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CAPITAL PROJECTS DETAIL

640 NDSU Main Research Center

Version: 2013-R02-00640

Date: 12/07/2012

Time: 15:43:39

Capital Project

Seed Conditioning Plants (NCREC CREC WREC LREC)

	Request/Optional	Recommendation
Total Project Cost	3,470,000	0
General Fund	3,470,000	0
Federal Funds	0	0
Special Funds	0	0
Bonding	0	0

Is this a multibiennium project? No **No of Biens:** 1 **Est. Costs** 3,470,000

Future Increased Costs Associated with Project Approval

	2013-2015	2015-2017	2017-2019
Salaries and Wages	0	0	0
Operating Expenses	0	0	0
Equipment > $5,000	0	0	0
IT Equipment > $5,000	0	0	0
Special Lines	0	0	0
Total	**0**	**0**	**0**

	2013-2015	2015-2017	2017-2019
FTE	0.00	0.00	0.00
General Fund	0	0	0
Federal Funds	0	0	0
Special Funds	0	0	0
Total	**0**	**0**	**0**

Project Specifications

Seed-cleaning Mobile Mills

(NCREC, CREC, WREC, LREC) - Option B - $3,470,000

Self-contained (Portable) Conditioning Mill (CREC) - $905,000

The current seed plant was constructed in 1963 and is out of date. It is not able to accommodate air exchange and dust control mechanical features to address worker safety concerns. The present building is too small to retro-fit with larger capacity seed conditioning equipment.

A self-contained (portable) conditioning mill, color sorter, steel storage building and necessary ancillary improvements are needed. The self-contained mill includes an air screen cleaner, an indent mill and a gravity mill.

Self-contained (Portable) Conditioning Mill (LREC) - $755,000

The Langdon Research Extension Center produces an average of 15,000 bushels of regionally adapted foundation seed production for use by the region's producers in their cropping enterprise. The current foundation seed facility at the LREC was constructed in 1962 and utilizes the same equipment. It is outdated, inefficient and very slow, and needs to be modernized to support a foundation seed system demanded by the region's producers. In 2008, the condition of the seed cleaning plant was cited as the No. 1 safety hazard on the grounds of the LREC. The center has no room for a renovation, such as adding another leg.

A self-contained (portable) conditioning mill, steel storage building and necessary ancillary improvements are needed. The self-contained mill includes an air screen cleaner, an indent mill and a gravity mill.

Self-contained (Portable) Conditioning Mill (NCREC) - $905,000

The present facility, built in 1949 and added onto in 1982, is too small and inefficient, and is a health and safety problem due to inadequate dust handling. It is not equipped to handle pulse crops and oilseeds without excessive seed damage. A self-contained (portable) conditioning mill, steel storage builTding and necessary ancillary improvements are needed. The self-contained mill includes an air screen cleaner, an indent mill and a gravity mill.

Self-contained (Portable) Conditioning Mill (WREC) - $905,000

The current building at the Williston Research Extension Center used to house the foundation seed conditioning equipment was built in the mid-1950s. The area designated to unload trucks can accommodate only a small, single-axle truck and does not have sufficient unloading capacity. Grain legs that move the dirty and clean grain are all too small for efficient movement of grain.

A self-contained (portable) conditioning mill, steel storage building and necessary ancillary improvements are needed. The self-contained mill includes an air screen cleaner, an indent mill and a gravity mill.

Estimated project costs include:

- Planning, Permits, and Insurance - $52,700
- Construction - $532,300
- Furniture, Fixtures, and Equipment - $2,850,000
- Contingency - $35,000

Cost Benefit Analysis

A committee was organized by SBARE to explore options for the seed cleaning needs of NDSU Research. Due diligence included review of past recommendations, collection of available data and presentation of multiple solutions to the SBARE board.

