

NORTH DAKOTA UNIVERSITY SYSTEM

SYSTEMWIDE MASTER PLAN

June 2014

Document prepared by:

PAULIEN & ASSOCIATES, INC.

899 Logan St., Suite 508
Denver, CO 80203-3156
(303) 832-3272
www.paulien.com

Acknowledgements

Document prepared by:

PAULIEN & ASSOCIATES, INC.
Denver, Colorado

Daniel K. Paulien, *President*
Frank Markley, *Principal*
Jennifer Bowdry, *Chief Project Specialist*

in conjunction with

VFA, INC.

Peter Scanlon, *Vice President*
Ray Dufresne, *Vice President*
Martin Harrison, *Project Manager*
Joe Xavier, *Senior Consultant*

NCHEMS

Dennis Jones, *President*
Patrick Kelly, *Senior Associate*

JLG ARCHITECTS

James Galloway, *Partner*

LEEF CONSULTING GROUP

Paul Leef, *Principal*

VANTAGE TECHNOLOGY CONSULTING GROUP

Geoffrey Tritsch, *Principal*
Jonathan Young, *Senior Consultant*

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NORTH DAKOTA UNIVERSITY SYSTEM

Larry C. Skogen, *Interim Chancellor*
Laura Glatt, *Vice Chancellor for Administrative Affairs*
Rick Tonder, *NDUS, Director, Facility Planning*

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Corry Kenner, *Vice President for Administrative Affairs*
Lloyd Halvorson, *Assistant Vice President for Instructional Services*
Donald Jorgenson, *Physical Plant Director*
Daniel Johnson, *Registrar*

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Mark Lowe, *Vice President for Finance and Administration*
Cynthia Pemberton, *Provost and Vice President for Academic Affairs*
Ken Haught, *Dean of the College of Arts & Sciences*

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Brian Foisey, *Vice President for Administration and Finance*
Lenore Koczon, *Vice President for Academic Affairs*

Acknowledgements

Richard Jenkins, *Vice President for Student Affairs*
Kevin Harmon, *Assistant Vice President for Enrollment Services*
Kristen Warmoth, *Dean, Center for Extended Learning*
Roger Triplett, *Athletics Equipment Manager*

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Drake Carter, *Provost and Vice President for Academic Affairs*
Tamara Barber, *Interim Executive Vice President, Vice President for Finance and Operations*
Kari Knudson, *Vice President of National Energy Center of Excellence*
Donna Fishbeck, *Associate Vice President for Student Affairs*
Don Roethler, *Chief Buildings and Grounds Officer*

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Ray Nadolny, *President*
Terry Olson, *Vice President of College Advancement*
James Foertsch, *Vice President for Business Services*

DAKOTA COLLEGE AT BOTTINEAU

Ken Grosz, *Campus Dean*
Kara Bowen, *Director, Business Affairs*

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Douglas Dawes, *Vice President for Business Affairs*
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Pracash Mathew, *Vice President for Student Affairs*
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Kenneth Grafton, *Vice President for Agriculture and University Extension*
William Nganje, *Chair, Dept. of Agribusiness and Applied Economics*
Gina Haugen, *Assistant to the Vice President*

UNIVERSITY OF NORTH DAKOTA

Tom DiLorenzo, *Provost and Vice President Academic Affairs*
Joshua Riedy, *Vice Provost and Chief Strategy Officer*
Alice Brekke, *Vice President for Finance and Operations*
Peggy Lucke, *Associate Vice President for Finance and Operations*
Larry Zitzow, *Director of Facilities Management*
Gwen Halaas, *Senior Associate Dean of Academic Affairs, School of Medicine and Health Sciences*
Randy Eken, *Associate Dean Administration and Finance, School of Medicine and Health Sciences*

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EXECUTIVE SUMMARY

Introduction and Overview

The North Dakota University System (NDUS) was tasked with preparing a systemwide master plan. Paulien & Associates, Inc. of Denver, Colorado and its multi-disciplinary team of consultants were selected to prepare the systemwide master plan following a national search.

This work was contracted in January 2014. Data was gathered during much of February 2014, and the majority of the analyses have been conducted since late February. The consulting team has visited each of the NDUS institutions on multiple occasions. The Paulien & Associates core team visited each of the campuses in early March, meeting with the campus leadership and key planning and facilities officials. These visits produced extremely useful discussions regarding the role and mission of each institution, how facilities are impacting the mission, and allowed the consultant to gain unique perspectives regarding the specific missions of each campus. The Paulien core team was accompanied throughout its visits by JLG Architects, which provided invaluable local knowledge and experience regarding the campuses.

Separate campus visits were held by VFA to inspect the facilities selected for condition assessments, to review the quality of the heating plants, and to discuss the capital planning process in making recommendations for improvement.

The consulting team was very impressed by the dedication shown by the campus leadership at all locations. Some of the North Dakota sites are remote and have small enrollments. There is a strong effort to add to on-site enrollment with a variety of online, video, and blended learning approaches. The consultants believe that each of the institutions is providing important educational service to their regions. The consultants were also apprised regarding the workforce quadrants and how that is providing very strong training.

The consultants met with leadership from Agriculture and Medicine at the two research universities to understand those two important statewide programs, one operating out of North Dakota State University (NDSU) and the other out of the University of North Dakota (UND).

Key Findings

Demographic Analysis

The consultant analyzed North Dakota data with regard to changing population and demographics in the state and its various regions, college attendance patterns, and workforce supply and demand for each of the regions of the state. Significant results include:

- Between 1960 and 2010, the statewide resident population increased by 6.3%. Between 2010 and 2025, the resident statewide population is expected to increase by 25% or three times the 60 year rate due to the impact of energy related employment.
- Population projections (2013-2025) indicated that the Planning Regions 1, 2, and 8 will experience disproportionate shares of the population growth in the state. Population growth in these three regions is proportional to projections for oil field development in the petroleum industry and future employment in the Williston Basin.

- By 2025 it is estimated that NDUS institutions could enroll more than 60,000 students, an increase of approximately 26%. While 60,000 could be enrolled, the number of graduates will be considerably less. At a high level, the North Dakota Labor Market Information Center projects a need for more than 78,000 new jobs between 2010 and 2020. Given NDUS enrollment projections for 2020 and the current level of degree production, NDUS higher educational institutions may not be able to supply enough graduates to meet employment demand.
- In summarizing patterns of college attendance, for most of the regions in the state, college attendance patterns are determined largely by the nature of the institution(s) located within the region. This pattern is true for recent high school graduates and is even more pronounced for part-time and adult students. Given the combination of growth and attendance patterns we conclude that the capacity issues are greatest at the two-year level, particularly in the Bakken and Grand Forks regions.

Workforce/Program Alignment

The Workforce/Program Alignment section reviews current and projected occupational data in an effort to determine the gaps in the supply and demand of skilled workers in a wide range of occupational clusters or career fields. Gaps were studied between occupational demand and the number of higher education graduates produced using data compiled by a company called Burning Glass.

The consultant also analyzed workforce demand by reviewing workforce projections produced by the North Dakota Labor Market Information Center and the Georgetown Center for Education and the Workforce.

Findings include:

- In reviewing statewide long-term employment demand projections by entry level education requirements, an overwhelming number of jobs (138,405 positions) require a high school diploma or less. However, most of these jobs are entry-level, low-wage positions. Demand for baccalaureate and above employment positions (21,012) is greater than those at the sub-baccalaureate level with 15,798 positions. As there are more replacement openings at the baccalaureate and above level, the number of total job openings in this category is greater than the sub-baccalaureate level.
- In a completely separate study, data prepared by the Georgetown Center for Education and the Workforce looks at workforce demand through total job openings from 2102 to 2020. This data makes the point that many of the jobs that will become available by 2020 in North Dakota will require education at less than the baccalaureate level with 62,000 job openings at the Associate's degree and the Some College, No Degree level. An additional 43,433 openings will be at the bachelor's level. These data vary from those published by the North Dakota Labor Market Information Center mostly due to data projection methodology and timeframe.
- In scanning the regional Burning Glass outcomes, the overall results indicate that most career fields in under-supply are at the sub-baccalaureate level in the Bakken region of the state. Career fields dealing with Installation, Maintenance, and Repair occupations are in greatest demand. At the baccalaureate level, the statewide analysis indicates that job supply and demand are in relative balance. While an under-supply of baccalaureate positions in allied health, nursing, computer & IT, and life/physical scientists were identified in the Bakken and Bismarck regions, the actual number of real-time jobs is relatively small.
- The Burning Glass data also suggests that there are not large labor shortages in other regions of the state, at least in those areas that have a major impact on facilities requirements. There are needs in low-wage health care support occupations, but these shortages are better explained by unattractive salaries than by training needs.
- In 2011-12, almost 73% of the degrees awarded at NDUS public colleges and universities were at the baccalaureate level or higher. Burning Glass statewide outcomes data on job supply and demand suggests that statewide employment needs will require additional graduates at the sub-baccalaureate level in key programs areas. The current supply of post-baccalaureate degrees is currently meeting demand in the vast majority of career areas.

Facility Condition Assessment

VFA conducted the assessment of a significant sampling of facilities at each institutions, as selected by campus representatives.

- There is a great deal of deferred maintenance.
- NDUS faces a significant backlog that is approximately \$800 million over six years.
- It is critical that some of these facilities receive attention, or they may need to be demolished because of passing a reasonable threshold for achieving the necessary improvements through rehabilitation/renovation.
- The heating plants at most campuses are in need of major attention. Two of them are on the brink of failure. Immediate attention is needed for this item.
- NDUS buildings are in “fair” condition. At \$86/SF (from 41 sampled buildings assessed), the estimated deferred maintenance backlog for NDUS’ 9.8M GSF of appropriated buildings would be \$736M. Including known issues at heating plants (\$40M) and site infrastructure (\$12M) brings the total deferred maintenance due by 2020 to \$808M. As more systems continue to wear out, it would take \$292M per biennium to maintain the current condition. Funding of \$40M per biennium through 2020 would double deferred maintenance to \$1.65B.

Review of Individual Master Plans

The Paulien core team and Paul Leef, who has led master planning efforts at major higher education institutions as an inside planning director, reviewed the most recent master plans from each institution.

- The master plans do not contain any space utilization or space needs elements, which is normally a part of master planning. It would be highly desirable for NDUS to move toward adding these elements to the individual master plans.

No facilities inventories were provided to the team until early March, when the two research universities were able to provide their inventories, and Minot State University indicated during the campus visit that one could be provided. Until such room inventories are available across the system, it is not possible to conduct the type of macro-level analysis recommended.

- Only three institutions were able to produce room inventories. Room inventories need to be developed and maintained at each institution.

Two alternative approaches were attempted. The consultant conducted two rounds of classroom utilization from the course data that was submitted centrally to calculate student credit hours for the official records. There is no room file that provides information on which rooms are classrooms, the room capacity, or a room’s square foot amount, so square foot per seat cannot be calculated. After having preliminary data reviewed by knowledgeable staff within NDUS and receiving comments during the campus visits, the data was deemed unreliable and was not included in this analysis. The institutions need to keep updating the course information so that the current locations where courses are taught are reflected in the term in which the information is submitted.

- A room file for classrooms needs to be developed to allow classroom utilization to be run. This could be done before a complete room inventory is developed but would need attention from each institution to compile accurate information.
- The consultant was not able to draw any reliable conclusions regarding the classroom usage based on using the statewide course file.

Capital Request Evaluations

- The most effective approach to better evaluate capital projects, which has been used in multiple jurisdictions where the consultant has been hired to advise on systemwide planning, is a macro-level analysis providing square feet per full time student by major space categories with other metrics used for research and offices.

- Separation of deferred maintenance projects from projects involving programmatic renovation or construction of campus facilities is desirable.
- The consultant believes space needs macro-level modeling to be a very worthwhile approach and urges NDUS to develop room inventories at the eight institutions that do not have them. This would allow the development and testing of such an approach.
- The current capital project evaluation process involves the institutions self-identifying which criteria a project meets to assist NDUS in making a decision as to the rankings. The consultant has worked with systems that developed numeric ranking processes and believes they could be useful in evaluating projects.
- NDUS is developing numerical rankings based on the consultant's first draft recommendations. These use a slightly refined set of criteria. The consultant strongly supports this approach.

Research and Development Issues

The consultant was asked to review the current research at the two research universities.

- The two universities have substantially increased their research over the past decade.
- More than half the research expenditures at NDSU are from the Agricultural programs.
- A very small part of the UND research is from Medicine. This is because the purpose of the School of Medicine has been to train practitioners for North Dakota.
- There are opportunities to increase translational research and look to growth in that area.

IT Infrastructure

Vantage Technology Consulting Group conducted a high level review of current NDUS IT shared services, the current direction of NDUS IT, and recommendations of how NDUS can best serve the needs of the campuses and provide centralized/enterprise IT services that will be either more efficient or effective.

Summary

The consulting team strongly urges NDUS to address the backlog of deferred maintenance and hopes that it will be successful in securing needed funds to make a strong forward movement. The system is urged to encourage its institutions to budget at least a 2% amount in an ongoing basis to allow maintenance to be handled on a timely basis, rather than having large portions deferred.

The consultants believe the master planning that has been done is a good start and suggest that space utilization and space needs be added into the process and other refinements be made.

The consultants recommend that facilities room data be developed to allow a space needs approach to be tested.

The consultants strongly support the NDUS efforts to refine the criteria and create a scoring system to allow individual projects to be ranked.

Two- and four-year campuses are cooperating on specific programs. Currently in Bismarck there is physical representation from four-year institutions providing certain academic services from that location.

NDUS should investigate the process utilized by South Dakota higher education institutions, where programs from all of their four-year institutions are available in several cities through a university center concept. This process is also used in North Carolina and some other states. Such university centers can either be on a campus or at a location where there is no current NDUS presence.

The consultants are honored to have had the opportunity to work with the NDUS and its institutions in this project. North Dakota is being well served by the higher education available at the individual campus sites and through distance and online learning.

DEMOGRAPHIC ANALYSIS

The consultant analyzed North Dakota data with regard to:

- Changing population and demographics in the state and its various regions.
- College attendance patterns of students – both recent high school graduates and young adults – from each of the counties in the state.
- Workforce supply and demand for each of the regions of the state.

This section includes the analysis and synthesis of the findings with the intent of providing information that informs facilities planning decisions, especially as they reflect the need for additional institutional and/or programmatic capacity.

Population Projections

There are no widely accepted population projections available for the state. Two sources were found that take into account recent changes from oil-impacted counties.

The first set of population projections were published in September 2012 as part of the *North Dakota Statewide Housing Needs Assessment* study, prepared by the Center for Social Research at North Dakota State University (NDSU). These projections were based on a combination of methods that included using employment projections of permanent workers in oil-impacted counties. These projections were translated into households. The number of households was then translated into estimates of residential population based on trends in persons-per-household, using Census data.

Population projections were developed in five year increments through 2025, by county and Planning Region. The projections are further delineated by broad age categories.

The second set of population projections were developed by NDSU Agribusiness and Applied Economics in a report entitled *Williston Basin 2012: Projections of Employment and Population North Dakota Summary*. The document is available at <http://www.nd.gov/ndic/>.

Using a similar methodology, projected employment growth in the Williston Basin was used to estimate future housing demand. Persons-per-household occupancy rates were then used with estimates of future housing demand to estimate population potential.

As the scope of future oil field development in the Williston Basin is unknown, three scenarios were developed to address uncertainty. These include:

- Low = Economic climate or conditions are worse than current conditions
- Consensus = Economic conditions remain relatively similar to those in early 2012
- High = An improved economic climate relative to early 2012.

Appendix B of the *Williston Basin 2012: Projections of Employment and Population North Dakota Summary* notes population estimates from 2010 to 2036 for each of the three scenarios for State Planning Regions 1, 2 and 8. This

encompasses only 18 of the 53 North Dakota counties.

As with all projections, the ability to project population is often tenuous at best as unforeseen changes in any socio-economic or demographic shifts are unpredictable. Population data from these two studies will be used in this report.

Statewide Population

Figure 1 notes a 60 year review of statewide Census population with a 15 year projection in five-year intervals. Between 1960 and 2010, the statewide resident population increased by 6.3%. Between 2010 and 2025, the resident statewide population is expected to increase by 25% or three times the 60 year rate due to the impact of energy related employment. It is important to note that U.S. Census counts permanent residents. If temporary workers who claim residency in other states are factored into the equation, the population projections would be higher.

Population by Planning Region

Population projections by ND Planning Regions are noted in Figure 2. As Williston Basin 2012 projections were used for Planning regions 1, 2 and 8, the 2025 statewide total is slightly different than noted in Figure 1. The following map delineates the eight regions in the state.

In reviewing population change by region between 2000 and 2013, Planning Region 1 had the greatest percent of population growth. Three regions (3, 4, and 6) showed declines in population during the same time period.

Population projections (2013-2025) indicated that the Regions 1, 2, and 8 will experience disproportionate shares of the population growth in the state. Population growth in these three Planning Regions is proportional to projections for oil field development in the petroleum industry and future employment in the Williston

Figure 1

North Dakota Population Projections

Year	State Population	Yearly Change %
2025 projection	841,820	
2020 projection	806,541	4.4%
2015 Projection	750,023	7.5%
2010 Census	672,591	11.5%
2000 Census	642,200	4.7%
1990 Census	638,800	0.5%
1980 Census	652,717	-2.1%
1970 Census	617,761	5.7%
1960 Census	632,446	-2.3%

Source: U.S. Census and the Center for Social Research at NDSU.

Eight North Dakota Regions

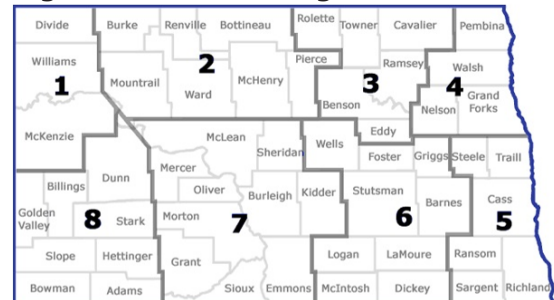


Figure 2

North Dakota Population by Planning Region

Planning Region	Census 2000	Census 2010	Estimate 2013	% Change 2000-2013	Projection 2025	% Change 2013-2025
Planning Region 1, ND	27,781	30,829	41,223	48.4%	83,874	103.5%
Planning Region 2, ND	88,089	89,967	99,389	12.8%	125,002	25.8%
Planning Region 3, ND	43,168	40,672	41,630	-3.6%	43,016	3.3%
Planning Region 4, ND	90,798	88,519	90,559	-0.3%	95,125	5.0%
Planning Region 5, ND	162,127	185,481	198,779	22.6%	218,799	10.1%
Planning Region 6, ND	61,454	56,363	56,292	-8.4%	58,222	3.4%
Planning Region 7, ND	130,418	141,864	151,455	16.1%	169,993	12.2%
Planning Region 8, ND	38,365	38,896	44,066	14.9%	57,405	30.3%
Total	642,200	672,591	723,393		851,436	

Source: 2000, 2010, and 2013 population data from the U.S. Census Bureau

Planning Regions 1, 2 and 8 population data from NDSU Agribusiness and Applied Economics

Planning Regions 3 - 7 population data from the U.S. Census and the Center for Social Research at NDSU.

Basin.

Population growth in Planning Regions 5 and 7 show moderate growth as these areas contain two of the larger cities in North Dakota. Planning Regions 3, 4, and 6 indicate minimal growth over the next twelve years. In summary, the major population changes have occurred in the western part of the state. The balance of the state is projected to have modest growth at best.

Planning Region Population by Age Category

Figures 3A through 3C note Planning Region by age category. In Figure 3A, the 0-24 age group most closely represents the age category of the traditional high school student. The 15 year population projections indicate a statewide growth rate of 17.9% with the greatest increases in Planning Regions 1, 2, 7, and 8.

In the 25-44 age category (Figure 3B), Planning Region 1 is projected to have the greatest growth. This level of growth in this region is indicative of the age of workers being employed in energy related industries. Growth is also evident in Planning Regions 2 and 8.

With the exception of Planning Regions 1, 2, and 8, The age 45-64 age category (Figure 3C) is stagnant or declining in the state. Again, the 155% growth in this age category in Planning Region 1 is due to the influx of a more experienced workforce in energy related industries.

Figure 3A**Planning Region Population by Age Category
Ages 0 to 24**

Planning Region	Census 2010	Projection 2025	% Change 2010-2025
Planning Region 1, ND	9,819	15,811	61.0%
Planning Region 2, ND	31,237	39,071	25.1%
Planning Region 3, ND	14,529	15,561	7.1%
Planning Region 4, ND	33,807	35,541	5.1%
Planning Region 5, ND	68,438	77,939	13.9%
Planning Region 6, ND	16,117	16,646	3.3%
Planning Region 7, ND	44,867	54,047	20.5%
Planning Region 8, ND	12,077	17,670	46.3%
Total	230,891	272,286	17.9%

Figure 3B**Ages 25-44**

Planning Region	Census 2010	Projection 2025	% Change 2010-2025
Planning Region 1, ND	7,357	24,065	227.1%
Planning Region 2, ND	22,376	36,415	62.7%
Planning Region 3, ND	8,555	9,860	15.3%
Planning Region 4, ND	20,996	27,118	29.2%
Planning Region 5, ND	51,328	59,249	15.4%
Planning Region 6, ND	11,503	14,020	21.9%
Planning Region 7, ND	35,015	46,430	32.6%
Planning Region 8, ND	8,617	17,869	107.4%
Total	165,747	235,026	41.8%

Figure 3C**Ages 45-64**

Planning Region	Census 2010	Projection 2025	% Change 2010-2025
Planning Region 1, ND	8,872	22,637	155.2%
Planning Region 2, ND	22,835	27,232	19.3%
Planning Region 3, ND	11,105	9,249	-16.7%
Planning Region 4, ND	22,229	15,202	-31.6%
Planning Region 5, ND	44,968	45,522	1.2%
Planning Region 6, ND	16,636	13,300	-20.1%
Planning Region 7, ND	40,662	37,211	-8.5%
Planning Region 8, ND	11,169	16,095	44.1%
Total	178,476	186,448	4.5%

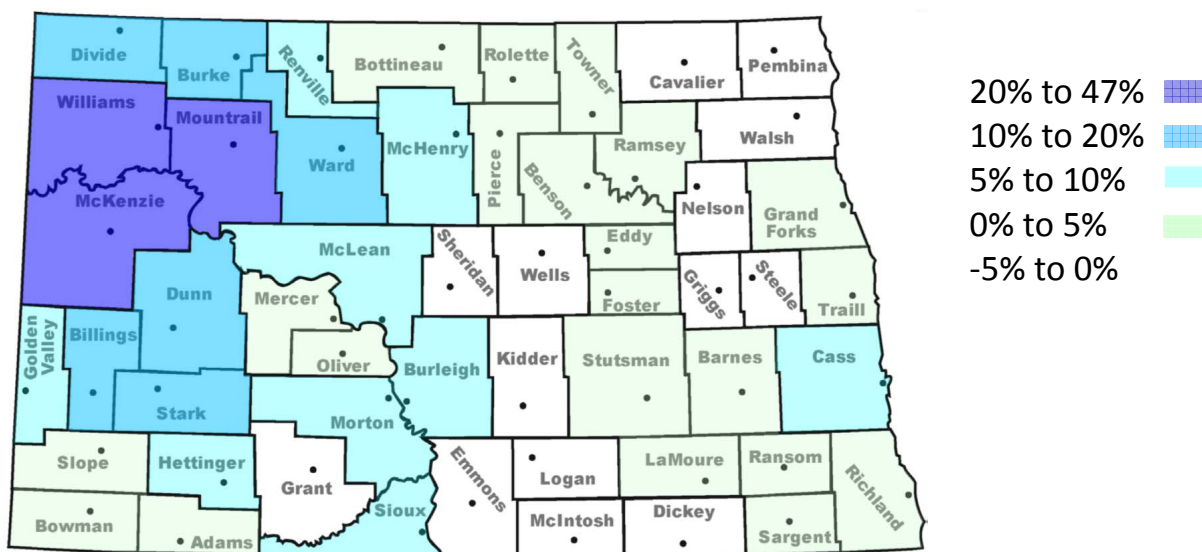
Source: 2010 from the U.S. Census Bureau

Planning Regions 1 -8 population data from the U.S. Census and the Center for Social Research at NDSU.

