



1. Greenhouse Utilities

Situation: Phase II of the greenhouse is under construction. Upon completion, the NDAES is expected to pay for utility costs associated with the complex.

Need: An increase in the general fund appropriation for utility costs is needed for the final phase of the greenhouse to be operational – \$173,622



2. Enhancing Soil Productivity and Land Management for Future North Dakotans

Situation: Saline and sodic soils affect 25 percent (12.6 million acres) of North Dakota agricultural land. Research to reduce soil issues, identify ways to better manage lands for improved crop and livestock productivity, and determine methods to better utilize lands for recreation and wildlife would enhance the profitability of landowners in the state and protect this important resource for future generations.

Need: Additional Experiment Station personnel and operating at NDSU, HREC, CREC, WREC and CGREC – \$1,410,000



3. Infrastructure

Situation: Research costs continue to escalate throughout the AES. This increased cost hampers the ability of scientists to carry out their research mission, reduces their ability to hire students, and limits their ability to purchase and utilize the necessary equipment that will allow them to carry out their research for the benefit of North Dakota. Reduced office support staff requires that scientists handle routine paperwork, reducing their overall efficiency.

Need: Additional funding for the Revolving Equipment Funds (Main Station and REC), additional operating funds at Main Station, and office support staff – \$1,880,000



4. Improving the State's Economy by Enhancing Crop Development Efforts

Situation: Crop improvement efforts are critical to the state's economy. The competitiveness of our state's farmers relies on the high-yielding, disease-resistant, and high-quality varieties that are developed and released by the NDAES. These varieties are readily accepted throughout the state; for example, surveys have shown that more than 68 percent of the North Dakota acreage planted to hard red spring wheat is planted to varieties developed by our hard red spring wheat program – the percentage is higher for durum wheat. In general, \$1 invested in variety development generates more than \$200 in return to the state. North Dakota produces more than 90 percent of the U.S. canola production, yet lacks a program to deliver superior lines for use in the state. Farmers throughout the state rely on NDAWN to help protect their crops by monitoring weather conditions conducive to disease development, and identification of appropriate disease control measures for western North Dakota is lacking.

Need: Technical support for breeding and pathology programs, variety testing, canola breeding at Main Station, CREC, LREC, WREC, NCREC; increased support for NDAWN, plant pathologist at WREC. – \$2,700,000



5. Improving Animal Productivity and Livestock Stewardship for Increased Profitability in the North Dakota Livestock Industry

Situation: Livestock production throughout the U.S. is under increasing scrutiny, and producers face many challenges in rising production costs, increased accountability on animal welfare issues, and environmental challenges. Finding ways to expand beef cattle finishing in the state while improving environmental sustainability and enhanced animal care and husbandry will enhance the state's economy and allow our livestock producers to remain a vital component of agriculture.

Need: Technical support at Main Station and CREC, animal scientist at Main Station and operating support – \$810,000

ND Agricultural Experiment Station

2011-13 Program and Infrastructure Needs as Ranked by SBARE (continued)

6. Crop Commodity Quality/Trait and Utilization Development

Situation: North Dakota is known throughout the world as a source of high-quality crop commodities. To maintain this reputation, new evaluation programs and other research will focus on appropriate quality characteristics. New uses of traditional crops also will be explored.

Need: Additional staffing and operating at Main Station – \$1,100,000

7. Animal Health Initiative

Situation: North Dakota's animal industries require access to high-quality animal health care. Identifying, confining and managing diseases are critical to the health of this important industry.

Need: Additional staffing in at Main Station and DREC; operating funds – \$1,010,000

8. Plant Physiologist

Situation: Resistance in sunflower is being aggressively pursued. Understanding the physiological mechanisms involved in resistance is important to determine the appropriate methods to incorporate and implement resistance genes.

Need: Salary for plant physiologist at Main Station and operating funds – \$290,000

9. State Data Center

Situation: State decision makers need to have unbiased information relating to evaluating parameters that allow for enhanced growth in the state's economy and determining the impact on federal policies that may impact North Dakotans to make appropriate decisions for the state.

Need: Additional staffing – \$250,000

10. Organic/Sustainable Agriculture Systems

Situation: North Dakota is second only to California in acreage devoted to organic crops. Research is lacking in organic/sustainable farming systems for this region of the country. A systems approach to nontraditional farming practices would be explored.

Need: Technical and operating at CREC and DREC – \$300,000



1. Infrastructure: Technical Support

Situation: Extension specialists are one deep, work with multiple crops and programs, and undertake significant applied research activities. Programs can be expanded efficiently with additional technical support.

Need: Technical support in Plant Sciences, Plant Pathology, Entomology and Nutrition – \$450,000



2a. Soil Health and Land Management

Situation: Saline and sodic soils affect 25 percent (12.6 million acres) of North Dakota agricultural land. Many land managers are considering expensive land modifications, such as tiling, to deal with this issue or nonconventional cover crops as a means to improve soil health.