Options considered included:

- Continuing with the current plant
- Portable mills or portable mills and stationary color sorters
- Cleaning with private seed cleaning facilities
- One or two stationary facilities with portable mills
- Remodeling existing facilities

From the options, two alternatives emerged: a fixed plant concept similar to what was proposed last session (11-13 request was $8,400,000) and a mobile mill concept with a cost of $3,470,000. SBARE determined that the most cost effective and efficient method of addressing the need for all of North Dakota Agriculture was the mobile mill concept. This is the #2 ranked priority by SBARE.

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Capital Project

Agronomy Laboratories (CREC HREC LREC CGREC)

	Request/Optional	Recommendation
Total Project Cost	5,925,000	4,300,000
General Fund	5,925,000	4,300,000
Federal Funds	0	0
Special Funds	0	0
Bonding	0	0

Is this a multibiennium project? No **No of Biens:** 1 **Est. Costs** 5,925,000

Future Increased Costs Associated with Project Approval

	2013-2015	2015-2017	2017-2019
Salaries and Wages	0	0	0
Operating Expenses	0	0	0
Equipment > $5,000	0	0	0
IT Equipment > $5,000	0	0	0
Special Lines	0	0	0
Total	**0**	**0**	**0**

	2013-2015	2015-2017	2017-2019
FTE	0.00	0.00	0.00
General Fund	0	0	0
Federal Funds	0	0	0
Special Funds	0	0	0
Total	**0**	**0**	**0**

Project Specifications

Agronomy Labs (CREC, HREC, LREC, CGREC) - $5,925,000

Agronomy Lab (CREC) - 10,040 square feet new construction - $2,500,000

The Carrington Research Extension Center agronomy program is perhaps the largest and most diverse of the out-state RECs. Yet this program must perform the duties and processes associated with this large program in an old (1962-era) potato warehouse. For example, more than 25,000 individual samples are handled in multiple processing steps in the confines of this antiquated facility. During the course of the past 30 years, the CREC agronomy staff have self-renovated the interior of this warehouse to create a degree of functionality, given the limitations. First and foremost, the current agronomy laboratory does not meet worker safety and protection standards. The current laboratory has limited space for experiment preparation and processing, sample cleaning, dryers and field sample storage. The current facility lacks some basic research functionality, such as dust and air exchange capability, isolated chemical handling space and controlled environment for seed storage plus it has no room for plant pathology experiments. The innovative and proactive research efforts of the CREC agronomist and plant pathologist are severely compromised by the limitations and lack of modern capabilities in the present facility.

Agronomy Lab (HREC) - 8,000 square feet new construction - $1,800,000

The agronomy and range research programs at the NDSU Hettinger Research Extension Center have grown beyond the ability of our agronomy lab to house them. The current lab is a converted granary with inadequate sample storage space, inadequate drying ovens, and no Internet service or the ability to provide a modern office working environment. Additionally, the HREC has inadequate equipment storage space needed to store the agronomy research program's seed drills and combine, and the range research program's equipment. A modern agronomy and range lab of approximately 8,000 square feet is needed to provide technicians and graduate students with office space, technical facilities in line with modern research (Internet access, dust-free environments to work on computers, and lab areas for handling radio telemetry collars for wildlife and domestic livestock), new drying ovens and sampling processing areas, and storage for research samples and equipment.

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Agronomy Lab (LREC) - 5,500 square feet new construction - $1,225,000

The Langdon Research Extension Center has an active agronomy research program that includes all aspects of crop production, including, but not limited to, soil health, plant pathology, entomology, crop fertility, weed control and variety development. The LREC has no dedicated facility to store, process and perform an array of tests to compile research data the region's producers need to solve crop production problems and questions. A new agronomy lab would allow LREC scientists to conduct this work and, in the long run, would save resources that are expended on shipping research materials away for processing and testing.