Three Year County and Region Population Change

As noted in Figure 4, population change from 2010-2013 is highlighted by county. The darker the blue color, the greater percent change in population. Upon inspection, the darker blue colors with population growth rates of 20% to 47% are restricted to three counties (Mountrail, McKenzie, and Williams) in the northwest portion of the state. With the exception of Cass County, the population growth from 2010 to 2013 has been greatest in the western half of the state.

Figure 4
Percent Population Change by County: 2010-2013



Population change between 2010 and 2013 was also categorized by region, as illustrated in Figure 5. Similar to the county level analysis, the greatest change in population was in the Bakken region. The city centers of Bismarck and Fargo showed the greatest growth outside the Bakken region.

Figure 5
Population Changes by Region, 2010-2013

	April 2010	July 2013	Number Change	Percent Change
Bakken	74,546	91,951	17,405	23.35
Bismarck	108,779	117,447	8,668	7.97
Fargo	149,778	162,829	13,051	8.71
Grand Forks	66,861	69,179	2,318	3.47
Other	272,627	281,987	9,360	3.43

Participation Rates

Participation rates were calculated at a statewide level from 2003 to 2013. For greater accuracy, actual 2010 Census population data was used while population estimates were obtained from 2011 to 2013. It must be stressed that 2015 to 2025 population projections are estimates derived from the *2012 North Dakota Statewide Housing Needs Assessment Forecast*.

The graph notes historical population, as secured from the U.S. Census, since 1900. After a spike in the 1930's, the population has remained relatively stable through 2008. As a result of expanded energy production in the Bakken region, the population has been steadily increasing.

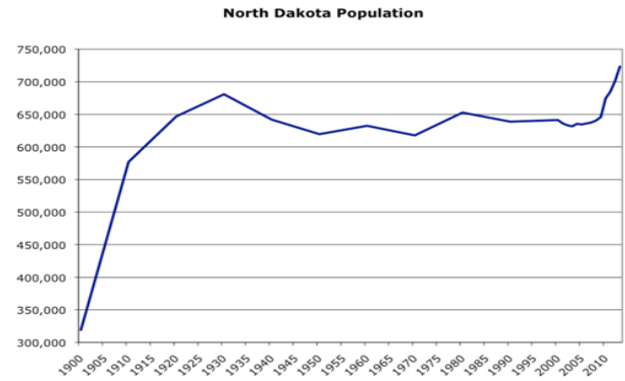


Figure 6A provides a 10 year overview of participation rates by institution type. From 2003-2013, community college headcount increased by 22.2%, followed by research universities at 20.7%. Regional university enrollments reached a high in 2010, but have declined steadily over the last three years, thus generating an 8.5% decrease over the ten-year period.

Figure 6A
North Dakota Higher Education Participation by Institution Type: 2003-2013

Institution Type	2003	2004	2005	2006	2007	2008	2009	2010 Census	2011	2012	2013	% Change 2003-2013	10 Year Average
Research Universities Headcount	24,657	24,810	25,053	25,092	25,086	25,977	27,361	28,601	29,096	29,693	29,772	20.7%	
Research Universities Participation Rate	3.9%	3.9%	3.9%	3.9%	3.9%	4.1%	4.2%	4.3%	4.2%	4.2%	4.1%		4.1%
Regional Universities Headcount	8,101	8,260	8,261	8,153	7,845	7,970	8,386	8,618	8,357	7,779	7,413	-8.5%	
Regional Universities Participation Rate	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	1.0%		1.2%
Two-Year Community Colleges Headcount	8,862	9,433	8,768	8,992	8,896	9,495	10,070	10,718	11,380	10,731	10,830	22.2%	
Two-Year Community Colleges Participation Rate	1.4%	1.5%	1.4%	1.4%	1.4%	1.5%	1.6%	1.6%	1.7%	1.5%	1.5%		1.5%
Total Headcount	41,620	42,503	42,082	42,237	41,827	43,442	45,817	47,937	48,833	48,203	48,015	15.4%	
State Population	631,225	635,480	634,528	636,019	637,534	640,525	645,903	672,591	684,867	701,345	723,393	14.6%	
Statewide Participation Rate	6.6%	6.7%	6.6%	6.6%	6.6%	6.8%	7.1%	7.1%	7.1%	6.9%	6.6%		6.8%

Sources: U.S. Census Bureau and NDSU Enrollment Reports from 2012 and 2013.

Participation rates were calculated for each institution type and total NDUS headcount. Participation rate can be defined as the percent of the total population that are enrolled or “participating” in higher education in a given area or state. In this case, participation is enrollment in courses and programs related to NDUS institutions in the state of North Dakota. The analysis also includes students enrolled in distance education classes. The participation rate is usually expressed as a percentage as noted in the formula:

$$\text{Participation Rates} = \frac{(\text{Headcount})}{(\text{Population})} \times 100$$

It should be noted further that only credit headcount enrollment was used in the analysis.

In general, participation rates for the research universities have increased from 3.9% to 4.1% over the ten year period. Community colleges have also increased participation rates, but at a slower rate of 1.4% in 2003 to a high of 1.7% in 2011. In 2012 and 2013 the rate has remained steady at 1.5%. The regional universities participation rate has remained relatively flat. At a statewide level, the average NDUS participation rate is 6.8%. The 6.6% rate is identical for 2003 and 2013, but spiked between 2009 and 2011. For comparison, the statewide participation rate in Minnesota using Minnesota State Colleges and University (MnSCU) system enrollments and state population data from 2012 was 8.0%.

Participation rates are often used to develop high level enrollment projections at the policy level. Figure 6B calculates potential NDUS statewide headcount enrollments using established statewide population projections. Statewide participation rates from 2015 to 2025 were established based on national increases in the higher education attendance over the last decade and the production of high school graduates in the state based on The Western Interstate Commission for Higher Education (WICHE) projections.

By 2025 it is estimated that NDUS institutions could enroll more than 60,000 students, an increase of approximately 26%. While 60,000 could be enrolled, the number of graduates will be considerably less. For example, in the 2011-2012 academic year, NDUS institutions granted 8,856 certificates and degrees with a total headcount enrollment of 48,203 students in 2012.

Production of High School Graduates

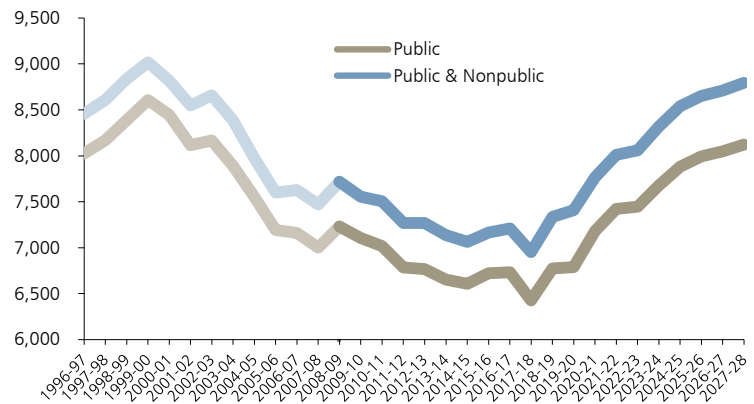


Figure 6B

North Dakota Higher Education Enrollment Projection 2015-2025

	2010	2011	2012	2013	2015	2020	2025
	Census	Estimate	Estimate	Estimate	Projection	Projection	Projection
State Population	672,591	684,867	701,345	723,393	750,023	806,541	841,820
Total NDUS Headcount	47,937	48,883	48,203	48,015	50,252	54,845	60,611
<i>Statewide Participation Rate</i>	7.1%	7.1%	6.9%	6.6%	6.7%	6.8%	7.2%

Sources: U.S. Census Bureau, Center for Social Research at NDSU, and NDSU Enrollment Reports from 2012 and 2013.

The next section of this report reviews workforce demand and program alignment. At a high level, the ND Labor Market Information Center projects a need for more than 78,000 new jobs between 2010 and 2020. Given NDUS enrollment projections for 2020 and the current level of degree production, NDUS higher educational institutions may not be able to supply enough graduates to meet employment demand. This topic will be explored in more detail in the Workforce/Program Alignment chapter.

Higher Education Attendance by Region

The consultant obtained student unit record data in March 2014 to analyze students' county of origin (resident address before relocation to campus) by various demographic variables. For ease of understanding, county level data were aggregated into five regions. Counties in each region included:

- Bakken – Billings, Bowman, Burke, Divide, Dunn, Golden Valley, McKenzie, Mountrail, Slope, Stark, and Williams counties;
- Bismarck – Burleigh and Morton counties;
- Fargo – Cass County;
- Grand Forks – Grand Forks County;
- Other – Remaining 38 counties.

Higher education attendance by region was calculated for three different variables:

- Students directly out of high school
- Part-time students
- Students 25 years of age or older

Each one of these variables will be reviewed in this section. First, outcomes will be reviewed of first-time students by institutional mission (2-year community college, 4-year regional, and Research University) and then all students by individual institution.

Region of Origin of First Time Students

Figure 7 summarizes region of origin data by first time students directly out of high school. Students from the Bakken and Bismarck regions are more inclined to start their higher education experience at a 2-year college while students from Fargo and Grand Forks are more likely to attend one of the research universities.

Figure 7
Higher Education Attendance
Region of Origin of First-Time Students-Directly Out of High School
Academic Years 2011-2013

Region	2-year	4-year	Research	Total	% of Total
Bakken	465	342	289	1,096	11%
Bismarck	1,091	47	483	1,621	17%
Fargo	256	86	1,193	1,535	16%
Grand Forks	69	35	694	798	8%
Other	1,854	1,136	1,588	4,578	48%
Total	3,735	1,646	4,247	9,628	100%

Source: NDUS Student Unit Data

In reviewing higher education attendance of part-time students (see Figure 8), the results are similar to those of first-time students. Part-time students from the Bakken and Bismarck regions are more likely to attend a community college. For the Fargo region, part-time students attend 2-year and research institutions almost equally. In the Grand Forks region, more part-time students are attending the research university. For all other counties, part-time student tend to favor the 2-year colleges.

Figure 8
Higher Education Attendance
Region of Origin of First-Time Students - Part Time
Academic Years 2011-2013

Region	2-year	4-year	Research	Total	% of Total
Bakken	92	68	22	182	12%
Bismarck	314	30	17	361	23%
Fargo	132	12	138	282	18%
Grand Forks	63	4	112	179	11%
Other	351	117	107	575	36%
Total	952	231	396	1,579	100%

Source: NDUS Student Unit Data

Finally, region of origin of first-time students who attend college at age 25 and older (Figure 9) were more likely to be enrolled in a community college in Bismarck and the Other regions. Surprisingly, the split between 2-year and 4-year in the Bakken region is almost identical. In the Grand Forks region, students 25 and older are more likely to attend a research university.

Figure 9
Higher Education Attendance
Region of Origin of First-Time Students Who Start at age 25 and Older
Academic Years 2011-2013

Region	2-year	4-year	Research	Total	% of Total
Bakken	67	63	8	138	10%
Bismarck	220	44	18	282	20%
Fargo	116	19	134	269	19%
Grand Forks	57	8	103	168	12%
Other	309	145	79	533	38%
Total	769	279	342	1,390	100%

Source: NDUS Student Unit Data

Region of Origin by Institution

A similar type of region of origin analysis was completed for the three variables by institution. Figure 10 notes attendance by students directly out of high school. In interpreting the table, 1,025 students attending Bismarck State College reside in the Bismarck region. This represents 63% of the students attending from the Bismarck region. In general, college attendance patterns are determined largely by the nature of the institution(s) located within the region.

Figure 10
Higher Education Attendance by Region - Directly Out of High School

Region	Bismarck State College	Dakota College at Bottineau	Dickinson State University	Lake Region State University	Mayville State University	Minot State University	North Dakota College of Science	North Dakota State University	University of North Dakota	Valley City State University	Williston State College
Bakken	182 16.6%	10 0.9%	254 23.2%	2 0.2%	8 0.7%	68 6.2%	59 5.4%	156 14.2%	133 12.1%	12 1.1%	212 19.3%
Bismarck	1025 63.2%	5 0.3%	18 1.1%	7 0.4%	2 0.1%	19 1.2%	51 3.1%	298 18.4%	185 11.4%	8 0.5%	3 0.2%
Fargo	19 2.4%	5 0.6%	3 0.4%	6 0.8%	21 2.6%	4 0.5%	223 27.9%	915 114.7%	278 34.8%	58 7.3%	3 0.4%
Grand Forks	5 0.6%	2 0.3%	1 0.1%	38 4.8%	27 3.4%	4 0.5%	24 3.0%	90 11.3%	604 75.7%	3 0.4%	0 0.0%
Other	673 14.7%	183 4.0%	48 1.0%	324 7.1%	155 3.4%	678 14.8%	659 14.4%	877 19.2%	711 15.5%	255 5.6%	15 0.3%

Source: NDUS Student Unit Data

Figure 11 reviews higher education attendance by region for part-time students. As part-time students are more likely to be commuter students, attendance patterns are mostly dictated by proximity of institution to their residence. Again using the Bismarck region as an example, 297 students or 81.8% of students residing in the Bismarck region were attending Bismarck State College.

Figure 11
Higher Education Attendance by Region - Part Time Students

Region	Bismarck State College	Dakota College at Bottineau	Dickinson State University	Lake Region State University	Mayville State University	Minot State University	North Dakota College of Science	North Dakota State University	University of North Dakota	Valley City State University	Williston State College
Bakken	30 16.2%	3 1.6%	57 30.8%	1 0.5%	2 1.1%	7 3.8%	8 4.3%	11 5.9%	11 5.9%	2 1.1%	53 28.6%
Bismarck	297 81.8%	2 0.6%	23 6.3%	5 1.4%	0 0.0%	4 1.1%	12 3.3%	11 3.0%	6 1.7%	3 0.8%	0 0.0%
Fargo	9 3.2%	1 0.4%	2 0.7%	10 3.5%	3 1.1%	3 1.1%	109 38.5%	122 43.1%	16 5.7%	4 1.4%	4 1.4%
Grand Forks	5 2.8%	2 1.1%	0 0.0%	52 28.7%	2 1.1%	0 0.0%	5 2.8%	11 6.1%	101 55.8%	2 1.1%	1 0.6%
Other	122 19.6%	49 7.9%	12 1.9%	100 16.0%	19 3.0%	65 10.4%	115 18.4%	49 7.9%	58 9.3%	21 3.4%	14 2.2%

Source: NDUS Student Unit Data

Finally, Figure 12 delineates higher education attendance by region for students 25 years of age and older. Results are similar and in some cases more pronounced than those in figures 10 and 11.

Figure 12
Higher Education Attendance by Region - 25 years of age and older

Region	Bismarck State College	Dakota College at Bottineau	Dickinson State University	Lake Region State University	Mayville State University	Minot State University	North Dakota College of Science	North Dakota State University	University of North Dakota	Valley City State University	Williston State College
Bakken	27 19.3%	3 2.1%	46 32.9%	5 3.6%	1 0.7%	13 9.3%	6 4.3%	4 2.9%	4 2.9%	4 2.9%	27 19.3%
Bismarck	200 70.9%	3 1.1%	26 9.2%	6 2.1%	0 0.0%	13 4.6%	10 3.5%	11 3.9%	7 2.5%	5 1.8%	1 0.4%
Fargo	16 5.9%	1 0.4%	3 1.1%	6 2.2%	6 2.2%	5 1.9%	91 33.8%	118 43.9%	16 5.9%	5 1.9%	2 0.7%
Grand Forks	7 4.2%	2 1.19	0 0.00	42 25.00	4 2.38	2 1.19	6 3.57	12 7.14	91 54.17	2 1.19	0 0%
Other	88 16.5%	42 7.9%	12 2.3%	71 13.3%	25 4.7%	76 14.3%	93 17.4%	29 5.4%	50 9.4%	32 6.0%	15 2.8%

Source: NDUS Student Unit Data

In summarizing patterns of college attendance, for most of the regions in the state, college attendance patterns are determined largely by the nature of the institution(s) located within the region. This pattern is true for recent high school graduates and is even more pronounced for part-time and adult students. For example:

- The majority of students from the Bismarck region attend BSC. This is even more true for part-time and adult students. If not BSC, students from this region attend the research universities.
- Students from Fargo attend NDSU; the other (much less popular) option is NDSCS.
- Residents of the Grand Forks region attend UND to the exclusion of most other institutions. Notable in this region is the very low proportion of recent high school graduates who attend two-year institutions. This is less true of adult and part-time students, but even among these groups more than 60% attend research universities.

- Bakken area residents are most likely to attend DSC, WSC, or BSC although, among recent high school graduates, significant numbers attend NDSU. This is not true for part-time or older students.

Given the combination of growth and attendance patterns, we conclude that the capacity issues are greatest at the two-year level, particularly in the Bakken and Grand Forks regions.

The focus on the community college sector is reinforced by investigation of strategies for reaching attainment goals suggested through use of a student flow model. Regardless of whether the attainment target is 60% (that target being the one adopted by most states) or 70% as is suggested by the workforce demand projections provided by the Georgetown Center for Education and the Workforce, achieving these goals will require educating many more adults; the pool of recent high school graduates is not large enough to yield the required number of graduates even if the retention and graduation rates are increased to best-in-nation levels.

Evidence from other studies indicates that adults seek short-term programs that yield economic benefits, the kinds of certificate and workforce oriented degree programs offered by community colleges.

If capacity is to be expanded, it should be with the two-year colleges, especially in the northwest and the northeast parts of the state. The other access issue is that of access to four-year programs in the Bismarck area. This need has been met by four-year institutions from other parts of the state offering programs on the BSC campus. This approach is admirable. From the facilities perspective, the question is whether or not there are sufficient technology-intensive classrooms on the BSC campus to serve these needs into the future.

WORKFORCE/PROGRAM ALIGNMENT

A tremendous amount of information has been published concerning labor market and economic conditions in the State of North Dakota and its eight planning regions. Workforce and technical program training is a crucial component of the higher education mission in the state, especially at the five two-year community colleges.

Unlike population projections which are usually forecast through the year 2030, occupational projections are usually shorter-term, with most predictions extending through 2020. A variety of circumstances, including national and state policies, state and local economic development initiatives, and international economic factors make these predictions less reliable over time.

The purpose of this section is to review current and projected occupational data in an effort to determine the gaps in supply and demand of skilled workers in a wide range of occupational clusters or career fields. Gaps were studied between occupational demand and the number of higher education graduates produced using data compiled by a company called Burning Glass and the National Center for Higher Education Management Systems (NCHEMS). A second goal was to disaggregate workforce alignments by educational attainment and geographic region.

The consultant analyzed workforce demand from three different perspectives.

- Review of data and workforce projections produced by the North Dakota Labor Market Information Center
- Analysis of Burning Glass data
- The 2020 Workforce projections developed by the Georgetown Center for Education and the Workforce

Overall, these data generally point in the same direction but differences in data collection processes and projection methodologies produced some discrepancies. The goal will be to understand these discrepancies and highlight significant trends over the next eight years.

Long-term Statewide Employment Projections

Labor Market Information Center

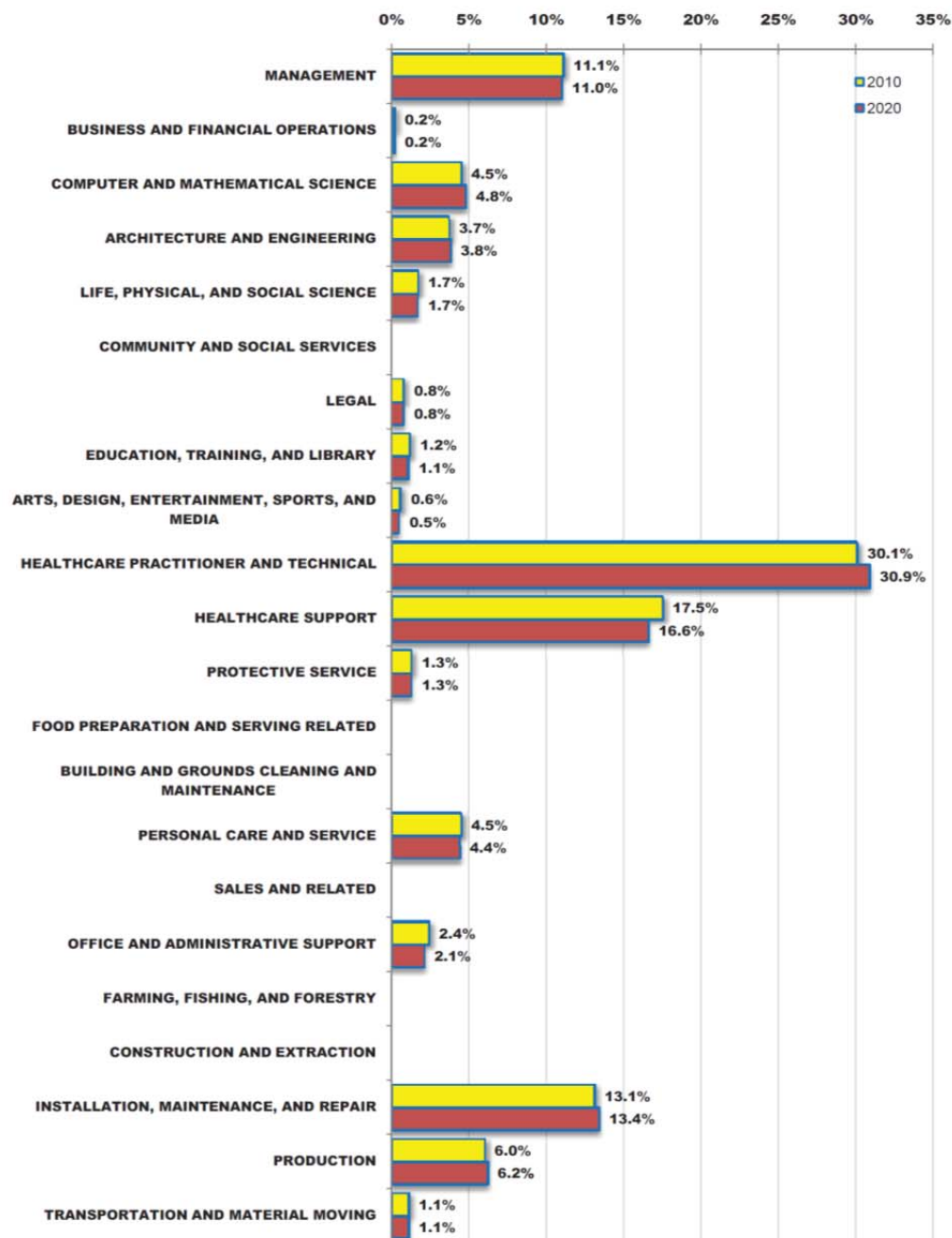
The Labor Market Information Center, Job Service of North Dakota publishes long-term employment projections from 2010 to 2020. The goal is to identify occupations in which job openings are expected to occur and provide insight into the state's rapidly-growing, stable, or declining occupations. The occupational projections are arranged into 22 Standard Occupational Classification (SOC) groupings. Within each group, typical education and training requirements are noted. For this section, occupational projections will be reviewed by typical entry level educational requirements.

