension Service - Budget No. 630**

Additional income appropriation

House Version
Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.

Senate Version
Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the NDSU Extension Service, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.

Other Sections for NDSU Extension Service - Budget No. 630

Att 3 HB 1020 4/15/19

**House Version**

**Senate Version**

Transfer authority

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

FTE position adjustments

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the NDSU Extension Service and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the NDSU Extension Service into the 2021–23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the NDSU Extension Service into the 2021–23 biennium.

Att 4 HB 1020 4/15/19

**Northern Crops Institute - Budget No. 638**

**House Bill No. 1020**

**Base Level Funding Changes**

	House Version				Senate Version				Senate Changes to House Version Increase (Decrease) - House Version			
	FTE Position	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	11.80	\$1,886,891	\$1,755,830	\$3,642,721	11.80	\$1,886,891	\$1,755,830	\$3,642,721	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	1.00			\$0	1.00			\$0				\$0
Salary increase		\$46,996	\$19,162	66,158		\$54,499	\$22,539	77,038		7,503	3,377	10,880
Health insurance increase		40,158	17,848	58,006		40,158	17,848	58,006				0
Retirement contribution increase				0				0				0
Adjust funding for miscellaneous expenses		(37,738)	100,000	62,262		(37,738)	100,000	62,262				0
Total ongoing funding changes	1.00	\$49,416	\$137,010	\$186,426	1.00	\$56,919	\$140,387	\$197,306	0.00	\$7,503	\$3,377	\$10,880
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	1.00	\$49,416	\$137,010	\$186,426	1.00	\$56,919	\$140,387	\$197,306	0.00	\$7,503	\$3,377	\$10,880
<b>2019-21 Total Funding</b>	12.80	\$1,936,307	\$1,892,840	\$3,829,147	12.80	\$1,943,810	\$1,896,217	\$3,840,027	0.00	\$7,503	\$3,377	\$10,880

**Other Sections for Northern Crops Institute - Budget No. 638**

	House Version	Senate Version
Additional income appropriation	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.	Section 3 provides that in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Northern Crops Institute, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.
Transfer authority	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.	Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

Att 4 HB 1020 4/15/19

**House Version**

**Senate Version**

FTE position adjustments

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Northern Crops Institute and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Northern Crops Institute into the 2021–23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Northern Crops Institute into the 2021–23 biennium.



APP 5 HB 1020 4/15/19

**NDSU Main Research Center - Budget No. 640**

**House Bill No. 1020**

**Base Level Funding Changes**

	House Version				Senate Version				Senate Changes to House Version Increase (Decrease) - House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	336.12	\$49,557,415	\$59,084,828	\$108,642,243	336.12	\$49,557,415	\$59,084,828	\$108,642,243	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes	3.93			\$0	3.93			\$0				\$0
Salary increase		\$1,039,641	\$593,352	1,632,993		\$1,216,726	\$794,225	2,010,951		177,085	200,873	377,958
Health insurance increase		798,276	621,120	1,419,396		798,276	621,120	1,419,396				0
Retirement contribution increase				0				0				0
Adds FTE positions for agribiome initiative				0	4.00	1,160,000		1,160,000	4.00	1,160,000		1,160,000
Adjust funding for miscellaneous expenses		(2,955,742)	3,000,000	44,258		0	2,000,000	2,000,000		2,955,742	(1,000,000)	1,955,742
Reduce funding for capital bond payments		(65,091)		(65,091)		(65,091)		(65,091)				0
Reduce capital funding from special funds			(5,997,398)	(5,997,398)			(5,997,398)	(5,997,398)				0
Total ongoing funding changes	3.93	(\$1,182,916)	(\$1,782,926)	(\$2,965,842)	7.93	\$3,109,911	(\$2,582,053)	\$527,858	4.00	\$4,292,827	(\$799,127)	\$3,493,700
<b>One-time funding items</b>												
Add one-time funding from the strategic investment and improvements fund for extraordinary repairs			\$1,440,465	\$1,440,465			\$1,440,465	\$1,440,465				0
Add one-time funding for a Williston seed cleaning plant		\$250,000	500,000	750,000		\$750,000	0	750,000		500,000	(500,000)	0
Adds one-time funding for two equipment storage sheds				0		600,000		600,000		600,000		600,000
Adds one-time funding for a Williston greenhouse				0			500,000	500,000			500,000	500,000
Total one-time funding changes	0.00	\$250,000	\$1,940,465	\$2,190,465	0.00	\$1,350,000	\$1,940,465	\$3,290,465	0.00	\$1,100,000	\$0	\$1,100,000
<b>Total Changes to Base Level Funding</b>	3.93	(\$932,916)	\$157,539	(\$775,377)	7.93	\$4,459,911	(\$641,588)	\$3,818,323	4.00	\$5,392,827	(\$799,127)	\$4,593,700
<b>2019-21 Total Funding</b>	340.05	\$48,624,499	\$59,242,367	\$107,866,866	344.05	\$54,017,326	\$58,443,240	\$112,460,566	4.00	\$5,392,827	(\$799,127)	\$4,593,700

**Other Sections for NDSU Main Research Center - Budget No. 640**

	House Version
Additional income appropriation	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.