Need: Additional Extension soils and land management staff at NDSU, LREC and NCREC – \$690,000



2b. Livestock Stewardship

Situation: Livestock production is under increasing scrutiny, and producers face many challenges. Animal welfare and humane animal handling are increasingly important to consumers and the livestock industry. Several states are passing laws intended to define the proper care and treatment of animals.

Need: Additional staffing in Animal Sciences – \$250,000



3a. Agents-in-Training and Summer Internship Program

Situation: The NDSU Extension Service could experience historic levels of retirements in the next few years. The complexity of Extension work can be extremely challenging for new hires. Agent-in-training positions have helped equip candidates with the skills needed to be successful, and summer internships also have proven to be an effective recruiting tool.

Need: Salary support for internships and training positions – \$500,000



3b. Crop Protection

Situation: The wide variety of crops grown in North Dakota, along with the significant diversity in growing conditions that exist across the state, makes covering the specific needs of every region very difficult for Extension specialists. Crop diseases, weeds and insects all present unique challenges in various regions across the state.

Need: Crop protection area specialists at HREC and LREC – \$440,000

NDSU Extension Service

2011-13 Program and Infrastructure Needs as Ranked by SBARE (continued)

4a. Infrastructure: Information Technology

Situation: The Extension staff utilizes a variety of Web tools to work together on information to share with clients. Extension also has launched a national Web presence that provides a foundation for Extension educators to collaborate and educate nationally.

Need: Salary support for Agricultural Communication technician – \$150,000

4b. Agricultural Entrepreneurship and Rural Business Transition

Situation: North Dakota's rural economy requires increased entrepreneurial activity plus the retention of existing businesses for continued growth. Many North Dakota farm, ranch and rural business owners are aging and contemplating retirement. Transition planning is a critical need to sustain local ownership and maintain continued existence of farms, ranches and rural businesses.

Need: Additional staffing in Agribusiness and Applied Economics – \$500,000

5. Health, Wealth and Quality of Life for North Dakotans

Situation: Social capital investments yield economic savings and increased quality of life for North Dakotans. Recent statewide hearings concluded that parent and early childhood education is a significant need in the state. Research shows that the "Gearing Up for Kindergarten" program is just one example of a parenting program that can address this need effectively.

Need: Salary support for the Parent Resource Center network – \$500,000

6. Identity-preserved and Specialty Agriculture

Situation: Specialty agricultural systems are gaining interest from food consumers. The concept of "local foods" also is gaining interest in many communities. And many producers are exploring the production and marketing of food grade crops that require strict identity-preservation protocols.

Need: Additional area staffing at DREC and another location to be determined – \$440,000

7. Infrastructure: Operating

Situation: Nine Extension state staff, along with support staff, are located at three different office locations in Bismarck. This arrangement is inefficient in utilizing support staff, office equipment and work flow, and it provides very limited public visibility.

Need: Operating support for office rent – \$80,000

2011-13 Capital Improvement and One-time Needs as Ranked by SBARE



ND Agricultural Experiment Station

■ 1. Research Greenhouse Complex – Final Phase – \$6,991,650 (BL-3 portion \$2,502,931 special funds)

The NDAES greenhouse complex needs secure greenhouse space to carry out research on crops that meet consumer and customer demands. Completion of this facility will provide conventional, BL-2 and BL-3 facilities desperately needed for 21st century research agendas.

■ 2. Agronomy Laboratories – \$5,275,000

Existing agronomy laboratories at CREC, HREC and LREC are in need of replacement. Current facilities were not designed as laboratory space (e.g., potato storage or old granary), making work conditions inefficient and unhealthy. A new facility at CGREC would provide space for a new program investigating crops for bioproducts.

■ 3. Seed Conditioning Plants – \$8,400,000

The seed cleaning facilities at NCREC, CREC, LREC and WREC are in need of replacement. Facilities are old and/or not functional for today's market. Parts on some equipment are no longer available; new technology in seed cleaning/conditioning would allow North Dakota farmers to obtain high-quality seed of new varieties in a timely manner.

■ One-time deferred maintenance

The estimated total outstanding deferred maintenance for the Agricultural Experiment Station is \$8,406,803, per the most recent master plan. This figure encompasses repairs of facilities for worker safety reasons, ADA compliance, and to improve the overall infrastructure by preventing further deterioration. The amount of \$8,406,803 is only a best estimate at this time. A one-time request of \$4,203,401 would be 50 percent of the items on the master plan list.



NDSU Extension Service

■ 4-H Conference Center

A year-round learning/conference center located at Western 4-H Camp near Washburn is needed to expand youth camping opportunities and provide an affordable alternative for in-service trainings, workshops, conferences, and community and family events – (\$2,500,000 general fund request and \$1,300,000 special fund request)

■ One-time Requests

Interactive Video Equipment Upgrades at 20 Sites
– \$262,000

Update of North Dakota Agricultural Land Valuation
Model – \$50,000

■ Additional Request

North Dakota Soil Conservation Committee for
technical assistance grants to Soil Conservation
Districts – \$150,000