Postsecondary Non-Degree or Associate's Degree

Employment distribution for this category is noted below. Each major occupational classification notes the percentage distribution of jobs for 2010 (yellow bar) and 2020 (red bar). The greatest number of jobs, current and projected, for the postsecondary non-degree award or associate's degree level is in Healthcare Practitioner and Technical, Healthcare Support, and Installation, Maintenance & Repair categories. There is a slight decline in job demand in the Healthcare Support category by 2020.

EMPLOYMENT DISTRIBUTION BY TYPICAL ENTRY-LEVEL EDUCATION

POSTSECONDARY NON-DEGREE AWARD OR ASSOCIATE'S DEGREE



Tables 1 and 2 list high growth occupations requiring a postsecondary non-degree award (certificate) or associate's degree. Growth openings are the number of anticipated openings due to new job growth while replacement openings are the number of anticipated openings due to workers who permanently leave an occupation (e.g. promotion, retirement, death, etc.). Replacements are openings for existing jobs; no new jobs are created. Total openings are the summation of both growth and replacement openings for the ten year period. In table 1, the largest number of total openings is for welders, cutters, solderers, and brazers.

Table 1

North Dakota: Statewide**Long-term Employment Projections:2010-2020****Postsecondary Non-Degree Award: High Growth**

SOC Code	Occupational Title	Employment Estimate	Employment Projection	Growth Openings	Replacement Openings	Total Openings	2011 Wages
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	1,329	1,846	517	288	805	\$ 42,770
29-2041	Emergency Medical Technicians and Paramedics	634	789	155	127	282	\$ 28,190
49-3011	Aircraft Mechanics and Service Technicians	261	341	80	79	159	\$ 48,720
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	491	631	140	87	227	\$ 42,850
51-4121	Welders, Cutters, Solderers, and Brazers	2,123	2,682	559	567	1,126	\$ 42,160

Source: Labor Market Information Center - Job Service of North Dakota

The majority of high growth occupations requiring an associate's degree are in allied health related areas. The greatest demand is for computer support specialists, with 1,089 total openings over the ten year period.

Table 2

North Dakota: Statewide**Long-term Employment Projections:2010-2020****Associate's Degree:High Growth**

SOC Code	Occupational Title	Employment Estimate	Employment Projection	Growth Openings	Replacement Openings	Total Openings	2011 Wages
29-2056	Veterinary Technologists and Technicians	190	280	90	33	123	\$ 29,660
15-1150	Computer Support Specialists	2,182	2,698	516	573	1,089	\$ 43,280
17-3013	Mechanical Drafters	150	195	45	29	74	\$ 38,180
17-3022	Civil Engineering Technicians	449	559	110	86	196	\$ 42,110
17-3025	Environmental Engineering Technicians	57	71	14	11	25	\$ 50,670
17-3026	Industrial Engineering Technicians	140	178	38	27	65	\$ 42,150
17-3027	Mechanical Engineering Technicians	95	117	22	18	40	\$ 46,190
19-4091	Environmental Science and Protection Technicians, Including Health	37	50	13	16	29	\$ 38,780
29-1126	Respiratory Therapists	211	279	68	40	108	\$ 47,060
29-2031	Cardiovascular Technologists and Technicians	69	88	19	11	30	\$ 49,660
29-2037	Radiologic Technologists and Technicians	598	749	151	93	244	\$ 46,270
31-2011	Occupational Therapy Assistants	90	115	25	14	39	\$ 42,180
31-2021	Physical Therapist Assistants	101	125	24	16	40	\$ 40,590

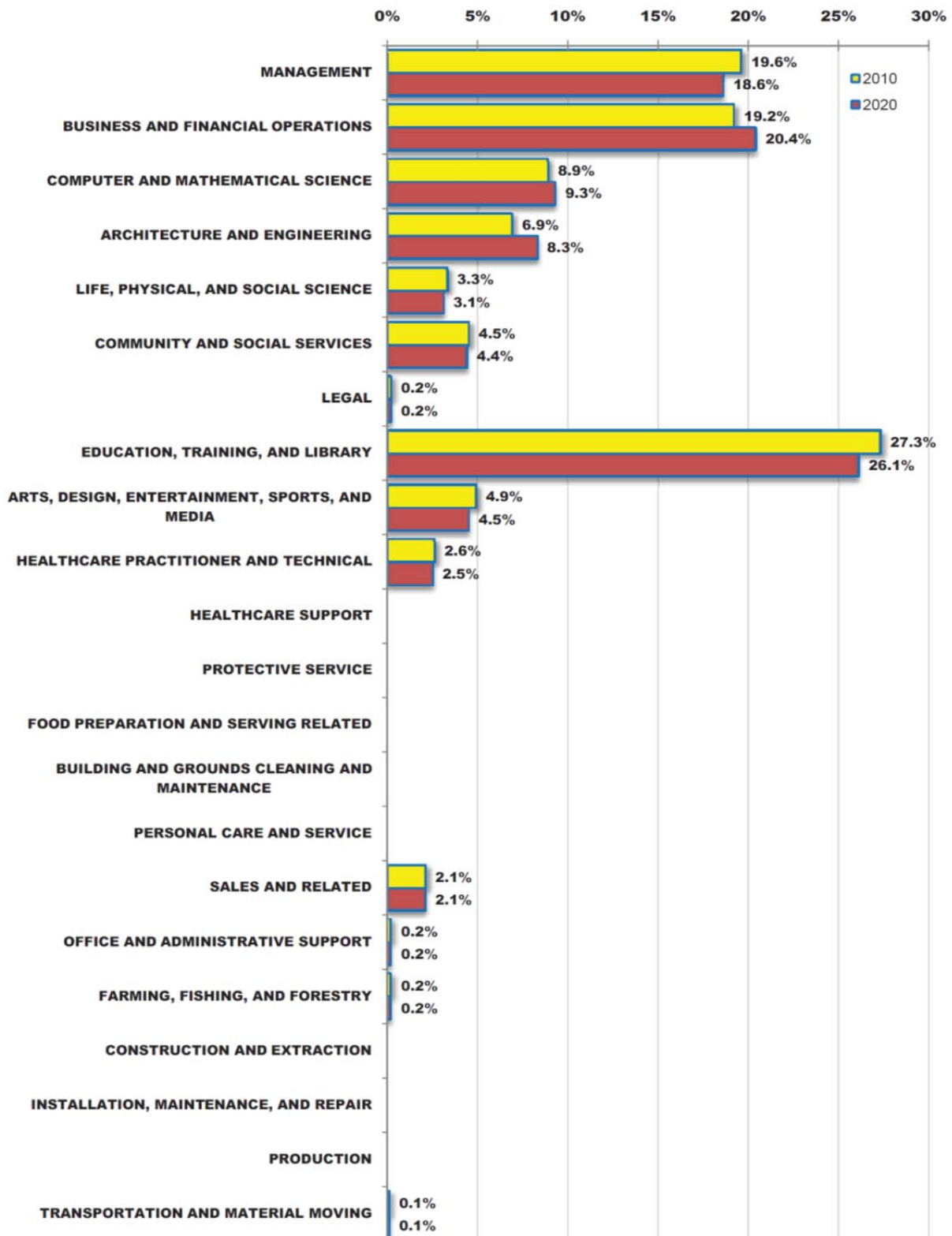
Source: Labor Market Information Center - Job Service of North Dakota

Bachelor's Degree

The graphic on the next page illustrates employment distribution by typical entry level education. The Education, Training and Library occupational classification is the largest percentage of jobs at this education level. Management and Business and Financial Operations categories are also strong. Many occupational categories are expected to decrease between 2010 and 2020.

EMPLOYMENT DISTRIBUTION BY TYPICAL ENTRY-LEVEL EDUCATION

BACHELOR'S DEGREE



Bachelor's degree high growth long-term employment projections are noted in Table 3. The types of positions vary greatly but tend to focus in business and engineering professions. The table is ranked by total openings, with the largest demand for loan officers and civil engineers.

Table 3

**North Dakota: Statewide
Long-term Employment Projections:2010-2020
Bachelor's Degree:High Growth**

SOC		Employment	Employment	Growth	Replacement	Total	2011
Code	Occupational Title (long)	Estimate	Projection	Openings	Openings	Openings	Wages
13-2072	Loan Officers	1,179	1,468	289	302	591	\$ 58,480
17-2051	Civil Engineers	900	1,185	285	183	468	\$ 69,190
13-1161	Market Research Analysts and Marketing Specialists	467	685	218	124	342	\$ 49,970
13-1051	Cost Estimators	548	768	220	105	325	\$ 51,770
15-1132	Software Developers, Applications	771	949	178	80	258	\$ 64,000
17-2112	Industrial Engineers	506	649	143	110	253	\$ 72,160
15-1142	Network and Computer Systems Administrators	563	714	151	95	246	\$ 59,090
17-2141	Mechanical Engineers	365	457	92	117	209	\$ 71,280
13-2052	Personal Financial Advisors	442	599	157	51	208	\$ 57,090
13-1151	Training and Development Specialists	439	562	123	74	197	\$ 48,590
17-1022	Surveyors	274	381	107	60	167	\$ 48,980
13-2051	Financial Analysts	249	328	79	53	132	\$ 70,050
11-3051	Industrial Production Managers	248	313	65	58	123	\$ 73,650
15-1141	Database Administrators	157	212	55	27	82	\$ 63,520
19-1013	Soil and Plant Scientists	117	150	33	48	81	\$ 56,360
21-1091	Health Educators	171	215	44	37	81	\$ 44,820
17-1011	Architects, Except Landscape and Naval	155	202	47	31	78	\$ 61,030
13-1121	Meeting, Convention, and Event Planners	98	135	37	19	56	\$ 35,420
13-2041	Credit Analysts	109	142	33	23	56	\$ 60,290
27-3091	Interpreters and Translators	49	69	20	13	33	\$ 34,540
29-9091	Athletic Trainers	57	70	13	20	33	\$ 29,500
27-3042	Technical Writers	50	64	14	10	24	\$ 42,740
17-2131	Materials Engineers	22	32	10	6	16	N/A
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	31	40	9	7	16	\$ 71,360

Source: Labor Market Information Center - Job Service of North Dakota

Master's Doctoral and Professional Degrees

Occupations requiring a master's, doctoral or professional degree are confined to seven occupational categories, as noted in the graphic on the next page. The greatest percentage of positions is in Healthcare Practitioner and Technical, and Educational, Training and Library categories. With the exception of healthcare, employment growth is limited through 2020.

EMPLOYMENT DISTRIBUTION BY TYPICAL ENTRY-LEVEL EDUCATION

MASTER'S, DOCTORAL, OR PROFESSIONAL DEGREE

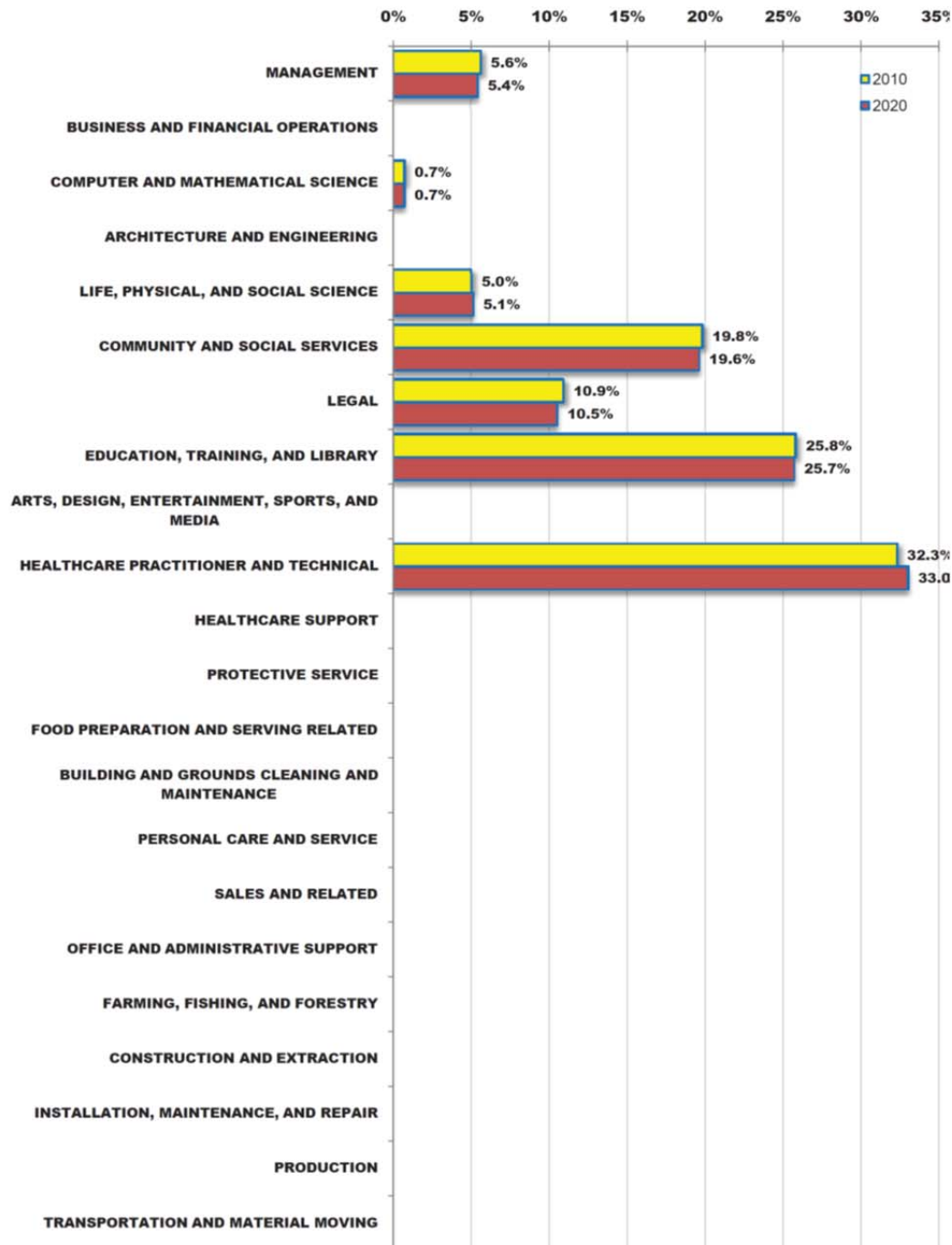


Table 4 lists high growth employment needs requiring master's and advanced degrees. The greatest need based on total openings is for veterinarians and therapists.

Table 4

**North Dakota: Statewide
Long-term Employment Projections:2010-2020
Master's, Doctorate and Professional Degree: High Growth**

SOC Code	Occupational Title	Employment Estimate	Employment Projection	Growth Openings	Replacement Openings	Total Openings	2011 Wages
29-1131	Veterinarians	130	169	39	26	65	\$ 67,950
21-1013	Marriage and Family Therapists	84	108	24	18	42	\$ 50,040
29-1128	Exercise Physiologists	23	30	7	5	12	\$ 43,360
25-4012	Curators	21	26	5	6	11	\$ 44,720
29-1181	Audiologists	29	36	7	2	9	\$ 72,150

Source: Labor Market Information Center - Job Service of North Dakota

Summary

Statewide long-term employment projections were aggregated by entry level education requirements. The results are divided into three categories: high school or less, sub-baccalaureate, and baccalaureate and above and are delineated in Table 5. An overwhelming number of jobs require a high school diploma or less. However, most of these jobs are entry-level, low-wage positions.

In reviewing the number of openings, the Labor Market Information Center data suggests that the demand for baccalaureate and above employment positions is greater than those at the sub-baccalaureate level (8,738 vs 6,680). As there are more replacement openings at the baccalaureate and above level, the number of total openings in this category is greater than the sub-baccalaureate level (21,012 vs 15,798).

Table 5

**North Dakota
Statewide Long-Term Employment Projections by Entry Level Education**

Education Level	2010 Employment Estimate	2020 Employment Projection	Growth Openings	Replacement Openings	Total Openings
	Estimate	Projection	Openings	Openings	Openings
Less than high school	108,508	125,678	17,361	33,131	50,492
High school diploma or equivalent	185,889	223,440	38,775	40,732	79,507
High School or Less Subtotal	316,425	375,199	60,235	78,170	138,405
Postsecondary non-degree award	24,112	27,683	3,613	4,904	8,517
Associate's degree	22,028	26,081	4,099	4,307	8,406
Sub-baccalaureate Subtotal	40,320	46,929	6,680	9,118	15,798
Bachelor's degree	40,320	46,929	6,680	9,118	15,798
Master's degree	5,900	6,675	776	1,224	2,000
Doctoral or professional degree	4,718	5,359	641	966	1,607
Baccalaureate and Above Subtotal	55,656	64,322	8,738	12,274	21,012

Source: Labor Market Information Center - Job Service of North Dakota

All projections have some inherent data limitations and should be viewed as an indicator of relative magnitude and probable direction rather than as an estimate of absolute demand. Many unknown factors can and will affect the economy and employment levels over the ten-year projections period. It is also impossible for projections to inventory potentially new occupations that will emerge during the next decade due to technological advances or the development of new types of industries. In some states, the number of emerging jobs is significant.

It is also important to note that these projections reflect the employer or demand side of the equation. The real question for state policy makers is whether or not higher education institutions are supplying an adequate number of graduates in the right career fields to satisfy growing job demand. The next section will attempt address this question.

Burning Glass Analysis

Burning Glass Overview

Burning Glass was founded in 1999 with the goal of developing the world's leading technologies for matching people with jobs. Their technologies deliver intuitive insight across a range of functions, including workforce and economic development and career exploration and counseling, as well as job matching. Their pioneering solutions leverage a deep understanding of people and their careers in order to deliver superior workforce and marketplace insight. A patented artificial intelligence engine learns from actual career patterns as observed in both structured and natural language contexts in order to deliver an intuitive, real-time awareness of how and when people move from job to job and of the kinds of skills and experiences that lead to successful placement.

Using this patented technology, Burning Glass aggregates, extracts, codes, and normalizes job data from more than 17,000 job boards, newspapers, employers, and other websites, supplying accurate and comprehensive data for job boards, job banks, job search applications, and research projects.

In addition to providing real-time job postings (demand) data, Burning Glass provides the occupation codes (SOC and O'Net), common and specialized skills, typical education requirement, certifications, and median annual salaries associated with each posting. Finally, Burning Glass also provides a crosswalk between the occupation codes and the national taxonomy of the Classification of Instructional Program (CIP) codes.

Using these data and information, the National Center for Higher Education Management Systems (NCHEMS) effectively linked postsecondary supply-side data from National Center for Education Statistics (NCES) Integrated Postsecondary Educational Data System (IPEDS) Completion survey. All combined, these analyses provide an accurate picture of real-time supply and demand for North Dakota and selected regions within the state. The outcomes include powerful visuals that enable analysts and policymakers to quickly identify occupations (and clusters of occupations) that are being over- and under-supplied, the real-time demand, and the median annual wages associated with them.

Burning Glass Analysis Matrix

Burning Glass analyses were completed at a statewide level and for each of the five regions. The regions included:

- Bakken
- Bismarck
- Fargo
- Grand Forks
- All other

The outcomes are divided between two levels of higher education:

- Baccalaureate and Above – This category includes employment positions requiring bachelor's, master's, doctorate, and professional degrees
- Sub Baccalaureate - This category includes employment positions requiring certificate or associate level degrees

Interpretation of Outcomes

Statewide and regional graphs can be interpreted in the same way.

Career areas are defined by different colored circles or bubbles. Each career area is represented by a different color, as noted in the chart. The real-time job demand is represented by the size of each bubble. The larger the bubble, the greater the job demand.



For each graph, the Y axis represents the ratio of demand to supply.

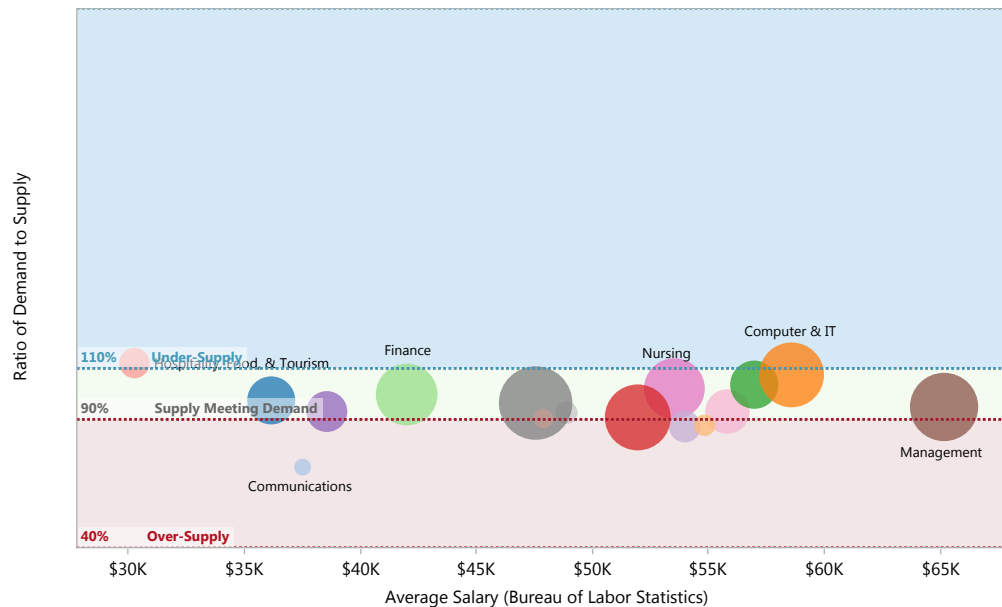
- If the number of graduates or completers is meeting employment demand in that career area, then "Supply is Meeting Demand", as noted in the graph.
- "Over-Supply" is defined as a greater number of graduates or completers than employment positions available. This over-supply area is noted in a lighter red color on the graph.
- "Under-Supply" can be defined as the number of job openings or positions is greater than the supply of graduates or completers. This area is noted in the lighter blue color on the graph.

The X-axis provides a continuum of the average employment salary, as developed by the Bureau of Labor Statistics.

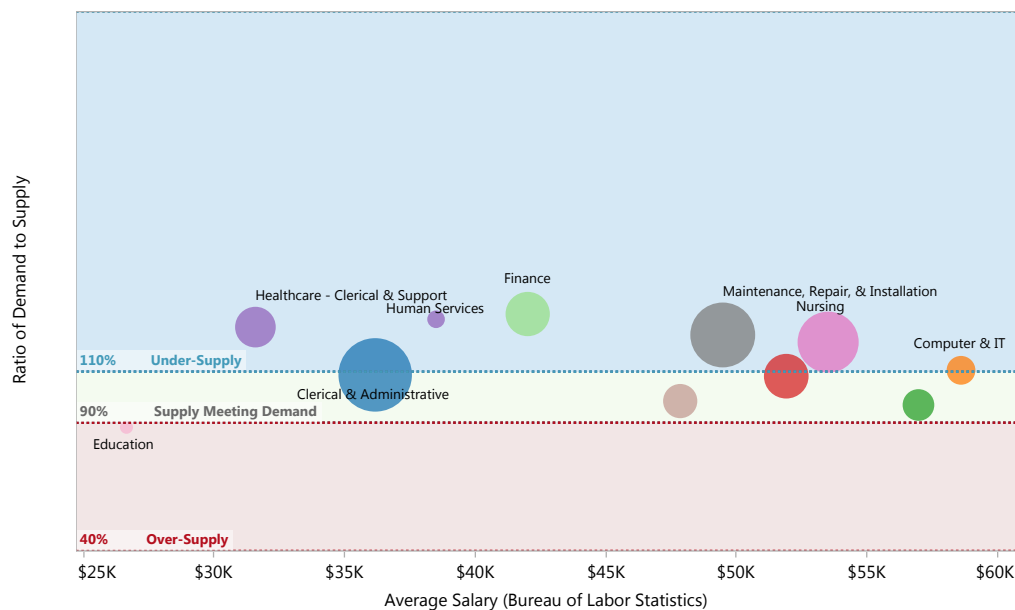
The location of each career bubble on the graph is dictated by the ratio of demand to supply and the average salary of employment positions for a given career area.