Agronomy Lab (CGREC) - 4,000 square feet new construction - $400,000

With the addition of a forage agronomist at the Central Grasslands Research Extension Center, the center is in need of a forage lab/storage building. Currently, samples collected in the field by the scientist are processed in a corner of an equipment storage building with a dirt floor. The dust from opening the overhead door and moving equipment renders this area very dusty and makes keeping scales and computers clean very difficult. The new building would house the forage drying ovens, computer, scale, etc., for sample data processing. It also would house the grinders and equipment to process the forage samples in preparation for nutrient analysis. The building would be 40 by 100 feet, with half used for the forage lab and the remainder used for sample and equipment storage. We are forced to store plot equipment outside, where the weather takes its toll on the equipment. New plot equipment such as self-propelled forage harvesters cost upwards of $100,000 and should be maintained in a clean, dry storage environment.

Estimated project costs include:

- Planning, Permits, and Insurance - $503,625
- Construction - $4,850,375
- Furniture, Fixtures, and Equipment - $300,000
- Contingency - $271,000

Cost Benefit Analysis

Cost/Benefit complete. SBARE carefully considered the needs of North Dakota agriculture and determined that Agronomy Labs are the top priority.

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Capital Project

Livestock Facilities (CREC HREC)

	Request/Optional	Recommendation
Total Project Cost	1,650,000	0
General Fund	1,650,000	0
Federal Funds	0	0
Special Funds	0	0
Bonding	0	0

Is this a multibiennium project? No **No of Biens:** 1 **Est. Costs** 1,650,000

Future Increased Costs Associated with Project Approval

	2013-2015	2015-2017	2017-2019
Salaries and Wages	0	0	0
Operating Expenses	0	0	0
Equipment > $5,000	0	0	0
IT Equipment > $5,000	0	0	0
Special Lines	0	0	0
Total	**0**	**0**	**0**

	2013-2015	2015-2017	2017-2019
FTE	0.00	0.00	0.00
General Fund	0	0	0
Federal Funds	0	0	0
Special Funds	0	0	0
Total	**0**	**0**	**0**

Project Specifications

Livestock Facilities (CREC, HREC) - $1,650,000

Feedlot Research Support Facility/Pen Expansion (CREC) - $1,150,000

Construction of a multiuse feedlot research support facility at the Carrington Research Extension Center will improve feedlot research operational capability, assist in sustaining Institutional Animal Care and Use Committee compliance, attain worker protection standards and reduce maintenance costs for equipment. The CREC has a critical need for a facility that would combine the functions of storing and dispensing pharmaceuticals and animal health supplies; allow for the efficient processing of feeds, blood and tissue; and provide office space for technical staff with computer support and records storage, indoor storage for feeding equipment used on a daily basis, and a general shop area for equipment maintenance and minor repairs. Meeting the expanding demands for feedlot research is partially limited by available pens at the Carrington Research Extension Center. Current pens are fully utilized. The CREC continually is challenged to do more research; however, feedlot pen availability is a clear limitation. The addition of a minimum of 16 pens that would hold 160 head of cattle would allow the CREC to conduct one additional experiment per feedout period. Additional pens will allow more treatments and replications in feedlot research studies, which would improve statistical confidence and precision. Also, any feedlot pen expansion must include the associated waste-containment facilities to remain compliant with state law.

Livestock Processing Barn and Educational Facility (HREC) - $500,000

The Hettinger Research Extension Center has provided educational events to veterinarians, Extension specialists and producers from 14 states and three countries. These events include various demonstrations, including, but not limited to, carcass ultrasound evaluation, shearing and wool grading schools, and technical cattle feedlot schools and trainings. All of these events are held in the former dairy barn, built in 1909, or outdoors. This facility is inadequate to provide state-of-the-art training and educational events. A multipurpose livestock facility is needed to address the research and outreach needs of the center and the stakeholders in the region.

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Estimated Project Costs include:

- Planning, Permits, and Insurance - $120,780
- Construction - $1,357,620
- Furniture, Fixtures, and Equipment - $99,000
- Contingency - $72,600

Cost Benefit Analysis

Cost/Benefit complete. SBARE carefully considered the needs of North Dakota agriculture and determined that Livestock Facilities at Carrington and Hettinger are the #3 priority.