	Senate Version
	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Main Research Center, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.

Other Sections for NDSU Main Research Center - Budget No. 640

Att 5 HB 1020 4/15/19

House Version

Senate Version

Estimated income - Strategic investment and improvements fund

Section 4 provides the estimated income line item in subdivision 4 of Section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs.

Section 4 provides the estimated income line item in subdivision 4 of Section 1 of this Act includes \$1,440,465 of one-time funding from the strategic investment and improvements fund for extraordinary repairs.

Transfer authority

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

Section 7 authorizes the transfer of appropriation authority between the Main Research Center, the branch research centers, NDSU Extension Service, and Northern Crops Institute and provides that any transfers be reported to the Office of Management and Budget.

FTE position adjustments

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Main Research Center and provides that any adjustments be reported to the Office of Management and Budget and the Budget Section.

Unexpended general fund - Excess income

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Main Research Center into the 2021-23 biennium.

Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Main Research Center into the 2021-23 biennium.

Exemption - Williston seed cleaning plant

Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

Section 10 provides the \$1.5 million of special funds appropriation authority for the Williston seed cleaning plant for the 2017-19 biennium is not subject to the provisions of North Dakota Century Code Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

Exemption - Carrington research center and North Central research center

Section 11 exempts any amounts carried over for the seed cleaning plants at the Carrington research center and the North Central research center pursuant to Section 12 of Chapter 45 of the 2017 Session Laws are not subject to the provisions of Section 54-44.1-11 and may be continued and expended during the 2019-21 biennium.

Att 6 HB 1020  
4/15/19

**Agronomy Seed Farm - Budget No. 649**

**House Bill No. 1020**

**Base Level Funding Changes**

	House Version				Senate Version				Senate Changes to House Version Increase (Decrease) - House Version			
	FTE Positions	General Fund	Other Funds	Total	FTE Position	General Fund	Other Funds	Total	FTE Positions	General Fund	Other Funds	Total
<b>2019-21 Biennium Base Level</b>	3.00	\$0	\$1,536,129	\$1,536,129	3.00	\$0	\$1,536,129	\$1,536,129	0.00	\$0	\$0	\$0
<b>2019-21 Ongoing Funding Changes</b>												
Base payroll changes				\$0				\$0				\$0
Salary increase			\$12,819	\$12,819			\$16,460	\$16,460			\$3,641	\$3,641
Health insurance increase			13,386	13,386			13,386	13,386				0
Retirement contribution increase				0				0				0
Total ongoing funding changes	0.00	\$0	\$26,205	\$26,205	0.00	\$0	\$29,846	\$29,846	0.00	\$0	\$3,641	\$3,641
<b>One-time funding items</b>												
No one-time funding items				\$0				\$0				\$0
Total one-time funding changes	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0	0.00	\$0	\$0	\$0
<b>Total Changes to Base Level Funding</b>	0.00	\$0	\$26,205	\$26,205	0.00	\$0	\$29,846	\$29,846	0.00	\$0	\$3,641	\$3,641
<b>2019-21 Total Funding</b>	3.00	\$0	\$1,562,334	\$1,562,334	3.00	\$0	\$1,565,975	\$1,565,975	0.00	\$0	\$3,641	\$3,641

**Other Sections for Agronomy Seed Farm - Budget No. 649**

	House Version	Senate Version
Additional income appropriation	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.	Section 3 provides that, in addition to the amount appropriated as other funds, any other income from federal acts, private grants, gifts, and donations, or from other sources received by the Agronomy Seed Farm, is appropriated for the purposes designated in the act, grant, gift, or donation for the 2019–21 biennium.
FTE position adjustments	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget and the Budget Section.	Section 8 authorizes the State Board of Higher Education to adjust or increase FTE positions for the Agronomy Seed Farm and provide that any adjustments be reported to the Office of Management and Budget and the Budget Section.
Unexpended general fund - Excess income	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Agronomy Seed Farm into the 2021–23 biennium.	Section 9 authorizes the continuation of any unexpended general fund appropriation authority and excess income received by the Agronomy Seed Farm into the 2021–23 biennium.