Statewide Burning Glass Outcomes

The Burning Glass statewide graphic displays make interpretation very clear. The graph indicates that supply and demand are in general equilibrium at the baccalaureate and above levels. If there is one area where there are potential shortages, it is in the area of Computer and IT Professionals, but there is no evidence of lack of capacity at the four-year institutions.



At the sub-baccalaureate level, the graphic tells a quite different story. The graph indicates a substantial unfilled demand for maintenance, repair & installation workers and for nursing occupations. There is also a smaller unfilled demand for lower-wage clerical and support workers in the healthcare industry.



Within the maintenance category the big demand is for automotive service technicians and mechanics, diesel mechanics, and electricians (see table below). This supply/demand mismatch is even more telling when viewed on a regional basis. The demand for auto and diesel mechanics as well as other skilled maintenance workers is heavily concentrated in the Bakken region, as will be highlighted in the next section.

Supply Status	Career Field	Occupation Title	Demand Size	Average Salary (Bureau of Labor Statistics)
N/A*	Maintenance, Repair, and Installation	Electrician	115	50,330
		Satellite/Broadband/ Television Technician, Inst..	92	53,947
		Aircraft / A & P Mechanic	57	51,970
		Automotive Electronics Installer	46	13,748
Supply Meeting Demand	Maintenance, Repair, and Installation	HVAC Mechanic / Installer	70	44,570
Under Supply	Maintenance, Repair, and Installation	Automotive Service Technician / Mechanic	344	35,175
		Diesel Mechanic	273	43,280
		Maintenance / Service Supervisor	78	60,760
		Industrial Mechanic	49	50,600

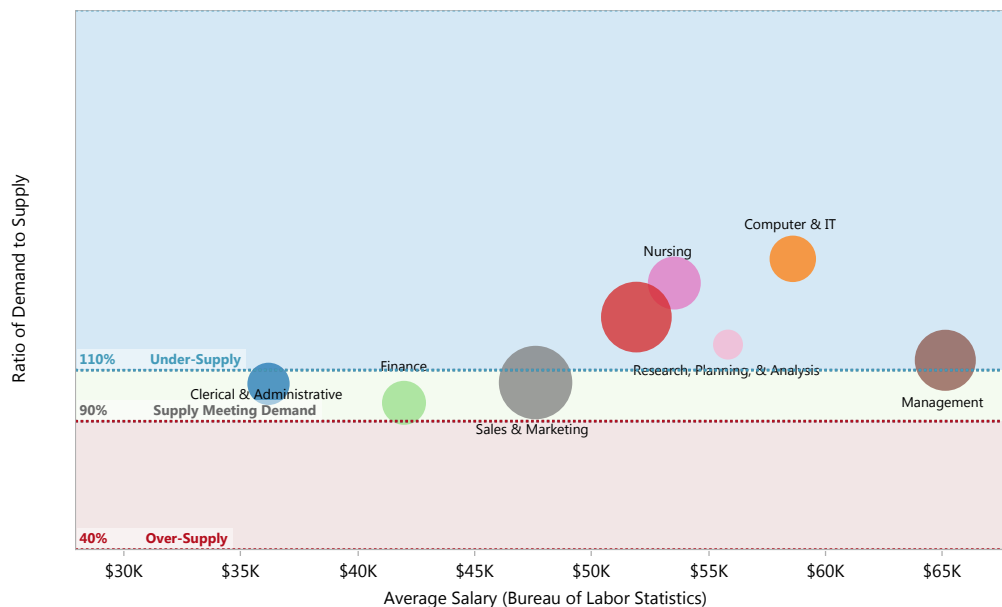
Regional Burning Glass Outcomes

These findings are presented on the next few pages.

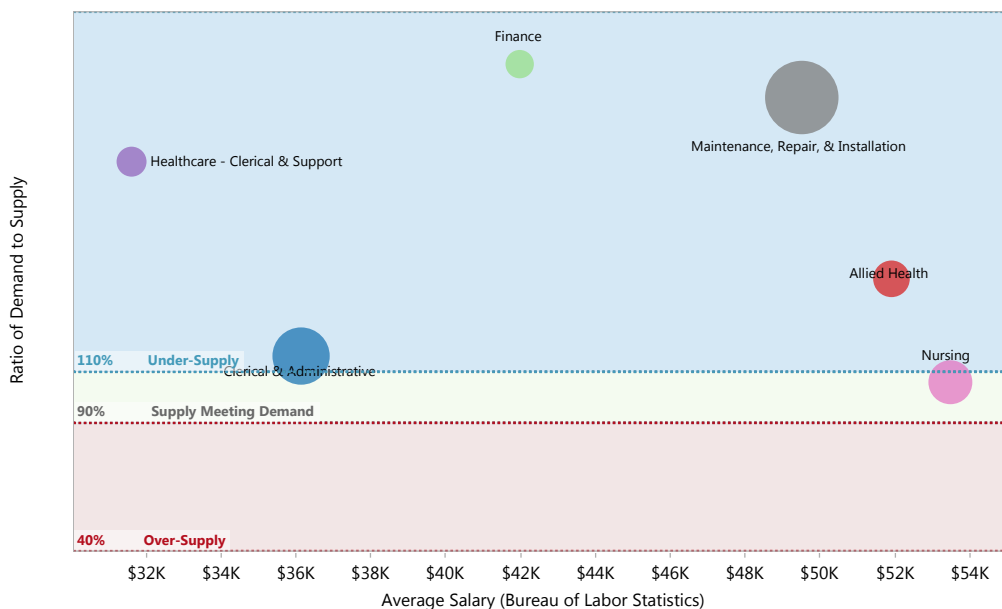
Bakken

The figures below illustrate workforce alignment in the 11 counties that make up the Bakken region. Overall, there is under-supply in both baccalaureate and sub-baccalaureate career fields.

There is unmet need for baccalaureate level allied health, nursing, and computer and IT professionals in this region.

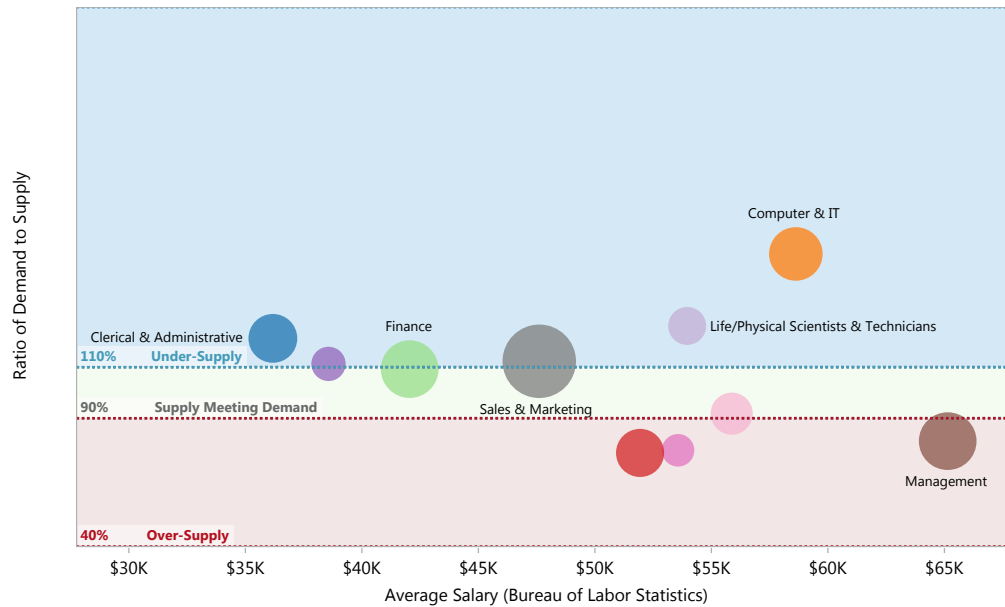


The greatest need at the sub-baccalaureate level is in the Maintenance, Repair & Installation career area. In fact, the need in the region is driving the statewide need. There are also employment needs in Finance and Healthcare Support fields, but the size of the bubble indicates that real-time job demand is low.

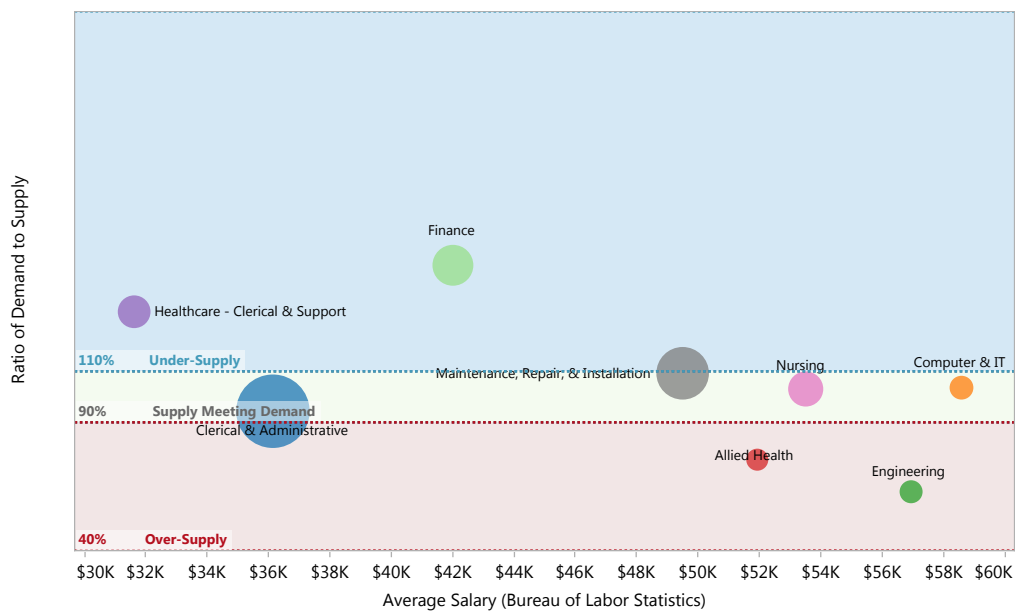


Bismarck

There is a small under-supply in the computer & IT career area at the baccalaureate level.



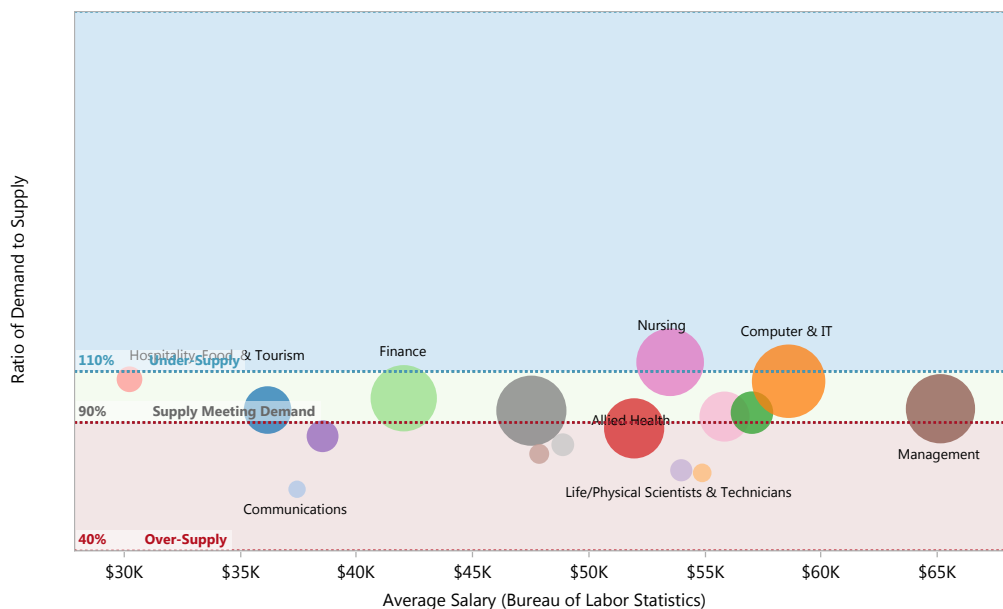
There are minor needs in Finance and healthcare clerical and support careers, but these shortages are better explained by unattractive salaries than by training needs. There is a small over-supply of positions in Allied Health and Engineering.



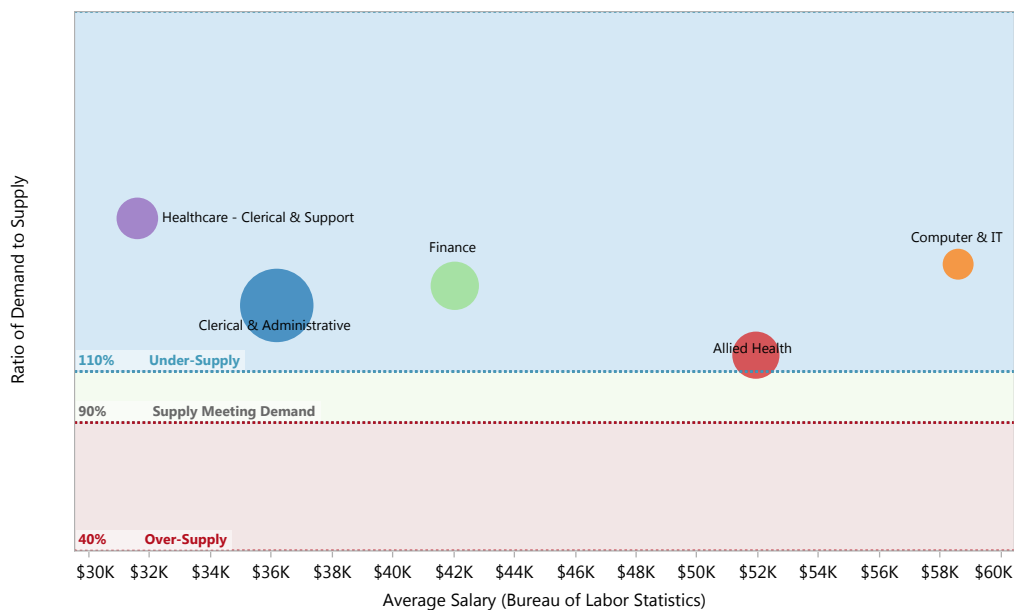
Fargo

In the Fargo region, the majority of careers in under-supply are at the sub-baccalaureate level. Again, clerical and administrative support positions in healthcare and business are under-supplied but most of these shortages are the result of low wages. While computer & IT careers offer more attractive wages, the real-time job demand is relatively small, as noted in bottom figure.

Baccalaureate and Above:



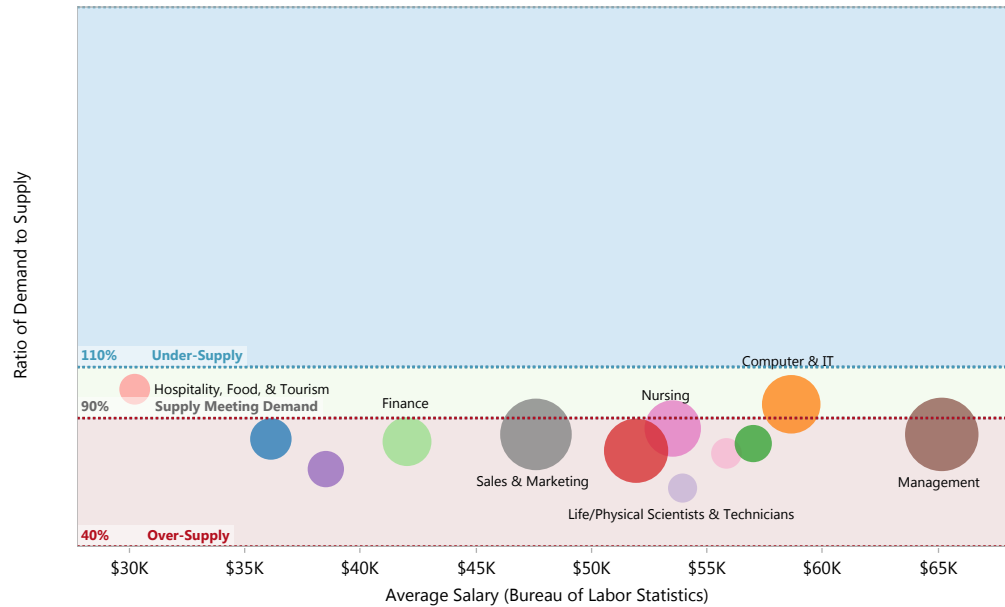
Sub Baccalaureate:



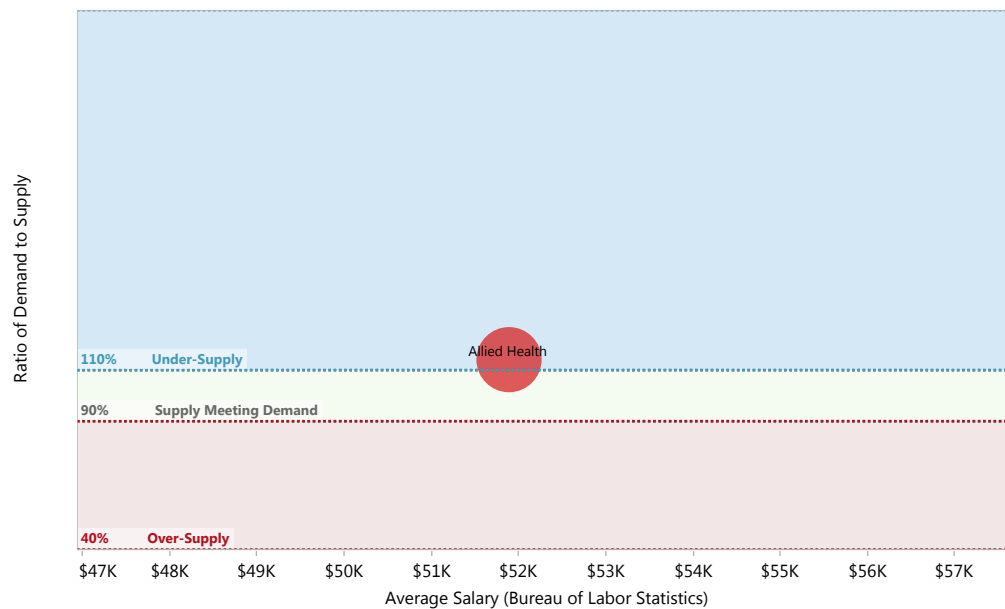
Grand Forks

Overall, multiple career fields are meeting demand or are over-supplied in the marketplace. At the sub-baccalaureate level, the only career field in this category are allied health positions with a slight under-supply.

Baccalaureate and Above:

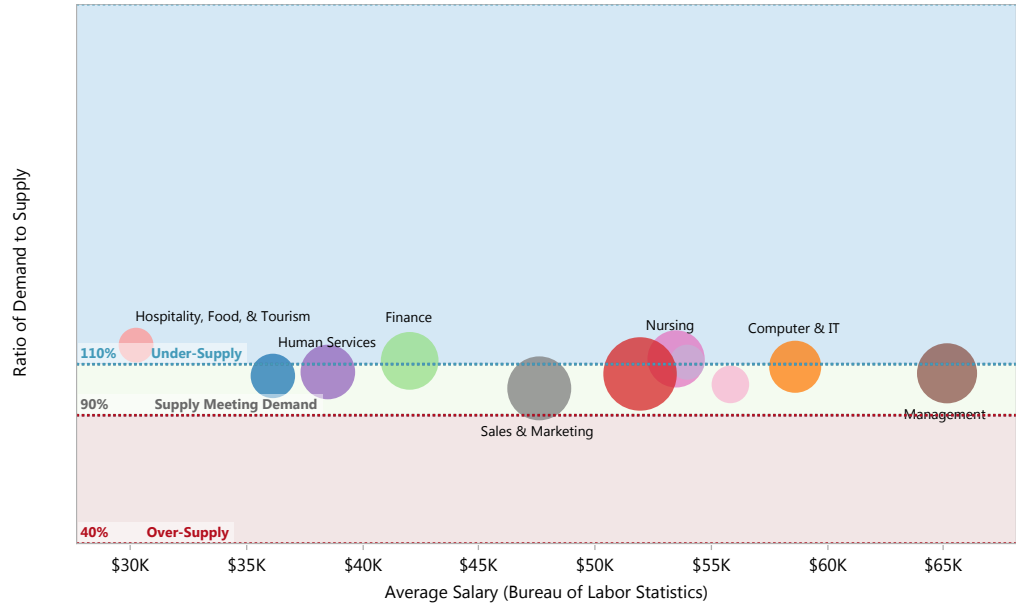


Sub Baccalaureate:

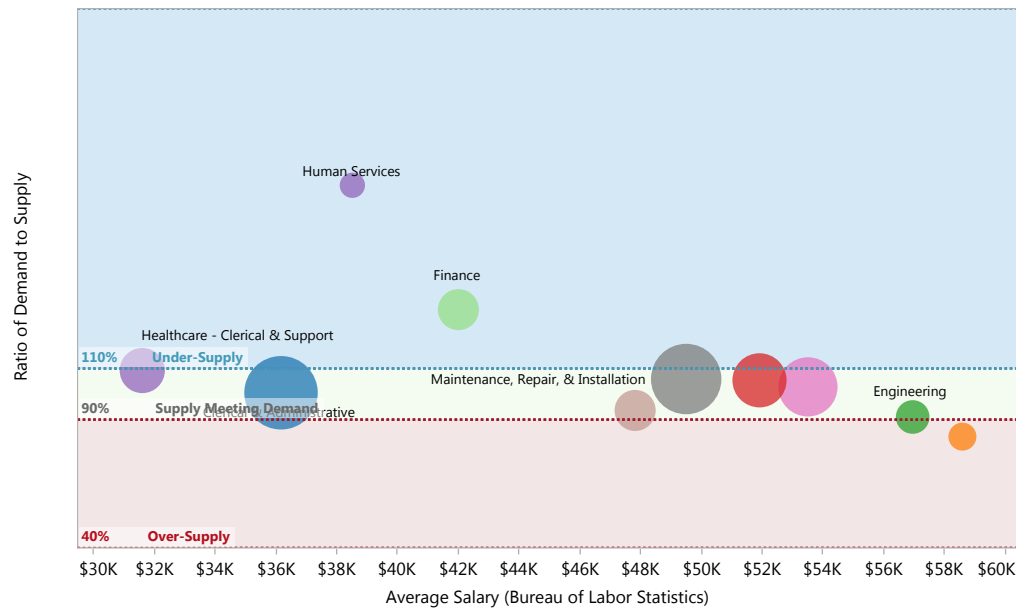


Other

The other regions represent 38 counties outside of the four regions analyzed in this section. The baccalaureate and above level portrays that for most career fields, supply is meeting demand. There is a small under-supply of positions in the hospitality, food and tourism category, but the lack of supply is more closely related to inability to attract a qualified workforce due to lower salaries than a lack of qualified workers.



With the exception of human services and finance career fields at the sub-baccalaureate level, the supply of graduates in the majority of career fields are meeting workforce demand. For human services and finance careers, the size of the bubble indicates that real-time job demand is small.



Summary

In scanning the regional Burning Glass outcomes, the overall results indicate that there are not large shortages in other regions of the state, at least in those areas that have an impact on facilities requirements. There are needs in low-wage health care support occupations, but these shortages are better explained by unattractive salaries than by training needs.

The Burning Glass data are the only ones that can be disaggregated by region. In conclusion, the take-away from these data and analyses is that the necessary expansion of capacity is:

- Mostly at the sub-baccalaureate level
- In fields dealing with preparation maintenance, repair, and installation occupations
- In the Bakken region

This suggests a possible expansion of capacity at Williston State College.

The 2020 Workforce Projections As Developed by the Georgetown Center for Education and the Workforce

The Georgetown University Center on Education and the Workforce is an independent, nonprofit research and policy institute affiliated with the Georgetown McCourt School of Public Policy that studies the link between education, career qualifications, and workforce demands.

The Center conducts research in three core areas with the goal of better aligning education and training with workforce and labor market demand: jobs, skills, and people.

The Center seeks to inform and educate federal, state, and local policymakers and stakeholders on ways to better align education and training with labor market demand and qualifications. It also seeks to create tools that enable decision makers to access and customize the data to allow for national, state, and sub-state analysis.

For this study, statewide employment data for North Dakota was reviewed to confirm the outcomes of the Burning Glass analysis. Other data sources do reinforce the importance of attention to sub-baccalaureate certificates and degrees. For example, the table *Change in Employment by Education Level, 2012-2020* notes change in North Dakota state employment by education level between 2012 and 2020. The table indicates that the increase in jobs requiring a bachelor's degree (45,433 additional jobs between 2012 and 2020) continue to outpace projected increases in any other attainment level, as noted in the "difference" column in the table. However, if one presumes that, in addition to jobs requiring an associate's degree (17,779), that many of the jobs in the Some College No Degree (SCND) category (25,572) will require individuals to have certifications of some kind, the gap between baccalaureate and sub-baccalaureate level diminish considerably. The table also notes that jobs requiring less than high school (LTHS) training and employment positions requiring graduate degrees will decline over the eight year period.

Change in Employment by Education Level, 2012-2020

	LTHS	HS	SCND	Associates	Bachelors	Graduate
Management	430	9,090	7,820	6,220	22,250	4,120
Business operations	-	810	3,630	930	3,410	770
Financial services	-	190	950	790	6,880	1,370
Legal	-	-	-	490	-	1,630
Computers & mathematical sciences	-	280	1,480	420	3,930	-
Architecture	-	-	250	630	280	-
Engineering	-	410	380	510	3,280	-
Life & physical sciences	-	40	70	90	940	1,850
Social Sciences	-	-	-	-	320	990
Community & social services	-	520	460	350	3,530	1,930
Arts, design, entertainment, sports & media	-	350	2,920	3,370	3,160	-
Education, Training & Library	-	980	670	880	12,590	9,700
Healthcare Professional & Technical	-	890	2,910	4,430	8,200	4,660
Healthcare Support	770	4,300	2,510	5,470	880	-
Food and Personal Services	1,020	13,730	13,140	2,660	2,580	220
Building and grounds	2,020	5,630	5,390	3,480	-	-
Cleaning & maintenance	1,490	4,080	7,370	1,600	5,400	-
Personal care & services	-	1,390	1,620	1,310	1,040	230
Protective services	1,420	12,330	19,590	6,790	14,270	2,430
Sales & related	4,070	11,980	19,960	8,140	17,760	220
Office & administrative support	540	1,340	1,970	90	570	280
Farming, fishing & forestry	4,620	14,910	11,690	4,690	4,210	-
Construction & extraction	570	8,050	4,220	6,550	420	-
Installation, maintenance & repair	1,190	9,810	5,000	4,500	3,060	-
Production	1,320	18,400	7,210	2,460	4,640	-
Total 2020	19,460	119,510	121,210	66,850	123,600	30,400
Total 2012	23,345	88,678	95,638	49,071	78,167	31,388
Difference	(3,885)	30,832	25,572	17,779	45,433	(988)

Source: The Georgetown Center for Education and the Workplace

Job Openings by Occupation and Education Level (In Thousands)

Occupation	Less than High School	High School Diploma	Some college/no degree	Associate's Degree	Bachelor's Degree	Graduate
Managerial and Professional Office	0	3	4	3	11	3
STEM	0	0	1	1	3	1
Social Sciences	0	0	0	0	0	0
Community Services and Arts	0	0	1	1	2	1
Education	0	0	0	0	4	3
Healthcare Professional and Technical	0	0	1	1	3	2
Healthcare Support	0	1	1	2	0	0
Food and Personal Services	2	8	9	3	3	0
Sales and Office Support	2	8	13	5	11	1
Blue Collar	3	17	10	6	4	0
Total	6	40	40	22	41	10

Source: The Georgetown Center for Education and the Workplace

The table *Job Openings by Occupation and Education Level*, also prepared by the Georgetown Center, looks at total job openings and makes the point that many of the jobs that will become available by 2020 will require education at less than the baccalaureate level. This in a state in which, in 2011-12, almost 73% of the degrees awarded in public colleges and universities were at the baccalaureate level or higher, as noted in the table below.

North Dakota: Statewide Degree Completion - Public Institutions Academic Year 2011-12

Certificate/Degree	Level	Number	Percent
Less than one year	Sub-baccalaureate	168	1.9%
One to two year	Sub-baccalaureate	326	3.7%
Associate	Sub-baccalaureate	1,840	20.8%
Two to four year		36	0.4%
Bachelor's/Post Bachelor's	Baccalaureate and Above	4,795	54.1%
Master's/Post Master's	Baccalaureate and Above	1,248	14.1%
Doctorate	Baccalaureate and Above	210	2.4%
First Professional	Baccalaureate and Above	233	2.6%
Total		8,856	100%

Source: NCES IPEDS Completions Survey

FACILITY CONDITION ASSESSMENT

As part of the NDUS 2014 Master Plan Project, prime contractor Paulien & Associates, Inc. subcontracted with VFA, Inc., a capital planning solution provider based in Boston, MA to review capital projects identified by NDUS schools and conduct an assessment of the current condition of all heating plants plus a sample of buildings on each campus. Between January and March, 2014, VFA conducted multiple visits to each school to interview facilities staff and administrators, and to physically visit selected buildings to assess their condition. This report summarizes VFA's findings and methodology.

Executive Summary

Review Capital Projects Identified by each NDUS School

Are schools nominating projects that are needed and are their cost estimates credible?

VFA assessors visited each of the 11 schools to review projects that each school has identified as part of the capital funding requests. The VFA teams interviewed facility managers and administrators about each project, then visually inspected the condition of the building(s) containing the projects to verify existing conditions.

- With the average age of NDUS buildings at over 60 years, and many systems that have been kept operating 135%+ longer than their rated lifespans, the projects schools are submitting are all definitely “due” in terms of systems being at or beyond their useful lifespans.
- VFA found that each school was assigning credible costs to their projects. VFA's estimates, localized for different parts of the state and adjusted to include soft costs, closely correlated with budgets from the schools.
- Consistent with the age of the facilities and recent deferred maintenance budgets that were small compared to the value of the portfolio, most schools have much longer lists of needs than the projects they are submitting for funding.

Review of Submitted NDUS Capital Projects		
A.	Are schools identifying and submitting projects that are really needed, based on condition?	YES
B.	Are schools proposing credible budgets for submitted projects?	YES
C.	Do schools have more needs than the projects they are submitting for funding?	YES
Conclusion: Can NDUS Administrators have confidence in the need for and costs of projects submitted by each school?		YES

NDUS Administrators can have confidence in the need for and costs of projects that the schools are submitting.

Review Heating Plants' Condition

Which plants are most in need of urgent repair?

VFA assessed the condition of the heating plants at each of the eleven campuses by visiting each school, conducting a visual inspection of the equipment and buildings, and interviewing local facilities personnel regarding on-going maintenance issues.

VFA's main findings are:

- Heating Plant Deferred Maintenance Needs, due now and within the next 6 years, total \$40M. APPA would rate the heating plant portfolio as in "Very Poor" condition.
- Of the 56 boilers identified in this assessment, 35 are classified as Beyond Useful Life and four more have less than three years remaining life.
- Of the 39 boilers at or near end of useful life the average age is 40 years old or 133% of rated life (30 years).
- Each school is maintaining their heating plant using best available staff and methodology as demonstrated by their ability to keep the systems operational well beyond their expected life.
- Extraordinary efforts are being made in almost all cases to keep existing aged systems operational, including fabrication of custom parts where replacement parts are no longer available. When possible, staff install alternate (easier to find and replace) parts to keep the overall system operational.
- The \$40M need shown is a "replace-in-kind" budget estimate. Additional or alternate capital investment to gain operational efficiencies at almost all campuses is warranted, but may run counter to goals for reducing energy costs or emissions. Many campuses also have site infrastructure needs (same age and deterioration as the plants) that were not identified as part of this study. Further study on alternate design solutions and infrastructure condition should be considered.

Heating Plant Needs	Replace-In-Kind Renewal Estimate*		Subtotal
Immediate Needs:			\$ 21,345,000
Two schools have plants that experienced failures during the 2013-'14 winter and have immediate renewal needs			
	VCSU	12,426,000	
	NDSU	8,919,000	
Within 2 years:			6,252,000
Two schools have plants in need of major renewals within 2 years			
	UND	6,037,000	
	WSC	215,000	
Within 3-4 years:			12,436,000
Five schools have plants in need of renewals within 3-4 years			
	NDSCS	7,250,000	
	DSU	2,661,000	
	MISU	995,000	
	BSC	991,000	
	DCB	545,000	
Good Condition:			7,000
Two schools have plants currently in good operating condition			
	MaSU	7,000	
	LRSC	0	
TOTAL FOR HEATING PLANTS			\$ 40,040,000
* Costs are replace-in-kind budgetary estimates, including soft costs and project overheads, in 2014 dollars (no inflation for future years). Costs do not include options to upgrade or change operations, which would require a more extensive design study. Costs do not include allowances for hazardous materials, should they be present.			

Assess the Condition of Sample Buildings

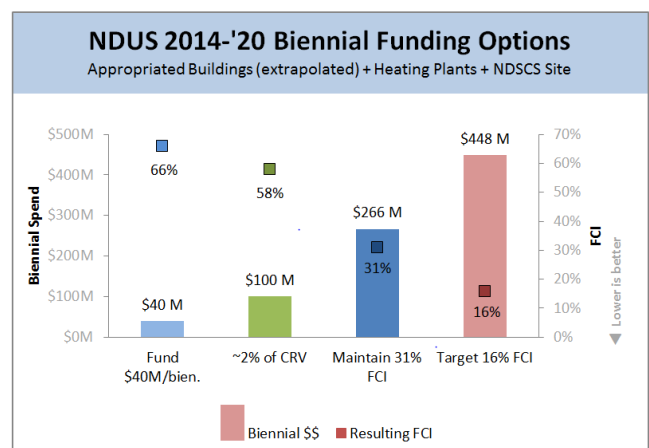
What is the total deferred maintenance liability for NDUS?

To help NDUS understand the size of the deferred maintenance backlog for all state-supported, "Appropriated" facilities, VFA assessed the condition of a sample number of buildings (between 3 and 8) on each campus.

- In total, VFA assessed 41 buildings with 2.3M GSF (24% of GSF in all Appropriated buildings).
- Deferred Maintenance Needs, due now and within the next 6 years, in the sample buildings totaled \$200M (\$86/SF). APPA would rate the portfolio as in "Fair" condition.
- Extrapolating the same needs \$/SF to all Appropriated buildings, and then adding in Heating Plant and NDSCS site infrastructure needs, would mean a total 6-Year Deferred Maintenance liability of \$808M.
- Funding to maintain the current condition will take approximately \$266M per biennium.
- The current Deferred Maintenance + Extraordinary Repairs funding of \$40M per biennium will result in doubling the backlog to \$1.64B by 2020.

6 Year System Lifecycle Deferred Maintenance + Extraordinary Repairs (Approp. Buildings, not incl. Heating Plants)		NDUS OVERALL
ASSESSED BUILDINGS FOR SAMPLE		
# Bldgs Assessed		41
GSF Assessed		2,331,278
% of Appropriated GSF Assessed		24%
6YR Def'd Maint. Sample Cost/SF		\$ 86 /SF
6YR Def'd Maint. Sample Condition		Fair
6YR Def'd Maint. Sample Cost \$\$		\$ 200,358,000
EXTRAPOLATING SAMPLE TO ALL APPROPRIATED BUILDINGS		
Weighted 6YR DM Cost/SF		\$ 78 /SF
Appropriated Bldgs GSF		9,721,086
Extrapolated 6YR Def'd Maint \$\$		\$ 756,047,000
Heating Plants		OVERALL
GSF Assessed		124,924
6YR Def'd Maint Cost/SF		\$ 321 /SF
Boiler Risk of Failure		Some
6YR Def'd Maint Repl in Kind Cost \$\$		\$ 40,040,000
Site Infrastructure		OVERALL
Not in assessment scope, so reporting campus input:		\$ 12,000,000
TOTAL 6 YEAR NEEDS		OVERALL
Appropriated Bldgs + H. Plants GSF		9,846,010
6YR Total Cost/SF		\$ 82 /SF
Estimated DM+ER, + HP + Site		\$ 808,087,000

Does not include Site Infrastructure unless needs reported by the School



Condition Assessment Report

Review Capital Projects Identified by each NDUS School

Are schools nominating projects that are needed and are their cost estimates credible?

VFA assessors visited each of the 11 schools to review projects that each school has identified as part of the capital funding requests. The VFA teams interviewed facility managers and administrators about each project, then visually inspected the condition of the building(s) containing the projects to verify existing conditions. For this report, VFA teams created their own cost estimates of the needed repairs or renewals that correspond to the nominated projects. VFA's report compares these to schools' own cost estimates, where available.

Some schools identified, discussed, and showed the team needs for upcoming projects that have yet to be submitted for funding. Other schools showed the team projects that are already under consideration but not yet started, as some prior approved funding has not been released to some schools yet. In a couple of cases, while walking around during the site visit, school facility managers identified new needs that they plan to submit for funding. VFA's report (see Appendices for detail by school) includes as many of the projects identified as submitted or planned to be submitted as was possible during the teams' visits.

The first question about the project list was: Are schools identifying and submitting projects that are really needed, based on condition? The answer to this is yes. VFA teams found that schools are very knowledgeable about the condition of their facilities. With the average age of NDUS buildings at over 60 years, and many systems that have been kept operating 135%+ longer than their rated lifespans, the projects schools are submitting are all definitely "due" in terms of systems being at or beyond their useful lifespans.

The second question about the project list was: Are schools proposing credible budgets for submitted projects? The answer to this is yes, as well. VFA found that each school was assigning credible costs to their projects. VFA's estimates, localized for different parts of the state and adjusted to include soft costs (but limited to "replace in kind" renewals – see notes in Assessment Methodology appendix), closely correlated with budgets from the schools. The scope of this study did not include detailed, project design-level scoping or estimating (which would be very expensive for all submitted projects), so VFA does not recommend using VFA's estimates as the final budget numbers for each individual project.

While on campus, the VFA teams also assessed the condition of 3-8 sample buildings, in order to see whether the current condition rating process was leading to identification of all upcoming needs. As detailed later in this report, consistent with the age of the facilities and recent deferred maintenance budgets that were small compared to the value of the buildings, most schools have much longer lists of needs than the projects they are submitting for funding. (More on why they do not submit longer lists later in this report.)

In summary:

- NDUS schools are identifying and proposing projects that are needed based on current conditions of their facilities.
- NDUS schools are proposing credible budgets for nominated projects.
- NDUS schools have much more deferred maintenance needs than the projects nominated as part of the current process. Some campuses have a good understanding (listing) of their broader needs while others do not.
- NDUS Administrators can have confidence in the need for and costs of projects that the schools are submitting.

Review Heating Plants' Condition

Which plants are most in need of urgent repair?

VFA sent a dedicated assessor to all 11 campuses to assess the condition of heating plants, conducting a visual inspection of the equipment and building(s), and interviewing local facilities personnel regarding on-going maintenance issues.

VFA found that NDUS schools have much more deferred maintenance needs in their heating plants than the projects nominated as part of the current process. Some campuses have a good understanding (listing) of their broader needs while others do not.





- Heating Plant Deferred Maintenance Needs, due now and within the next 6 years, total \$40M. APPA would rate the heating plant portfolio as in "Very Poor" condition.
- Of the 56 boilers identified in this assessment, 35 are classified as Beyond Useful Life and four more have less than three years remaining life.
- Of the 39 boilers at or near end of useful life the average age is 40 years old or 133% of rated life (30 years).
- Each school is maintaining their heating plant using best available staff and methodology as demonstrated by their ability to keep the systems operational well beyond their expected life.
- Extraordinary efforts are being made in almost all cases to keep existing aged systems operational, including fabrication of custom parts where replacement parts are no longer available. When possible, staff install alternate (easier to find and replace) parts to keep the overall system operational.
- Two schools (VCSU, NDSU) and have immediate renewal needs with plants that experienced failures during the 2013-'14 winter. VCSU needs to totally replace their heating plant. NDSU needs a combination of investment in major repairs to some portions and full replacement of other portions.
- Two schools (UND and WSC) have plants are in need of major renewals within the next 2 years.
- Five schools (NDSCS, DSU, MiSU, BSC, DCB) have plants in need of renewals within 3-4 years. While the plants are currently functional, the plants are nearing end of useful life and major capital investment will be required.
- Two schools (MaSU, LRSC) have plants currently in good operating condition. The LRSC plants good condition is a result of self-funded major investment in the heating systems (distributed heat pump system fed from LRSC's wind-turbine) in the recent past.

Heating Plant Needs	Replace-In-Kind Renewal Estimate*	Subtotal
Immediate Needs:		\$ 21,345,000
Two schools have plants that experienced failures during the 2013-'14 winter and have immediate renewal needs		
	VCSU 12,426,000	
	NDSU 8,919,000	
Within 2 years:		6,252,000
Two schools have plants in need of major renewals within 2 years		
	UND 6,037,000	
	WSC 215,000	
Within 3-4 years:		12,436,000
Five schools have plants in need of renewals within 3-4 years		
	NDSCS 7,250,000	
	DSU 2,661,000	
	MiSU 995,000	
	BSC 991,000	
	DCB 545,000	
Good Condition:		7,000
Two schools have plants currently in good operating condition		
	MaSU 7,000	
	LRSC 0	
TOTAL FOR HEATING PLANTS		\$ 40,040,000
* Costs are replace-in-kind budgetary estimates, including soft costs and project overheads, in 2014 dollars (no inflation for future years). Costs do not include options to upgrade or change operations, which would require a more extensive design study. Costs do not include allowances for hazardous materials, should they be present.		

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- Multiple campuses note site distribution networks (not part of this project scope) are approximately the same age and condition as the central plants and likely in need of major capital investment. Only NDSCS had definitive estimate from a third party engineering firm for their site work, which included steam line distribution – plus storm and sewer drainage systems and effected parking lots & walkways not technically part of the campus heating system. VFA has captured these site needs in a separate section of our summary, but in order to more definitively know its liabilities for these systems critical to campus operations, it may be wise for NDUS to assess the condition site infrastructure needs in a future study.

NDUS Assessed Heating Plants, by 6YR Facility Condition Index (FCI)

	SCH-Building	SCHOOL	CRV	6YR FCI	6YR FCI %	6YR FCI \$	
	Valley City State University	VCSU	4,518,000	275%	275%	12,426,000	Replace?
	Bismarck State College	BSC	787,000	126%	126%	991,000	
	ND State College of Science	NDSCS	9,893,000	73%	73%	7,250,000	
	North Dakota State University	NDSU	15,221,000	59%	59%	8,919,000	Poor
	Dickinson State University	DSU	4,968,000	54%	57%	2,661,000	
	University of North Dakota	UND	21,623,000	28%	28%	6,037,000	Fair
	Dakota College at Bottineau	DCB	2,021,000	27%	27%	545,000	
	Minot State University	MISU	6,863,000	14%	14%	994,000	
	Williston State College	WSC	2,000,000	11%	11%	214,000	
	Mayville State University	MaSU	4,955,000	0%	0%	7000	Good
	Lake Region State College	LRSC	375,000	0%	0%	0	
TOTAL of ASSESSED BUILDINGS			73,224,000	55%	57%	40,044,000	

Quality labels per APPA standard definitions

Assess the Condition of Sample Buildings

What is the total deferred maintenance liability for NDUS?

In an effort to gain perspective on the total deferred maintenance needs are at each school, VFA assessed the condition of select sample buildings, including the lifecycle of all their component systems. Schools chose which buildings to sample, with the intent to assess at least three buildings per school (8 buildings at the larger campuses of UND and NDSU) that would provide a reasonable representation of the types and condition of other buildings on campus. Some sample buildings had projects identified on the school's list for submittal in the current fiscal biennium, and some did not. There was not time to make the sampling scientific, nor to closely examine how well the sample matched the rest of the buildings at each school, so the condition of the rest of the portfolio may be better than, the same as, or worse than the sampled facilities.

For the eleven schools, VFA assessed 41 buildings (excluding the heating plants reported on above), containing 2.36M GSF, which represents 24% of the 9.7M GSF of state-supported buildings. Buildings ranged in age from 3 to 122 years old, with half over 60 years old. VFA did not assess site infrastructure elements as part of this project.






The group of 41 sampled buildings is in overall "Fair" condition, with \$200M (\$86/SF) in deferred maintenance needs over the next 6 years. This includes needs already deferred and due today, plus renewals due by 2020 – i.e. covering three biennial budget cycles, which is the approximate planning window needed to identify, prioritize,

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design, fund and execute capital projects for NDUS. Considered as a percentage of the buildings' replacement value (\$583M, \$247/SF), this amount of deferred maintenance (31%) is in the ball park with other public higher-education facilities of similar age that VFA has assessed, though just above the high end of the range. (Dividing the Near-Term Deferred Maintenance \$ Needs by the Building(s) Current Replacement Value = a ratio called the Facility Condition Index, or FCI. Public higher education campuses usually have starting 5-Year FCIs between 25%-30%.)