Att 1

4/22/2019

HB 1020

Prepared by the Legislative Council staff  
for Conference Committee  
April 22, 2019

**HB 1020 - LISTING OF PROPOSED CHANGES TO THE SENATE VERSION**

**Department - UGPTI & NDSU Agricultural Research and Extension**

**Proposed funding changes:**

<b>Description</b>	<b>FTE</b>	<b>General Fund</b>	<b>Special Funds</b>	<b>Total</b>
1 Reduce funding for the UGPTI road study, to provide a total of \$875,000. The House version included \$450,000 for the UGPTI road study.		(\$100,000)	\$0	(\$100,000)
2 Reduce funding for branch research centers by 1.5 percent from the base level. The House version reduced funding by approximately 7 percent.		(\$257,329)	\$0	(\$257,329)
3 Adjust funding for Oakes irrigation site to provide the same funding as the House version		(\$200,000)	\$200,000	\$0
4 Remove increase for county extension agents		(\$870,000)	\$0	(\$870,000)
5 Remove increase for soil conservation grants		(\$121,280)	\$0	(\$121,280)
6 Adjust funding for NDSU Extension Service website and digital upgrades (1)		(\$345,000)	\$0	(\$345,000)
7 Reduce funding for main research center operations by approximately 6 percent from the base level, the same as the House version		(\$2,955,742)	\$0	(\$2,955,742)
8 Remove one-time funding for equipment storage sheds		(\$600,000)	\$0	(\$600,000)
9 Remove one-time funding for Williston Research Center greenhouse		\$0	(\$500,000)	(\$500,000)
<b>Total proposed funding changes</b>		<b>(\$5,449,351)</b>	<b>(\$300,000)</b>	<b>(\$5,749,351)</b>

**Other proposed changes:**

- 1 Provide a 2017-19 biennium appropriation of \$345,000 from the general fund for NDSU Extension Service website and digital upgrades.

Att 1 HB 1020

4/24/2019

HB 1020 - LISTING OF PROPOSED CHANGES TO THE SENATE VERSION

Department - UGPTI & NDSU Agricultural Research and Extension

Proposed funding changes:

Description	FTE	General Fund	Special Funds	Total
1 Reduce funding for the UGPTI road study, to provide a total of \$875,000. The House version included \$450,000 for the UGPTI road study.		(\$100,000)	\$0	(\$100,000)
2 Reduce funding for branch research centers by 1.5 percent from the base level. The House version reduced funding by approximately 7 percent.		(\$257,329)	\$0	(\$257,329)
3 Adjust funding for Oakes irrigation site to provide \$100,000 from the general fund and \$100,000 from special funds.		(\$100,000)	\$100,000	\$0
4 Remove increase for county extension agents		(\$870,000)	\$0	(\$870,000)
5 Remove increase for soil conservation grants		(\$121,280)	\$0	(\$121,280)
6 Adjust funding for NDSU Extension Service website and digital upgrades (1)		(\$345,000)	\$0	(\$345,000)
7 Reduce funding for main research center operations by approximately 6 percent from the base level, the same as the House version		(\$2,955,742)	\$0	(\$2,955,742)
8 Remove one-time funding for equipment storage sheds		(\$600,000)	\$0	(\$600,000)
9 Remove one-time funding for Williston Research Center greenhouse		\$0	(\$500,000)	(\$500,000)
10 Reduce funding from SIIF for extraordinary repairs, to provide a total of \$940,465		\$0	(\$500,000)	(\$500,000)
Total proposed funding changes		(\$5,349,351)	(\$900,000)	(\$6,249,351)

Other proposed changes:

- 1 Provide a 2017-19 biennium appropriation of \$345,000 from the general fund for NDSU Extension Service website and digital upgrades.
- 2 Provide legislative intent relating to the Williston Research Center greenhouse.

Att 1 HB 1020 4/25/2019

Prepared by the Legislative Council staff  
for Conference Committee  
April 25, 2019

**HB 1020 - LISTING OF PROPOSED CHANGES TO THE SENATE VERSION**

**Department - UGPTI & NDSU Agricultural Research and Extension**

**Proposed funding changes:**

<b>Description</b>	<b>FTE</b>	<b>General Fund</b>	<b>Special Funds</b>	<b>Total</b>
1 Reduce funding for the UGPTI road study, to provide a total of \$875,000. The House version included \$450,000 for the UGPTI road study.		(\$100,000)	\$0	(\$100,000)
2 Remove increase for soil conservation grants		(\$121,280)	\$0	(\$121,280)
3 Adjust funding for NDSU Extension Service website and digital upgrades (1)		(\$345,000)	\$0	(\$345,000)
4 Remove one-time funding for equipment storage sheds		(\$600,000)	\$0	(\$600,000)
5 Reduce funding from SIIF for extraordinary repairs, to provide a total of \$940,465		\$0	(\$500,000)	(\$500,000)
6 Reduce funding for NDSU Extension Service salaries		(\$125,000)	\$0	(\$125,000)
7 Increase funding for branch research center salaries, providing \$62,500 each to the Dickinson Research Center and the North Central Research Center		\$125,000	\$0	\$125,000
Total proposed funding changes		<u>(\$1,166,280)</u>	<u>(\$500,000)</u>	<u>(\$1,666,280)</u>

**Other proposed changes:**

- 1 Provide a 2017-19 biennium appropriation of \$345,000 from the general fund for NDSU Extension Service website and digital upgrades.
- 2 Provide legislative intent relating to the maintenance and operations of the Williston Research Center greenhouse.