A few buildings are in "good" condition (FCI < 10%), reflecting recent construction or renovation. Most are in "fair" (< 40%) to "poor" (< 60%) condition, and a number of them are in such poor shape (FCIs > 60%) that replacement might be warranted, depending on other factors such as historical significance, buildable space for replacement, and evolving program needs. The tables below summarize the replace-in-kind deferred maintenance needs for the 41 sampled buildings over the next six years (three biennial budget cycles):

NDUS Assessed Sample Buildings, by 6YR Facility Condition Index (FCI)

	SCH-Building	AGE	6YR FCI		6YR FCI %	6YR FCI \$	
			\$/SF	▼			
	DCB-Old Main	108	204	<div></div>	91%	5,068,000	Replace? \$35,921,000
	VCSU-McFarland Hall	122	205	<div></div>	76%	13,359,000	
	LRSC-Student Union	48	98	<div></div>	71%	4,274,000	
	VCSU-McCarthy Hall	84	219	<div></div>	70%	5,586,000	
	NDSU-Walster Hall	55	158	<div></div>	63%	7,634,000	
	NDSU-E. Morrow Lebedeff Hall	61	131	<div></div>	58%	4,557,000	Poor \$86,394,000
	WSC-Stevens Hall Addition	39	325	<div></div>	57%	4,951,000	
	MaSU-Old Main	124	142	<div></div>	56%	7,836,000	
	DCB-Nelson Science Center	42	125	<div></div>	53%	2,004,000	
	NDSU-Van Es Hall	38	145	<div></div>	53%	6,305,000	
	NDSU-Civil & Industrial Engr'g	49	125	<div></div>	50%	4,041,000	
	DSU-May Hall	90	134	<div></div>	50%	11,148,000	
	DSU-South Campus Classroom	64	87	<div></div>	46%	1,140,000	
	BSC-Armory	52	94	<div></div>	45%	3,673,000	
	MaSU-Fieldhouse	54	95	<div></div>	44%	3,177,000	
	NDSCS-Blikre Activities Center	37	77	<div></div>	44%	7,951,000	
	NDSU-Stevens Hall	48	121	<div></div>	43%	5,941,000	
	MiSU-Dome	33	130	<div></div>	41%	19,890,000	
	LRSC-Main Building	48	81	<div></div>	40%	3,780,000	
	BSC-Schafer Hall	53	107	<div></div>	39%	7,638,000	
	MaSU-Classroom Building	46	91	<div></div>	39%	1,970,000	Fair \$73,792,000
	DCB-Thatcher Hall	65	92	<div></div>	36%	5,515,000	
	VCSU-Graichen Gym	91	91	<div></div>	35%	1,744,000	
	DSU-South Campus Office	64	82	<div></div>	35%	250,000	
	WSC-Crighton Hall	38	86	<div></div>	35%	1,813,000	
	UND-O'Kelly Hall	67	61	<div></div>	34%	8,127,000	
	UND-Bryce Streibel Hall	29	72	<div></div>	33%	2,117,000	
	NDSU-Ceres Hall	104	55	<div></div>	30%	3,590,000	
	UND-School of Med Health Sci	64	55	<div></div>	30%	15,120,000	
	UND-Babcock Hall	106	48	<div></div>	26%	1,142,000	
	NDSCS-Ballweber Hall	58	33	<div></div>	24%	866,000	
	BSC-Technical Center	39	45	<div></div>	20%	4,236,000	
	MiSU-Old Main	101	81	<div></div>	19%	8,888,000	
	LRSC-Library	48	40	<div></div>	17%	596,000	
	NDSU-Sudro Hall	55	42	<div></div>	16%	2,636,000	
	NDSU-Quentin Burdick Bldg	22	40	<div></div>	15%	4,338,000	
	UND-Harrington Hall	62	22	<div></div>	14%	1,404,000	
	DSU-Murphy Hall	44	29	<div></div>	12%	1,802,000	
	MiSU-Swain Hall	62	43	<div></div>	9%	3,338,000	Good \$4,249,000
	NDSCS-Horton Hall	87	9	<div></div>	5%	506,000	
	WSC-Western Star Career Ctr	3	12	<div></div>	3%	405,000	
TOTAL of ASSESSED BUILDINGS		61	85	<div></div>	34%	200,356,000	

NDUS Assessed Sample Buildings, by 6YR Def'd Maintenance \$\$ Needs

		6YR FCI		▼				
	SCH-Building	AGE	\$/SF	6YR FCI %	6YR FCI \$			
	MISU-Dome	33	130	<div><div></div></div>	41%	19,890,000	\$ 10+ M	\$60 M
	UND-School of Med Health Sci	64	55	<div><div></div></div>	30%	15,120,000		
	VCSU-McFarland Hall	122	205	<div><div></div></div>	76%	13,359,000		
	DSU-May Hall	90	134	<div><div></div></div>	50%	11,148,000		
	MISU-Old Main	101	81	<div><div></div></div>	19%	8,888,000		
	UND-O'Kelly Hall	67	61	<div><div></div></div>	34%	8,127,000	< \$10 M	\$76 M
	NDSCS-Blikre Activities Center	37	77	<div><div></div></div>	40%	7,951,000		
	MaSU-Old Main	124	142	<div><div></div></div>	56%	7,836,000		
	BSC-Schafer Hall	53	107	<div><div></div></div>	39%	7,638,000		
	NDSU-Walster Hall	55	158	<div><div></div></div>	63%	7,634,000		
	NDSU-Van Es Hall	38	145	<div><div></div></div>	53%	6,305,000		
	NDSU-Stevens Hall	48	121	<div><div></div></div>	43%	5,941,000		
	VCSU-McCarthy Hall	84	219	<div><div></div></div>	70%	5,586,000		
	DCB-Thatcher Hall	65	92	<div><div></div></div>	36%	5,515,000		
	DCB-Old Main	108	204	<div><div></div></div>	91%	5,068,000		
	WSC-Stevens Hall Addition	39	325	<div><div></div></div>	57%	4,951,000	< \$5 M	\$62 M
	NDSU-E. Morrow Lebedeff Hall	61	131	<div><div></div></div>	58%	4,557,000		
	NDSU-Quentin Burdick Bldg	22	40	<div><div></div></div>	15%	4,338,000		
	LRSC-Student Union	48	98	<div><div></div></div>	71%	4,274,000		
	BSC-Technical Center	39	45	<div><div></div></div>	20%	4,236,000		
	NDSU-Civil & Industrial Engn'g	49	125	<div><div></div></div>	50%	4,041,000		
	LRSC-Main Building	48	81	<div><div></div></div>	40%	3,780,000		
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	DCB-Nelson Science Center	42	125	<div><div></div></div>	53%	2,004,000		
	MaSU-Classroom Building	46	91	<div><div></div></div>	39%	1,970,000		
	WSC-Crighton Hall	38	86	<div><div></div></div>	35%	1,813,000	< \$1 M	\$2.6 M
	DSU-Murphy Hall	44	29	<div><div></div></div>	12%	1,802,000		
	VCSU-Graichen Gym	91	91	<div><div></div></div>	35%	1,744,000		
	UND-Harrington Hall	62	22	<div><div></div></div>	14%	1,404,000		
	UND-Babcock Hall	106	48	<div><div></div></div>	26%	1,142,000		
	DSU-South Campus Classroom	64	87	<div><div></div></div>	46%	1,140,000		
	NDSCS-Ballweber Hall	58	33	<div><div></div></div>	24%	866,000		
	LRSC-Library	48	40	<div><div></div></div>	17%	596,000	< \$1 M	\$2.6 M
	NDSCS-Horton Hall	87	9	<div><div></div></div>	5%	506,000		
	WSC-Western Star Career Ctr	3	12	<div><div></div></div>	3%	405,000		
	DSU-South Campus Office	64	82	<div><div></div></div>	35%	250,000		
TOTAL of ASSESSED BUILDINGS		61	85	<div><div></div></div>	34%	200,356,000		

Most of the deferred maintenance is due to components having reached the end of their useful lifespan, with a significant amount of the deferred maintenance originally due more than 20 years ago.

Sampled Buildings' System Renewals by Due Date

Rated Due Date	# of Systems	Renewal Cost	
> 20 yrs ago	624	\$79 M	40%
10-19 yrs ago	367	\$44 M	22%
1-9 years ago	496	\$61 M	31%
Due just now	70	\$16 M	8%
Total Sampled Bldgs	1,557	\$200 M	100%

As a testament to the repair-to-extend-life abilities of the building managers at all the campuses, facilities operations have been getting 135% of the average system's rated life. While some systems are more critical to keeping the buildings open, enough of them are well overdue and at risk of failure that counting on continued, uninterrupted operations gets more risky each passing year.

With so many systems beyond their useful life, and limited resources available to address the needs, many owners look to which systems are more critical to a building's operations to help decide what is most important. The needs for the sample buildings break down by system as shown in the table below.

Sampled Buildings Deferred Maintenance by Major System

Major System Group	6YR Def'd Maint. \$
Mechanical / Electrical / Plumbing	92,177,000
Interior Constr & Structural	65,249,000
Exterior Envelope	12,627,000
FFE & Site	11,518,000
Roof	8,690,000
Fire Protection	7,903,000
Elevator	2,192,000
TOTAL SAMPLED BUILDINGS	200,356,000

It appears that grouping the needs by major system does not differentiate enough which needs are most critical to supporting the mission of each school. Best practice among owners with whom VFA works is to further group the requirements into budget "buckets" that more closely represents which projects would be necessary for operations and likely funded from the biennial deferred maintenance fund, which could be left to "run to fail" (and replace only then), and which would be best done as major capital renovations (usually considered "once in 30 years" major update projects for a building). The "buckets" help whittle the total amount due into smaller amounts that are more easily considered for funding. If the data from these lifecycle assessments is to serve as the basis for future capital planning, this "grouping by budget bucket" would be a good next step.

Extrapolating Results to All Appropriated Buildings

The table on the next page summarizes the needs for each campus, and NDUS as a whole.

NDUS Portfolio Summary of All Deferred Maintenance Needs, 2014-2020

6 Year System Lifecycle Deferred Maintenance + Extraordinary Repairs (Approp. Buildings, not incl. Heating Plants)													NDUS OVERALL
ASSESSED BUILDINGS FOR SAMPLE													
# Bldgs Assessed	BSC	DCB	DSU	LRSC	MaSU	MISU	NDSCS	NDSU	UND	VCSU	WSC		
GSF Assessed	205,796	100,974	162,602	74,800	110,300	340,900	184,102	445,362	526,259	109,926	70,257	3	41
% of Appropriated GSF Assessed	54%	66%	36%	34%	50%	51%	26%	17%	14%	31%	32%	3	2,331,278
6YR Def'd Maint. Sample Cost/\$F	\$ 76 /\$F	\$ 125 /\$F	\$ 88 /\$F	\$ 116 /\$F	\$ 118 /\$F	\$ 94 /\$F	\$ 51 /\$F	\$ 88 /\$F	\$ 53 /\$F	\$ 188 /\$F	\$ 102 /\$F		24%
6YR Def'd Maint. Sample Condition	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Fair	Fair	Poor	Fair		\$ 86 /\$F
6YR Def'd Maint. Sample Cost \$\$	15,548,000	12,588,000	14,340,000	8,650,000	12,983,000	32,115,000	9,323,000	39,042,000	27,910,000	20,689,000	7,169,000		\$ 200,358,000
EXTRAPOLATING SAMPLE TO ALL APPROPRIATED BUILDINGS													
Appropriated Bldgs GSF	378,505	152,049	448,739	220,735	219,910	671,070	699,534	2,681,384	3,577,025	352,962	219,173		\$ 78 /\$F
Extrapolated 6YR Def'd Maint \$	28,596,000	18,955,000	39,575,000	25,526,000	25,885,000	63,221,000	35,425,000	235,060,000	195,010,000	66,430,000	22,364,000		\$ 756,047,000
Heating Plants													
GSF Assessed	2,000	2,117	7,030	n/a	7,000	13,618	20,756	23,002	40,000	8,601	800		124,924
6YR Def'd Maint Cost/\$F	\$ 493 /\$F	\$ 257 /\$F	\$ 379 /\$F	n/a	\$ 1 /\$F	\$ 73 /\$F	\$ 349 /\$F	\$ 388 /\$F	\$ 151 /\$F	\$ 1,445 /\$F	\$ 269 /\$F		\$ 321 /\$F
Boiler Risk of Failure	P3 - within 3yr	P3 - within 3yr	P3 - within 3yr	n/a	Good cond.	P3 - within 3yr	P3 - within 3yr	P0 - Failed	P1 - within 1yr	P0 - Failed	P1 - within 1yr		
6YR Def'd Maint Repl in Kind Cost \$\$	985,000	545,000	2,661,000	n/a	7,000	995,000	7,250,000	8,919,000	6,037,000	12,426,000	215,000		\$ 40,040,000
Site Infrastructure													
BSC	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		\$ 12,000,000
DCB	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
DSU	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
LRSC	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
MaSU	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
MISU	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
NDSCS	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
NDSU	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
UND	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
VCSU	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
WSC	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported	not reported		
TOTAL 6 YEAR NEEDS													
BSC	380,505	154,166	455,769	220,735	226,910	684,688	720,290	2,704,386	3,717,025	361,563	219,973		9,846,010
Appropriated Bldgs + H. Plants GSF	\$ 78 /\$F	\$ 126 /\$F	\$ 93 /\$F	\$ 116 /\$F	\$ 114 /\$F	\$ 94 /\$F	\$ 76 /\$F	\$ 90 /\$F	\$ 54 /\$F	\$ 218 /\$F	\$ 103 /\$F		\$ 82 /\$F
6YR Total Cost/\$F	29,581,000	19,500,000	42,236,000	25,526,000	25,892,000	64,215,000	54,675,000	243,979,000	201,047,000	78,856,000	22,579,000		\$ 808,087,000
Estimated DM+ER, + HP + Site													

Does not include Site Infrastructure unless needs reported by the School

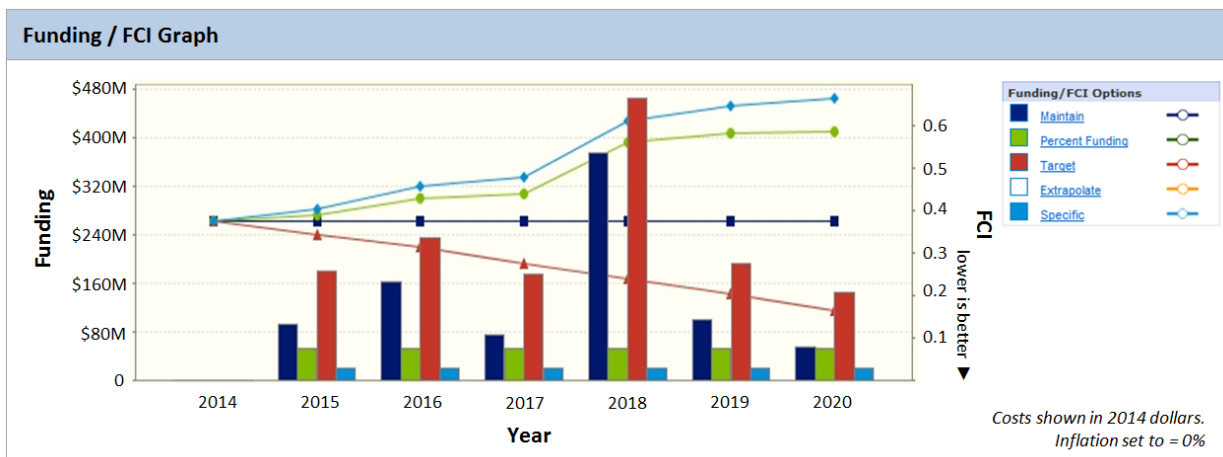
The (41) assessed buildings comprise 24% of the GSF of state-supported Tier 1 + Tier 2 buildings in the NDUS portfolio, and require an average of \$86/SF of work, if NDUS were to address all of the deferred maintenance needs. If the condition of these buildings represents similar condition in the rest of the buildings, and identified needs for heating plants and site infrastructure are added in, we can estimate the total amount of deferred maintenance for the portfolio:

	Amount
At \$78/SF (weighted avg), the 2014-'20 Deferred Maintenance & Extraordinary Repair Needs for 9.7M GSF of state-supported buildings:	\$ 756,000,000
Heating Plant needs (from above):	\$ 40,000,000
Site Infrastructure needs were not part of the current study's scope, but at least two campuses identified major site needs, with one campus having an estimate in hand; NDSCS has a third party engineering study valuing its site infrastructure needs at:	\$ 12,000,000
Total NDUS Estimated 2014-'20 Deferred Maintenance Needs:	\$ 808,000,000

Funding Scenarios

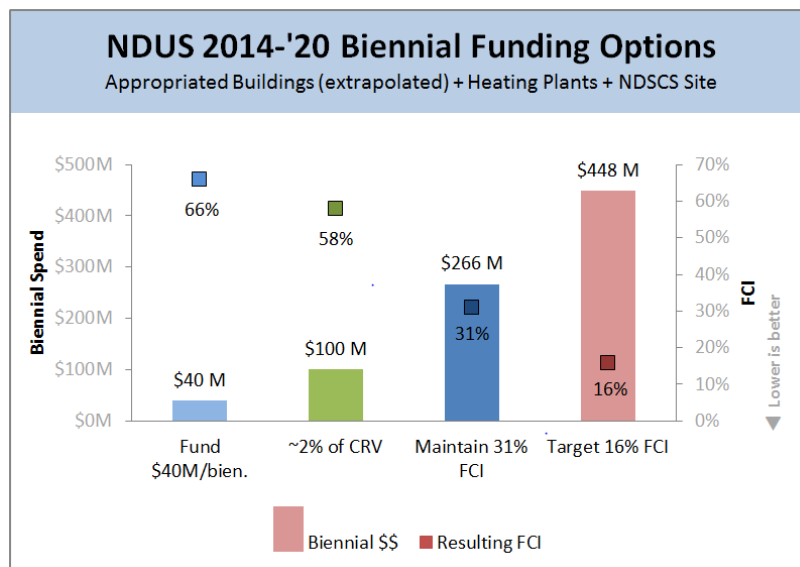
VFA forecast several scenarios that compared funding at different annual levels with the resulting condition of the portfolio. The *Funding/FCI Graph* below illustrates four scenarios that help frame the choices facing NDUS funders.

In the *Funding/FCI Graph*, the columns show the amount of annual funding, and the lines represents the amount of deferred maintenance for the portfolio. Deferred maintenance is represented using the Facility Condition Index (FCI), or the ratio of [the Deferred Maintenance \$\$ Needs] to [the Current Replacement Value of the buildings]. The lower the line, the less deferred maintenance there is, so the lower the line the better. The starting point common to all the lines – the 2014 deferred maintenance backlog – is \$808M, or 31% of the portfolio's CRV of \$2.6B, so starting FCI = 31%.



- Funding to Maintain (dark blue)**
 NDUS will need an average of \$266M funding per biennium to hold the current condition (FCI = 31%) constant over the next six years. This is the amount needed to avoid getting further behind as buildings age and more systems require renewal, but will not reduce the deferred maintenance backlog either.
- Condition if Fund at 2% CRV (green)**
 A common accounting goal is to fund deferred maintenance in line with depreciation. For buildings with an average expected life of 50-years, that would mean funding at 2% of CRV per year (from the first year the building is built). For NDUS' portfolio, funding at 2% of CRV per year would be approximately \$100M per biennium. Since deferred maintenance was not funded at this level in the past, there is a backlog in 2014. Plus, with an average building age of 60 years, more than 2% of the systems are now coming due each year. So funding at 2% of CRV would let the deferred maintenance backlog get worse, increasing to \$1,512M (58% of CRV) by 2020.
- Funding to Achieve Target (halve the amount of DM)**
 If NDUS decided that the current condition of its facilities was not acceptable, and wanted to target a better condition for in six years – for example, to cut the amount of deferred maintenance in half in that time (reducing backlog from \$808M to \$404M, and FCI from 31% to 16%), it would need funding of \$448M per biennium.
- Condition if Current Funding Trend Continued**
 Funding for the next six years at the same level as the last six (2009-2014) – an average of \$40M per biennium – would not keep up with the aging facilities and accumulating renewal needs, and the deferred maintenance backlog would increase from \$808M to \$1,720M (66% of CRV).

The figure below summarizes the biennial funding options and resulting condition outlined above.



Best Practices and Next Steps

No portfolio owner funds 100% of their deferred maintenance backlog. Doing so is not financially nor physically feasible, in terms of how much funding and how disruptive that work would be each year. The association of facilities managers for higher education in the U.S. – the American Physical Plant Association, or APPA – standards say best practice would be to aim for keeping deferred maintenance at or below 10% of facilities' CRV (FCI < 10%, or "good" condition), but almost no public higher education client whom VFA has served has been able to achieve that condition across its entire portfolio. The higher education clients with "better" facilities typically have a deferred maintenance backlog of around 15%-19% of their facilities' CRV.

NDUS faces a decision about what condition it wants and can afford for its facilities. And the options are all challenging. Past funding has resulted in a substantial backlog of deferred maintenance. Continuing at the current funding rate will result in portfolio-wide deterioration of facilities and put continued operations at risk of major interruption. The funding required to maintain the current “fair” condition of facilities is 7x current levels. Funding to reduce deferred maintenance and end up with facilities in better condition than today would be even more.

Each of these scenarios would require (a) a decision on the condition NDUS wants for its facilities, (b) clarity about process and levels for future funding that goes beyond one biennium at a time, and (c) some prioritization of which facilities and systems support mission critical operations and which projects are physically and financially feasible, so that NDUS can decide which portion of its backlog it can and will address.

If more exact condition data on the whole portfolio is desired, NDUS could consider a future study to assess the remaining state-supported facilities, including remaining Tier 1 and Tier 2 buildings plus site infrastructure. Schools might also consider whether to do a similar study of their non-state-supported facilities in order to get a clear picture of the liabilities for their entire campus(es).

Detailed information is provided in the Appendices.

DEFERRED MAINTENANCE & CAPITAL PROJECT APPROVAL PROCESS

Executive Summary

The following report documents the results of an evaluation of the current master plan submittal and approval process conducted by VFA, Inc. for the North Dakota University System (NDUS). As a part of the evaluation, VFA visited each one of the eleven colleges and universities in the university system. In these site visits, VFA met with representatives from the respective institutions responsible for the preparation and submittal of the Master Plans for each biennium and the facilities professionals responsible for executing the projects and generally maintaining the facilities. In these meetings, VFA:

- Reviewed the current processes for submittal, approval and execution of master plan projects and management of the facilities within the extraordinary repairs budget;
- Identified the challenges faced by the institutions in the above processes;
- Solicited suggestions from the institutions on improvements to the current processes

VFA then documented each of the site visits. The site visit notes are included in this report as appendices. Based on the results of the site visits and research on the NDUS and colleges and universities websites, VFA synthesized the data collected into 10 recommendations for improvement on the existing processes. The recommendations address the master plan submittal process, the approval process and the deferred maintenance/extraordinary repairs budget process. The recommendations are documented in detail in the Recommendations section of this report and are summarized below:

Submittal Process

1. Remove the limit on projects that can be submitted by each institution in a given biennium
2. Provide central resources for project development and estimating
3. Streamline consent agenda submittals for approval

Approval Process

4. Establish overall objectives and priorities
5. Establish transparent prioritization and approval criteria
6. Evaluate all submitted projects on merits according to prioritization criteria
7. Reduce length of time between project submittal and approval
8. Increase the dollar levels for which a project requires State oversight

Deferred Maintenance/Extraordinary Repairs Process

9. Modify the formula for the extraordinary repairs budget
10. Improve reporting on deferred maintenance liability

Recommendations

During the course of our discussions with each of the institutions that make up the North Dakota University System, we encountered many common challenges faced by the institutions under the current system and some unique ones that nonetheless follow a common theme. We have synthesized our own observations with the suggestions made by the representatives from the colleges and universities in the system into the 10 recommendations below. The recommendations have been grouped into three major areas focused around the project submittal process, the State selection and approval process associated with major capital projects and the extraordinary repairs (deferred maintenance) budgeting process. Some of the recommendations require policy changes that would be relatively easy to put into place, while others are currently governed by legislative mandate and would require legislative approval to execute.

Submittal Process

1. *Remove the limit on projects that can be submitted by each institution in a given biennium* – Institutions are limited in the number of master plan projects that can be submitted in a biennium regardless of the need. This negatively impacts institutions at both ends of the size spectrum. For the smaller institutions, the limit is two per biennium. At the other end of the spectrum, large institutions with dozens of buildings are allowed only three projects per biennium. With this limited number, institutions are incentivized to select only their most attractive projects, leaving many otherwise deserving projects off the list. Many projects stay on the list through multiple cycles further exacerbating the backlog. The limited number of projects can also impact the logical flow of project execution. Projects requiring infrastructure improvements may be included on the list and approved prior to the needed infrastructure projects. This may result in demolition and rework of recently completed projects. To avoid a concentration of project development effort around the submittal period, projects should be developed as they arise naturally and all projects ready at the time of the Master Plan submission should be included. In conjunction with Recommendations 6 and 7 below, this will create an environment where all potential projects are considered allowing for the best projects to be selected.
2. *Provide central resources for project development and estimating* – Prior to submittal, projects must be scoped and estimated. Master Plan projects are typically of the size and complexity, that this effort requires the services of professional architects and engineers. However, prior to project approval, there are no project funds with which to engage these services. Institutions use a variety of ways to accomplish this task. Some look to local architects and engineers to provide pro bono services upfront in anticipation of future design work once the project is approved. Others try to execute these services with their in-house staff in addition to their normal responsibilities. In both cases, the scope and estimates are often developed at a high level and the quality and accuracy is suspect. When institutions must hire professionals, the fees associated with the work typically come from already overstretched facilities budgets, reducing the amount of repair work that can be executed. Ideally, a centralized function at the University System could provide design and estimation services for the early development of projects. This would not only provide the resources to accomplish this task, but also improve the consistency in product between projects and improve the efficiency of service delivery. Alternatively, a fund could be established by which the institutions could hire their own professionals to provide the service. While this would solve the funding issue, it would not impact the consistency or efficiency of the scoping and estimating process.
3. *Streamline consent agenda submittals for approval* – Currently, institutions must submit full documentation for approval on all projects above \$250,000 regardless of the funding source. For projects funded with local funds or grants and not from State funds, the approvals are often handled by consent agenda, a mechanism by which multiple items can be approved in bulk. Given the nature of the approval and the limited impact on state funding for these projects, the time and expense preparing the current submittals is inconsistent with the review received. We would recommend a streamlined submittal form be developed for non-State funded projects to be approved by consent agenda.

Approval Process

4. *Establish overall objectives and priorities* – Ideally, approved projects across the state should support the strategic objectives of the University System and these objectives should be developed using quantitative and qualitative analysis such as workforce projections, demographic analysis, etc. NDUS and the State Board of Higher Education should establish overall objectives and priorities for university development based on such analysis and publish these to the colleges and universities to use as guidelines in master plan development. Potential projects can then be evaluated based on the level of support each project provides toward the objectives.
5. *Establish transparent prioritization and approval criteria* – Under the current process, there is a published list of criteria by which the submitted projects will be evaluated. However, there is not quantitative process by which these criteria are applied to each project and there is not published document that notes the reasons why a project was approved or rejected. The lack of a system for applying and reporting on prioritization methods and a predictability associated with it breeds skepticism from the colleges and universities on the efficacy and equity of the decisions made. We would recommend development of a matrix for the currently published prioritization criteria to quantify the impact of the criteria on the overall importance of the project. The matrix should be developed with input from NDUS, the State Board of Education, the Legislature and the colleges and universities in the system.
6. *Evaluate all submitted projects on merits according to prioritization criteria* – The prioritization matrix should be structured such that it can easily be applied to all submitted projects, used in the final decision process and published with the approvals. If executed in conjunction with Recommendation 1 to remove the limits on project submittals, this will ensure that all projects are evaluated and that no potentially beneficial projects are overlooked. It would also give the colleges and universities more predictability and visibility into a potential projects chances. If a project scores low in the prioritization matrix, an institution will understand that the likelihood of approval for the project in this or future biennia is limited and if the project is important to the institution, may seek other funding sources early in the process rather than waiting for multiple rejections in the current process.
7. *Reduce length of time between project submittal and approval* – There is currently an approximately two- year window from request of funding to actual approval. This long lag time results in a situation where the original estimate for the project may no longer be valid due to the current labor market. The oil industry has raised the costs of construction across the state, most severely in the northwest. As a result, the scope of the project must often be reduced to meet the original estimates. Also, the current process is timed such that the approvals can extend through the construction season, effectively delaying the project to the following year. In the cases where there are matching funds from outside donors, the delay in approvals can impact the availability of the donor funds. Some of the timing issues result from the legislative calendar and cannot be changed. Some of the changes noted above should allow for shortened review cycles and wherever possible, these should be reduced. Where it is not possible to reduce the time, allowances should be made to adjust the cost of projects as the result of increased construction costs due to the delay.
8. *Increase the dollar levels for which a project requires State oversight* – Institutions must report on project progress for all projects over \$250,000. For projects over \$385,000, an additional review by the Budget Section is also required. The scopes of projects that can be accomplished at these dollar levels are quite small and shrinking as construction costs rise across the state. For smaller institutions with limited budgets, the number of projects that they can do in a given year above these thresholds is small. However, at the larger institutions, the additional reporting requirements can be quite cumbersome. If budgets increase, this will only exacerbate the problem. The values at which these reporting requirements are activated should be raised to account for construction cost increases in recent years and should be adjusted annually in the future.

Deferred Maintenance/Extraordinary Repairs Process

9. *Modify the formula for the extraordinary repairs budget* – The formula used for determination of extraordinary repairs budget greatly underestimates the level of funding needed to maintain the facilities at an appropriate level. As a result, more necessary repairs and replacements are deferred each year and the facilities deteriorate. As the facilities deteriorate, it becomes more difficult to recruit students, faculty and researchers. The current formula takes the replacement value of each building and infrastructure as determined by the Fire and Tornado Fund and multiplies it by 2% to calculate the anticipated capital reinvestment totals. The anticipated capital renewal totals are then multiplied by a percentage to determine actual funding. The percentage varies by institution, but is generally around 15%. We recommend the following changes to the current formula:
- a. *Improve the calculation of investment percentage* – The two percent value for capital reinvestment is consistent with industry recommendations. In “The Facilities Audit”, published by APPA, the Association for Higher Education Facilities Administrators, a rule of thumb for annual reinvestment rate is established as “1.5 to 3 percent of CRV” with a “preference for the upper end of the range (2.5 to 3 percent)”¹. The National Research Council states in “Stewardship of Federal Facilities: A Proactive Strategy for Managing the Nation’s Public Assets”, a target budget for reinvestment will “typically be in the range of 2 to 4 percent of the aggregate current replacement value of those facilities.”² However, because of the additional factor applied, funding is far below the 2% rate in practice. With a 15% factor applied, the actual rate of reinvestment as a percentage of replacement value is .3%. When looked at in this way, this percentage is far below the average investment by higher education institutions as reported by APPA at 1.5%.³ The two step calculation should be eliminated and actual percentages reported. Since all facilities have been underfunded for some time, it should be anticipated that funding in excess of 2% would be required to return to an acceptable state.
 - b. *Allow for site specific factors that affect replacement value and reinvestment rates* – The replacement values by Fire and Tornado Fund do not take into account several factors that influence the replacement value and the reinvestment rates. Age is not factored into the calculation. Age of the building can influence the replacement value in that older buildings with more intricate architectural detailing can be more expensive to replace. Repairs in older buildings are also more typically more expensive to execute. The percentage of the replacement value required for reinvestment for older buildings would also be higher, particularly if there is a history of deferred maintenance at the facility. This can disproportionately affect campuses with a high percentage of older structures. Additionally, location should be factored into the replacement value calculations.
 - c. *Add leased buildings to the calculation* – Many of the campuses have lease-to own arrangements for some of their buildings. Under these arrangements, the institutions are responsible for maintenance and operations and capital reinvestment at the facilities, just as they would an owned property, but these facilities are not included in the replacement values used to calculate the budgets. The institutions must stretch the already stressed budgets to include any work in these buildings. If the institution is responsible for the maintenance of a leased property, then the properties should be included in the calculation.
 - d. *Remove city assessment fees from the calculation* – Institutions are often assessed for city services by the municipalities in which they are located. These can be particularly high for those institutions in the urban settings. Currently, any assessment fees must be taken from the extraordinary repairs budget. This significantly reduces the money available for necessary repairs and replacements. In the future, these fees should be accounted for when calculating the extraordinary repairs budget.

¹ The Facilities Audit: A Process for Improving Facilities Conditions by Dr. Harvey Kaiser. Published by Association of Higher Education Facilities Officers, 1993

² Stewardship of Federal Facilities: A Proactive Strategy for Managing the Nation’s Public Assets by the National Research Council. Published by National Academy Press, 1998

³ 2012-2013 Facilities Performance Indicators Report, Published by Association of Higher Education Facilities Officers, 2013

10. *Improve reporting on deferred maintenance liability* – The amount of existing deferred maintenance recognized by the state dramatically underestimates the level. The original amount was determined in an assessment many years ago. This amount has been inflated each year, but no new liability is added each year to account for building systems reaching their end of life. Compounding the underestimation is a process whereby the costs of any projects executed is removed from the current liability in their entirety. The entire project cost is deducted – there are no provisions for exclusion of project work which is not directly related to deferred maintenance. As a result, the gap continues to widen between recognized and actual levels. In some cases, institutions have conducted their own assessments or contracted firms to determine their actual liability. In these cases, the actual can be orders of magnitude larger than reported. We recommend a new assessment be performed statewide to establish a new baseline of existing conditions. Moving forward, this value should be adjusted in three ways – to account for construction cost increases, to add any new lifecycle deterioration and to remove any deferred maintenance corrected by executed projects. In this way, the reported values will continue to reflect actual conditions.

Master Plan Submittal and Approval Process

All Universities and Colleges are required to submit Master Plans under a standardized process mandated by legislation and administered by NDUS. There are some minor variations within this process mainly due to the size of the campus and the resulting number of projects they can request.

The Master Plan for each institution is a document created for the Legislature on a common format once every six years. Between the full rewrites every six years, the Master Plan document is updated once every two years. The Master Plan submissions for the current biennium were originally scheduled to be a full rewrite, but the legislature acted to allow an update only this biennium with a full rewrite in the next biennium to allow for an examination of the current process prior to submittal of the new Master Plans.

The individual institutions submit their Master Plans to NDUS in April. NDUS then reviews the submissions and sends them forward the Board of Education. The Board of Education reviews and approves the Master Plans in July prior to submission to the OMB and selects the projects that will be recommended to the legislature for funding. The Governor also reviews the submissions in this timeframe and produces his list of recommended projects to the Legislature. The Legislature is then responsible for voting on the final list of projects to be funded in a given biennium.

Once approved for funding, a Master Plan project is administered and executed by the individual institutions. The institutions are required to report on the project progress through the SB2323 form. Until recently, the SB2323 form was due every month, but is now required every six months. Any project over \$250,000 must be included on the SB2323 form, including projects funded from sources other than state funds such as local funds or grants. Projects using local funds are often approved in a bulk fashion via consent calendar. Larger projects (over \$385,000) must be approved by and are reviewed during execution by the Budget Section.

The formula for the budget for Extraordinary Repairs is based on a formula calculated system wide. The basis for the formula is a replacement value established for each building asset by the State Fire and Tornado Fund. This figure is used to calculate the total capital reinvestment needs for each institution by multiplying the replacement values by 2%. For each institution, a percentage of the total need is allocated each year. The typical percentage applied is approximately 15%.

REVIEW OF INDIVIDUAL MASTER PLANS

Overview

Master plans for North Dakota University system campuses were obtained, reviewed and compared for similarities and differences. Additionally, interviews were conducted at each campus to provide perspective regarding the planning process and its value to the campus. Several themes emerged from this review, and this helped shape both the analysis and recommendations, which are summarized below.

For the purposes of this report, *master planning* refers to the process of determining the range of facility solutions and strategies needed for executing a strategic plan, and *capital planning* refers to the process of developing a specific facility project or set of projects.

Encourage an Integrated and Data-Driven Planning Process

In an integrated planning model, a thorough and thoughtful master plan flows from strategic plans and provides a flexible road map for constructing the facilities needed to achieve identified strategic institutional goals. These strategic objectives might pertain to such key issues as enrollment, housing, academics or research. Additionally, the master plan can be informed by other institutional plans, such as an academic plan which describes changes in programs or program delivery; an Information Technology (IT) plan which integrates with pedagogy; or a utilities master plan, to name a few.

The strategic and master planning process themselves also provide inherent benefits, such as developing broad-based stakeholder support and synergy, promoting relationship building across organizational boundaries, and the creation of shared goals. This process can strengthen support for implementation and can even help energize alumni relations and fund raising. Such a process may in fact have taken place in development of the various NDUS campus master plans, but it could not be discerned from the documentation.

Very few of the campus master plans referenced a strategic plan at the institutional level, and only two of them explicitly indicated a strong relationship of facility plans targeting specific strategic goals. Many plans referred to a need to address enrollment growth, but it was not clear if this growth was a strategic direction which had been evaluated, or if it was simply a trend to be accommodated. Additionally, none of the plans mentioned a comprehensive strategy at the university system level. Therefore, it was inferred that when a strategic plan at any level was not mentioned, one did not exist.

Consequently, in order to strengthen the culture and benefits of integrated planning, the following recommendations are made:

- The University System should engage in an inclusive strategic planning process, develop a comprehensive evaluation of higher education needs in the state, identify a vision for the future and design strategies and policies to most effectively and efficiently achieve them. Add a section in the master plan which discusses and addresses system strategic goals.
- The University System can play an important role in determining the most effective strategic alliances between institutions. Although several associations between campuses were mentioned in both interviews and master planning documents, the System Office has a unique perspective regarding all missions and strengths across the university system.

- Each campus should engage in an inclusive strategic planning process, develop a comprehensive evaluation of key issues, identify a vision for 5-10 years in the future and design institutional strategies to achieve that vision. Add a section in the master plan which discusses the institution's strategic goals, how these goals have driven the facility solutions proposed by the master plan, and any strategic partnerships which may be pursued or enhanced. Additionally, state the key planning assumptions and drivers for the master plan.
- In order to encourage a robust and focused planning process, add a narrative section to master plan requirements to discuss the planning process which was used by the campus to engage internal and external stakeholders and produce the plan. Although this is intended to be addressed in Section I-C, consider making this a separate section.
- Emphasize data collection and data driven planning decision. For example, very few plans included enrollment projections supported by projected high school graduation data and historical enrollment data over a prescribed period of time, even though the System Office guidelines request them. The NDUS could potentially help provide this high level of institutional research. Other plan drivers could involve research expenditures or other metrics (see *Identify Space Needs* section below).

Promote Consistency

There was some variance in both format and content of the campus master plans, perhaps due to differences in interpretation about what was required. This makes evaluation, understanding and comparison more challenging. However, it should also be recognized that there are significant differences in resources available for planning.

- Promote the general system-wide template with instructional narrative to be used by campuses through training and educational outreach. Provide explanation regarding the reasons for each requirement. Make this outline flexible with some items optional, in order to account for variances in mission, planning resources and circumstance.
- Consider a pre-planning conversation between each institution and the System Office as part of the standard process to clarify intent and what requirements are critical on a campus-specific basis

Identify Space Needs

Space represents one of the largest assets which a university controls and maintains. However, most plans did not include any space information and interviews indicated that this data was generally not available. Some institutions expressed interest in using the space module in FAMIS but were challenged with the resources needed to purchase and/or maintain the database. Given the value of the physical space assets and the fiduciary responsibility to maintain them, investment in space management tools and resources is merited, especially if one considers the cost of constructing new buildings. For these fiscal reasons, space inventory and management is an industry best practice.

- Facilitate development of an accurate space and classroom inventory
- Require that plans include a space utilization study or analysis
- Require that plans include a space needs analysis with a projection of space needs and clearly communicate the major drivers of facility needs (e.g., enrollment, pedagogy, deferred maintenance, housing).

Revise the Planning Process

Many campuses use a master planning horizon of five to ten years, and these plans are most effective when the propose facility solutions in response to a strategic plan. If the campus master plan provides a flexible framework for growth and change, then updates need only occur as the basic planning assumptions change. The benefit of this approach is a more effective application of limited resources over a longer period of time. However, this approach should be accompanied by a more frequent capital planning process that is updated annually to accommodate other variables, ranging from inflation, construction market conditions, grant awards, technology changes, donations, or other possible changes.

- Align master planning with long-range strategic planning horizons of 5-10 years; given the two-year biennial cycle currently in place, a horizon of six years may be appropriate
 - Develop a longer term list of potential projects for the planning horizon, subject to more detailed planning and programming as proposed below.
- Separate master planning from capital planning, and perform capital planning on an annual or biennial cycle; this capital planning approach should include the development of a scoping and programming document for each capital project which provides the basis for the capital budget requests. For new construction, capital plan documents should provide more program-specific, data driven reasons for space needs
- If a biennial cycle is used for capital planning, allow for annual updates due to inflation, program changes, market conditions and/or other factors
 - Allow for an expedited process for campus self-funded projects (e.g., funded from gifts, grants, auxiliaries, etc.)
- Separate capital program-driven projects with maintenance-driven projects and develop a separate prioritization process at the system level for each

Refine Assessments of Deferred Maintenance

Many campuses in the NDUS have a significant inventory of older buildings, whose age exceeds the generally accepted life cycle of their building systems and components. Therefore, a growing Deferred Maintenance (DM) backlog represents a serious threat to facility assets and an increasing liability to operational budgets. However, strategic reinvestment in existing facilities can not only extend the useful life of building assets but also reduce on-going operational costs through improvements such as increased energy efficiency. Comprehensive, strategic reinvestments also offer economy of scale and potential costs savings. On the other hand, neglecting building and infrastructure maintenance and running those systems to failure risk program disruption and costly, reactive repairs. A piecemeal approach to fixing systemic problems is more costly in the long run than a well-considered, data-driven systemic approach. Finally, comprehensive DM planning, when combined with a strategic master planning process, may result in the most optimal facility solutions which can address both maintenance issues and also program needs. To assist in this effort, several suggestions are offered:

- Define the Backlog: The System office could define a standard process by which the backlog could be calculated and annual budget requests could be benchmarked with industry recommendations. (This could either be developed by estimating projects, facility assessments or a percentage of current replacement value). This process should also define a standard calculation for current replacement value (CRV), since many of the accepted industry practices recommend annual funding levels as a percentage of CRV. Metrics, such as the DM backlog, become valuable talking points in communicating with Board and legislative officials.
- Facility Audits: Many campuses felt that the current system of facility audits provided a useful tool for campus planning and maintenance. However, it was widely acknowledged that the evaluation process was highly subjective. Investment in an external, third party review should be considered by the system

office as a way to develop a more objective evaluation of maintenance needs. An alternate approach would be to hire technically qualified, professional staff at the System Office to serve as both a resource for the campuses and a consistent judge of facility conditions across the System. Having an impartial review becomes particularly important if a separate maintenance funding process is adopted. Some objective metrics for both average facility age and condition become valuable talking points for communicating with Board and Legislative officials.

- Projects: Encourage thorough project planning, scoping, and budgeting for maintenance-driven projects, as well as program-driven new capital projects, using a standard template for funding requests.
 - Furthermore, allow requests for campus-wide projects to address similar issues in multiple buildings; this will create economies of scale and cost savings. Examples might include campus wide projects for roofing, building control retrofits, fire alarm panel upgrades, sprinklering of buildings, elevator replacements, etc.
 - Allow for funding requests for engineering studies.
- Integrate facility assessment information in the capital planning process to inform scope and budgets for renovation (or demolition) budgets; update annual capital requests with periodic evaluations of maintenance issues related to the facilities to be renovated.
- Include a campus wide evaluation of energy use and potential for cost savings with energy efficiency strategies; simple strategies such as metering each building are an important step for making data driven assessments of building performance. This could potentially be an initiative funded system wide to reduce long term operating costs.
- Since any deficiencies in the areas of fire and life safety represent great liability and exposure, highlight these areas in the facility assessment; specific areas to highlight could include means of egress, smoke detection, fire alarm infrastructure among others.

Design, Construction and System Standards and Metrics

Construction standards are not typically included in master plans except by reference, but they can serve as important tools for the campus to ensure long term quality, ease of maintenance, availability of parts and compatibility of materials and systems. Design standards can help unify the aesthetic appearance and aid in recruitment, since APPA studies have documented the impact of impressions about the physical environment in the decision making process of prospective students. Additionally, design standards can also play a role in long term operating and life cycle costs of buildings. Finally, the System Office can potentially play a role in establishing consistency in software systems, IT protocols, and large volume discounting of building materials.

- Promote the development of campus and, where appropriate, System level standards for construction materials. Large volume discounts for carpeting, furniture or other items may be possible, if these are not currently available.
- Consider best practices in sustainable design and budget projects accordingly. Many “green” practices are based on common sense and shift the focus from first cost to the true life cycle cost of materials and building systems. The decisions made during the planning and design process will impact operating budgets for decades, so reasonable goals for a return on investment (ROI) can have positive, long term financial implications.
- The University System Office is in a unique position to ensure consistency of software systems and protocols, but central funding sources may be needed. For example, many campuses had some level of implementation of the FAMIS work order system, but did not have the resources to either purchase the space and capital projects modules, implement the software migration, and/or populate and maintain the databases. There was also inconsistency about how the classroom Scheduling software, Ad Astra, was implemented and that database maintained and updated. Finally, it was noted that significant investments had been made at the System level regarding IT systems and data center resources, but these were not fully utilized. This could be particularly critical in the area of distance learning, since significant enrollment of both resident and non-resident learners appeared to be a strategic goal of several campuses.

- Develop standard campus metrics. As noted elsewhere, deferred maintenance backlog and average age of buildings are two potentially important metrics. Certainly enrollment, total net and gross square footage of buildings, number of buildings, and acreage of campus property are others. These metrics should be standardized in institutional profiles and reported.
- Finally, it should be noted that there appears to be variance with regard to if and how building codes are applied and enforced through plan reviews and/or inspections. Consistent code compliance should be a system-side goal and policies or procedures should be put into place to ensure that both renovation work and new construction meet all applicable code requirements.

5 | REVIEW OF INDIVIDUAL MASTER PLANS

Master Plan Components		UND	NDSU	Valley City	Mayville	Minot State	NDSCS	Lake Region	Bismarck	Dakota/Bottineau	Williston	Comments
Consultant		1-JLG	1	JLG	EAPC	1	1	JLG	EAPC	Huntr Grobe	JLG	
I Background												1-Plan and/or edits to previous master plan prepared by staff
a	History											
b	Vicinity											
c	Previous Master Plan Efforts				1	1	1	1	1	1	1	1-Not a detailed description as per some other campus plans; MSU included older plans in appendices
d	Master Plan Process	1	1	1	1	1	1	1	1	1	1	1-A more detailed description of planning process, internal/external engagement could be added
e	Recent Accomplishments											

ADD: Institutional Information and Goals

1	Mission			1	1			1				1-Only general reference to mission in Section Ia (History)
2	Strategic Plan (SP)	1		1			1	1	1	1		1-Only general reference to SP (sometimes noted in Section III) or a Vision Plan
3	Academic Programs											1-Academic program descriptions are provided or future programs needs are described in Section I or IIIa; but specific academic plan not evident; in evaluating technical job training needs, more industry data can be helpful
4	Enrollment Trends and Analysis	1	2	1	1	1	1	1	1	1		1- Some of this data is found in either Sections I or IIIa; Data-driven enrollment projections beyond 2014 into future may not be provided for next 5 yrs
5	Research Trends and Analysis			NA	NA	NA	NA	NA	NA	NA	NA	If applicable

ADD: Existing Facilities Documentation/Analysis

6	Space Inventory											
7	Space Utilization											
8	Space Needs											
9	Average Age of Space Inventory											

II Existing Conditions

a	Landscaping and Grounds			1								1-Missing some components (sprinkler, lighting, etc)
b	Buildings (Layout/Map/Condition)	1	1	1	1	1	1	1	1	1	1	Facility Condition Assessment is 1-3 scale per system
c	Circulation (Internal/External)											
d	Infrastructure											
	Energy Utilities (Steam/CW)	1	1		1				1		1	1-Evaluate existing condition and expansion capacity
	Civil Utilities (Sanitary/Storm)	1	1		1				1		1	1-Evaluate existing condition and expansion capacity
	Electrical and Ltg Infrastructure	1	1	2	1	1,2			1		1,2	1-As above; 2-No Lighting inventory or evaluation
	Telecom/Information Technology	1	1	1	1						1	1-Eval exist condition and/or expansion capacity/fut technology
	ADD: Fire/Life Safety Systems											POSSIBLE ADD (building narratives may have included)
f	ADD: Parking Lot Condition											POSSIBLE ADD

III Future Campus Requirements

a	Academic Programs	1	1	1	1	1		1	1	1		1-Trends supported by data or figures by dept/discipline would be helpful; see also ADD#4 above
b	Academic Facilities	1	1	1	1	1		1	1	1		1-Narrative discussion general or very general
c	Support Facilities	1	1	1	1	1		1	1	1		1-Narrative discussion general or very general
d	Auxiliaries	1	1	1	1	1		1	1	1		1-Narrative discussion general or very general
e	Athletic and Rec	1	1	1	1	1		1	1	1		1-Narrative discussion general or very general
f	Parking	1	1	1	1	1		1	1	1		1-Narrative discussion general or very general
g	Infrastructure	1	1	1	1	1		1	1	1		1-Narrative discussion general or very general
h	Land acquisition/disposition											

IV Capital Projects

	Future Project List	1										1-School of Medicine only
	Budget Requests	1										1-School of Medicine only
	ADD: DM Projects					2	1				1	1-Although not a DM separate list, the projects do reflect DM needs; 2-List included from previous plan

■ Not included or not found
■ Partially included
■ Included

General Notes and Observations

1 Consistency

There are differences in the way that various master plan elements are addressed. For example, there are some items such as parking or utility systems which are described but not evaluated in terms of condition or capacity

2 Amount of Detail

Some items may merit more detailed explanations or evaluations, such as lighting, ADA and fire/life safety systems, which represent areas of potential risk and liability; System Office guidelines could clarify priorities for responses

General Notes and Observations

3 Engineering Studies

References are sometimes made to engineering studies, such as for utilities or other items; perhaps these could be made available on line; overall the use of separate studies can provide tremendous expertise on technical issues or ones which may be subject to new or evolving technologies

4 Redundancy

It may be possible to combine some maps, particularly for the smaller institutions, such as road/circulation maps and functional maps

5 Facility Needs

In most cases, Section III, "Future Campus Requirements" was general in nature and could have specified a longer term list of potential projects

6 Project Requests

Project requests were not compared and reviewed or analyzed in any detail within the scope of this work

Other Related Plans

Generally, the master plan can benefit from other periodic plans, such as the ones listed below. Often, outside consultants can provide valuable technical expertise in areas, particularly involving engineered systems such as energy or IT.

- Allow capital funding requests for planning studies; perhaps fund planning efforts separately from projects and maintenance with funds set aside specifically for that purpose.
- Academic Plans: The academic enterprise is the “*raison d’être*” for the institution and merits periodic assessment and planning. This academic planning can be conducted prior to, or in parallel with, the institution’s strategic planning but is certainly needed for accreditation. This should inform which programs grow, change, get added or removed, in addition to determining the pedagogy and its implications for physical learning environments and facilities.
- Energy Utility plans: Energy master plans can be produced by consulting engineers and can also include an evaluation of energy efficiency upgrades
- Civil Utility Plans
- IT Plans
- Auxiliary Plans (e.g., Housing, Athletics)
- Others
 - Sustainability Plan
 - Parking Lot Condition Surveys
 - Exterior Lighting Photometric Studies

CAPITAL REQUEST EVALUATIONS

The North Dakota University System (NDUS) has a master planning process in place. In other sections of this report, that process is evaluated and recommendations are provided.

The master plan serves as the main identifier of capital projects for the System. Every six years a detailed master plan is developed, and in the interim two year segments, a capital planning update is done which supplies the capital budget requests for that biennium. The System has identified a large amount of deferred maintenance, which has been analyzed in-depth in this report. The deferred maintenance is a critical need for NDUS. The System has struggled with how to rank competing requests from multiple institutions. In the past, there has been an understanding that up to two requests could be put forward each biennium by the nine smaller institutions and three requests from the two research universities. Since only a small amount of the requests have been funded, this has led to frustration with the process and concern that specific critical items were being unfunded for long periods of time.

Ranking Approaches

Macro-Level Needs Analysis

In statewide master plan reviews conducted by the consultant in other states and with other systems, one ranking approach that has been successfully used is a macro-level analytic that takes a dozen or so major space types typical on a given campus within the educational and general space normally funded by the State and gives the campus a per student target number based on experience from other institutions. The type of institution and unique system objectives, such as classroom and laboratory utilization targets, that may be set are also taken into consideration.

Use of this approach results in a need or surplus analysis at current and agreed-to target years for each major space type and an overall figure for each campus. These can be analyzed both as total square footage and as percentage of need. This is a helpful tool in determining whether a specific institution shows needs based on these metrics in the categories for which they are requesting space.

The consultant has attempted to implement this type of approach for NDUS; however, an obstacle was encountered early in the process. Facilities room inventory data was not available at most of the institutions. As part of the campus visits conducted by the consultant, the two universities were able to provide facilities data. Minot State University had a file developed by a consultant who was serving as the campus' facilities management director. Existing information from these three institutions is shown in this report to indicate how this process could be implemented across the NDUS. Before such a process could be implemented, the other eight institutions would need to develop (or have developed for them) a room-by-room facilities inventory.

University of North Dakota
Fall 2013 Hdct 12,123
Fall 2013 FTE 12,606

	Classroom & Service	Teaching Labs & Service	Open Labs & Service	Research Labs & Service	Academic Offices & Space	Admin Offices & Space	Library	Assembly & Exhibit	Health Care Facilities	Other Academic Space	PE & Recreation	Student Center	Physical Plant	Residence Life	Total ASF
ASF/Hdct	15	10	9	19	60	1	14	9	3	5	17	26	44	86	317
ASF/FTE	14	10	8	18	58	1	13	9	3	5	16	25	42	83	305
Total ASF	175,993	125,386	105,968	231,410	726,838	12,597	169,668	108,349	36,009	61,210	202,174	317,180	529,418	1,041,958	3,844,158

6 | CAPITAL REQUEST EVALUATIONS

North Dakota State University

Fall 2013 Hdct 13,672
Fall 2013 FTE 12,797

	Classroom & Service	Teaching Labs & Service	Open Labs & Service	Research Labs & Service	Academic Offices & Space	Admin Offices & Space	Library	Assembly & Exhibit	Health Care Facilities	Other Academic Space	PE & Recreation	Student Center	Physical Plant/ Support Facilities	Residence Life	Total ASF
ASF/Hdct	11	9	4	23	39	1	8	10	1	5	9	19	7	44	189
ASF/FTE	11	10	4	25	42	1	8	11	1	5	9	20	8	47	202
Total ASF	146,304	122,257	51,515	319,063	531,191	8,207	105,890	140,600	14,367	66,467	120,385	258,009	101,705	604,193	2,590,153

Minot State University

Fall 2013 Hdct 3,533
Fall 2013 FTE 2,710

	Classroom & Service	Teaching Labs & Service	Open Labs & Service	Research Labs & Service	Academic Offices & Space	Library	Assembly & Exhibit	Health Care Facilities	Other Academic Space	PE & Recreation	Student Center	Residence Life	Total ASF
ASF/Hdct	18	16	6	1	40	15	15	2	3	18	6	27	168
ASF/FTE	23	21	8	2	52	20	20	2	4	24	8	35	219
Total ASF	62,245	57,284	21,156	4,309	142,178	53,495	53,107	6,594	10,226	64,009	21,871	95,829	592,303

All space categories are shown in the tables above. In a future modeling exercise, Residence Life, and possibly PE & Recreation and Student Center, would be removed.

The calculations made of existing space per student for each of the categories would be compared with a square foot per student number that the consultant recommends for that institution and that category. This would be based on the consultant's knowledge of what similar institutions are doing, an understanding the specific role and mission of the North Dakota institutions and providing institution-specific findings within the broad categories of two-year, four-year, and research university institutions. In some cases in North Dakota, there may be extra capacity because of low enrollment that would show a higher than usual finding for one of these categories. For example, the classroom category at Minot State University seems quite high. Upon further review, the metric used might well be a significantly lower one, which would reflect there is an additional capacity to serve more students. Since only three institutions were able to provide this level of information, this approach, which is highly favored by a number of statewide jurisdictions, could not be implemented at this time.

Classroom Utilization

Another approach attempted was classroom utilization. Since the course information is all collected so student credit hours can be tabulated, the hope was that the consultant's software could allow an analysis of classroom utilization. The difficulty occurs when course information is not balanced with a room record for each space to clarify which rooms are classrooms and preferably, would include the room capacity. This would allow the weekly room hours to be tabulated and the percent of seats occupied when courses are held. The consultant did a preliminary analysis, reviewed it during the campus visits, and concluded the room information, as reported in the course records, was not reliable. Therefore, draft information is not being provided.

The consultant strongly urges NDUS to have the institutions develop a room inventory to include the classrooms. It would allow utilization to be calculated, including only those rooms that are defined as classrooms and would allow a determination to be made as to whether there is significant additional capacity on some or all of the campuses, or whether the use of classrooms is strong. During the past couple of decades, there has been a tendency in those jurisdictions that do classroom utilization to increase their targets from a historical number of 30 hours per week to amounts ranging from the mid-30s to as much as 40 hours per week. These are very aggressive and difficult utilization targets to achieve across an entire campus.

Campus Space

The facilities information that could be provided across the System was gross square feet by building. This was divided into three categories:

- Type I – Direct Academic Space
- Type II – Other State Supported Space
- Type III – Auxiliary Space

Paulien & Associates prepared a chart that showed the gross square footage (GSF) of the different categories. The total of Types I and II is most applicable for this kind of analysis. Since this analysis is usually done in assignable square feet (ASF), the consultant is using 65% of the GSF to approximate the ASF, which is the percentage recommended by the NDUS project manager. In the consultant's experience, the percentages for campuswide ASF/GSF efficiency have ranged from the low 60s to the high 60s. The balance of the space making up GSF is in building circulation, restrooms, and mechanical spaces, as well as wall thickness.

In discussing these findings informally during site visits, the consultant noted that these enrollment figures represented the entire academic effort of the institution. A substitution for headcount was made of a column that reflects on-campus, unduplicated, face-to-face headcount. Some institutions stated there are other students who should be added to this number. NDUS is urged to look to whether additional reporting tables should be developed to more accurately reflect the onsite instruction. There were no tables that allowed the consultant to get a similar on-site only FTE; therefore, a complete FTE from Table 6 (see footnote in table below) was used. The consultant thought it would be helpful to show the information for both categories in one table for comparison purposes. The findings are shown in the table below.

GSF by Headcount and by FTE

Institution	Abbr.	Facilities Data Space Type			Type I + II GSF	Type I+II+III GSF	Fall 2013		GSF/ I		GSF/ I+II		GSF/I+II+III	
		Type I GSF	Type II GSF	Type III GSF			Head- count	FTE	Head- count	FTE	Head- count	FTE	Head- count	FTE
Bismarck State College	BSC	324,739	35,896	81,210	360,635	441,845	2,375	2,955	137	110	152	122	186	150
Dakota College at Bottineau	DCB	131,919	13,055	66,564	144,974	211,538	396	502	333	263	366	289	534	421
Lake Region State College	LRSC	130,821	46,057	52,140	176,878	229,018	450	943	291	139	393	188	509	243
North Dakota State College of Science	NDSCS	643,558	148,806	470,136	792,364	1,262,500	1,599	2,295	402	280	496	345	790	550
Williston State College	WSC	213,115	7,264	43,632	220,379	264,011	487	593	438	359	453	372	542	445
Dickinson State University	DSU	289,415	180,537	171,023	469,952	640,975	1,088	1,201	266	241	432	391	589	534
Mayville State University	MaSU	197,672	64,066	92,830	261,738	354,568	583	749	339	264	449	349	608	473
Minot State University	MiSU	688,467	120,522	223,532	808,989	1,032,521	2,384	2,710	289	254	339	299	433	381
Valley City State University	VCSU	261,294	100,869	144,870	362,163	507,033	801	975	326	268	452	371	633	520
North Dakota State University	NDSU	1,830,610	400,329	1,652,425	2,230,939	3,883,364	13,672	12,797	134	143	163	174	284	303
University of North Dakota	UND	2,546,398	1,130,624	2,514,858	3,677,022	6,191,880	12,123	12,606	210	202	303	292	511	491
Total:		7,258,008	2,248,025	5,513,220	9,506,033	15,019,253	35,958	38,326						

ASF by Headcount and by FTE

Institution	Abbr.	Facilities Data Space Type			Type I + II ASF	Type I+II+III ASF	Fall 2013		ASF/ I		ASF/ I+II		ASF/I+II+III	
		Type I ASF*	Type II ASF*	Type III ASF*			Head- count	FTE	Head- count	FTE	Head- count	FTE	Head- count	FTE
Bismarck State College	BSC	211,080	23,332	52,787	234,413	287,199	2,375	2,955	89	71	99	79	121	97
Dakota College at Bottineau	DCB	85,747	8,486	43,267	94,233	137,500	396	502	217	171	238	188	347	274
Lake Region State College	LRSC	85,034	29,937	33,891	114,971	148,862	450	943	189	90	255	122	331	158
North Dakota State College of Science	NDSCS	418,313	96,724	305,588	515,037	820,625	1,599	2,295	262	182	322	224	513	358
Williston State College	WSC	138,525	4,722	28,361	143,246	171,607	487	593	284	234	294	242	352	289
Dickinson State University	DSU	188,120	117,349	111,165	305,469	416,634	1,088	1,201	173	157	281	254	383	347
Mayville State University	MaSU	128,487	41,643	60,340	170,130	230,469	583	749	220	172	292	227	395	308
Minot State University	MiSU	447,504	78,339	145,296	525,843	671,139	2,384	2,710	188	165	221	194	282	248
Valley City State University	VCSU	169,841	65,565	94,166	235,406	329,571	801	975	212	174	294	241	411	338
North Dakota State University	NDSU	1,189,897	260,214	1,074,076	1,450,110	2,524,187	13,672	12,797	87	93	106	113	185	197
University of North Dakota	UND	1,655,159	734,906	1,634,658	2,390,064	4,024,722	12,123	12,606	137	131	197	190	332	319
Total:		4,717,705	1,461,216	3,583,593	6,178,921	9,762,514	35,958	38,326						

Source: NDUS 2013 Fall Enrollment Report, November 2013, Table 9B-Column B for Headcount, Table 6 for FTE

* GSF converted to ASF using 65% factor

The space per student for the Type I + II spaces seems high for most of the two-year and four-year campuses compared to findings in similar studies. Having the breakdowns by type of space would help to clarify that observation. This could reflect capacity to serve more students onsite and, in some cases, a strong mix of vocational and technical programs, which are space dependent.

Criteria

Another process that can be utilized is the development of criteria. In essence, the NDUS has done this in its current ranking criteria found in the *SBHE Policies and Procedures, Subject: 900s: Facilities, Section 902.1 Construction. Process-Legislative Approval, List of Funding Requests, Item 7:*

7. The Board shall use the following criteria to determine a rank order of projects listed. These criteria are not weighted, but shall be considered in their totality when determining rank order of priorities.
 - a. Project addresses current life, health and safety issues.
 - b. Project addresses compliance with local, state or federal law or other requirements.
 - c. Project corrects significant deferred maintenance.
 - d. Project addresses a critical maintenance need defined by situations which must be addressed, and which, if neglected, could result in substantial damage to the structural integrity of the building.
 - e. Project meets a compelling programmatic or accreditation justification consistent with campus mission and strategic goals.
 - f. Project has been partially funded by the legislature in a previous biennium, but is not yet complete.
 - g. Project is supported by significant outside funding.
 - h. Space will be used to advance a specific program or activity that is a high priority of the state.
 - i. Project addresses an urgent infrastructure need.
 - j. Project is consistent with campus master plan and is highly rated by the campus.
 - k. Project is necessary based on clearly demonstrated condition of existing space.
 - l. Project fosters the consolidation of services or enhances operating efficiencies.
 - m. Project enables the institution to remove obsolete or unnecessary facilities.

The problem with this approach is that the life, health, and safety category can consume a higher dollar value than the State can fund. Therefore, over several biennia, it could block all other types of projects. The dilemma is that life, health, and safety projects can have a range of impacts, from situations that are actually life-threatening to those scenarios that have minimal threats but still meet the threshold of life, health, and safety because of code requirements or other regulatory obligations.

The consultant will now discuss a process that has been used in another State. This approach used a number of factors ranging from how recently a particular campus had done capital development to issues relating to population and workforce needs within their service area, to issues relating to their facilities quality and quantitative need for facilities.

An alternate or additional approach to the space needs modeling is the use of criteria to measure the importance of a project within an institution's service area. This method works most effectively when there is population or employment growth that requires additional educational support. Here are the types of criteria that have been utilized with possible North Dakota sources:

- a) 2000-2010 population change (North Dakota Department of Commerce, "NDDC")
- b) 2010-2013 population change (Census and NDDC)

- c) 2015-2025 population projections (Census and NDDC)
- d) NDUS county participation rates (Strategic Facilities Study)
- e) High School graduates participation rates in the two-year sector (North Dakota Dept of Public Instruction)
- f) Long-Term Occupational Projections of employment growth by Economic Growth Region (North Dakota Workforce Intelligence Network, "NDWIN")
- g) Total annual employment openings by Economic Growth Region (NDWIN)
- h) Classroom and Laboratory utilization by campus (not currently available)
- i) Space needs modeling by campus (not currently available)
- j) Readiness Analysis, e.g. having matching funds for projects where required (NDUS)

In the Spring of 2014, NDUS took the existing criteria, slightly refined them, and began to produce a weighting and scoring formula to allow individual projects to be ranked. The consultant strongly supports the NDUS effort as an important approach that could have ongoing utility with criteria added to reflect the amounts of space in key categories and the intensity of utilization of instructional spaces.

Summary

None of these approaches, with the exception of the campuswide space amounts, can be implemented at this time. The eight NDUS institutions that do not currently have a room inventory need to develop one. This could either be done in a consulting assignment, with one consulting firm developing the inventories to provide consistency in interpretation of facility room use codes, or institutions can be tasked with producing this inventory using a set of instructions and with the understanding that having accurate information is critical to their capital requests.

The consultant sees more use of the space needs modeling approach than of the detailed criteria approach. If the room inventories can be developed, the consultant can provide criteria that would fit the North Dakota institutions. Because the mission, size, and historical patterns are different, a model needs to be developed specifically for each particular institution to be effective.

Since the information is not currently available to allow the space needs modeling approach to be implemented, continued use of the criteria appears to be the most effective short-term approach. The consultant strongly supports the efforts of NDUS to develop weighting and scoring for a refined group of criteria.

RESEARCH AND DEVELOPMENT ISSUES

NCHEMS looked at research expenditures – total and federally funded – for the University of North Dakota (UND) and North Dakota State University (NDSU) and a set of previously selected peer institutions. The data used were total dollar amounts by academic discipline, as well as the percent distribution across disciplines for each institution. These data are being provided in the appendices. It should be noted that both North Dakota Universities have substantially fewer faculty than almost all of the selected peers.

Major Findings

- Both UND and NDSU showed a larger percentage increase in research between FY 05 and FY12 than most of their peer/aspirant institutions.
- Both have just over half the faculty size of the average of the peers/aspirants.
- UND has relatively low research dollars in comparison to its selected peer institutions. This is true in total and on a per faculty member basis.
- UND does relatively little research in the life sciences in spite of the fact that it has a medical school. This reflects the fact that UND's medical school is heavily focused on education practitioners, not doing research.

Research Expenditures per Full-Time Faculty

Institution	Research Expenditures 2011-12	Full-time Faculty 2011-12	Res/Fac 2011-12
University of North Dakota	\$ 64,395,627	583	\$ 110,456
University at Buffalo	\$ 146,379,281	1,064	\$ 137,575
The University of Tennessee	\$ 288,960,091	1,641	\$ 176,088
University of Alabama at Birmingham	\$ 267,768,714	852	\$ 314,283
University of Hawaii at Manoa	\$ 349,810,227	1,107	\$ 315,998
University of Illinois at Chicago	\$ 295,835,679	1,197	\$ 247,148
University of Kentucky	\$ 293,322,717	1,344	\$ 218,246
University of Louisville	\$ 161,309,000	917	\$ 175,909
University of Missouri-Kansas City	\$ 21,245,740	748	\$ 28,403
University of Nevada-Reno	\$ 67,710,852	606	\$ 111,734
University of North Carolina at Chapel Hill	\$ 505,114,678	1,686	\$ 299,594
University of Pittsburgh-Pittsburgh Campus	\$ 689,599,315	1,744	\$ 395,413
University of Utah	\$ 285,155,000	1,300	\$ 219,350
University of Vermont	\$ 100,609,000	594	\$ 169,375
University of Virginia-Main Campus	\$ 344,879,795	1,147	\$ 300,680
Wright State University-Main Campus	\$ 30,466,430	680	\$ 44,804
UND PEER AVERAGE:	\$ 256,544,435	1,108	\$ 210,307

NOTE: All table data from IPEDS Finance & Faculty Survey

- NDSU is more in line with its peers/aspirants on an absolute dollar basis and does well in comparison on a per faculty member basis (3rd out of 16).
- More than half of the NDSU research dollars have come in the agriculture field.

Research Expenditures per Full-Time Faculty

Institution	Research Expenditures 2011-12	Full-time Faculty 2011-12	Res/ Fac 2011-12
North Dakota State University-Main Campus	\$ 104,817,361	580	\$ 180,720
Clemson University	\$ 143,763,968	1,013	\$ 141,919
Iowa State University	\$ 195,437,144	1,320	\$ 148,058
The University of Tennessee	\$ 288,960,091	1,641	\$ 176,088
University of Alaska Fairbanks	\$ 144,775,836	434	\$ 333,585
University of Arkansas	\$ 124,764,860	995	\$ 125,392
University of Connecticut	\$ 162,921,174	1,336	\$ 121,947
University of Delaware	\$ 135,078,512	1,131	\$ 119,433
University of Idaho	\$ 85,337,711	543	\$ 157,160
University of Kentucky	\$ 293,322,717	1,344	\$ 218,246
University of Maine	\$ 68,519,000	587	\$ 116,727
University of Nebraska-Lincoln	\$ 197,234,216	1,124	\$ 175,475
University of Nevada-Reno	\$ 67,710,852	606	\$ 111,734
University of Rhode Island	\$ 98,919,028	690	\$ 143,361
University of Vermont	\$ 100,609,000	594	\$ 169,375
University of Wyoming	\$ 90,235,665	749	\$ 120,475
NDSU PEER AVERAGE:	\$ 146,505,985	940	\$ 158,598

NOTE: All table data from IPEDS Finance & Faculty Survey

Summary

Leef Consulting Group reviewed the R&D (research and development) expenditures at NDSU and UND.

Rank	Institution	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
128	ND State U.	93,003	102,412	103,248	104,505	107,337	116,327	114,260	126,419	134,064	135,493
163	U. ND	42,205	49,864	47,024	56,301	63,298	65,185	71,858	76,560	74,882	80,149

Federally financed higher education R&D expenditures, ranked by all federal R&D expenditures, by federal agency: FY 2012. Source: NSF, National Center for Science and Engineering Statistics

National Science Foundation (NSF) data indicates that in the six year period 2007-2012, R&D expenditures at both institutions grew at similar rates between 26%-28%. During the period of 2007-2011, graduate FTE enrollment at NDSU grew from 980 to 1143, an increase of 16%. (Graduate enrollment figures were not provided in the UND master plan). In the ten year period listed in the table from 2003-2012, R&D grew 45% at NDSU and 90% at UND.

Additional surveys and research compared the Facilities and Administration (F&A) rates of UND and NDSU with other universities. When compared with a sample of other land grant universities, many of which are located in the northern and Midwestern regional areas, the NDSU F&A rate of 45% was above the other twelve institution average of approximately 43.3% but below the average of 50.2% for seven other universities.

The UND F&A rate of 38% was considerably lower than the 50.2% average of the seven other non-land grant universities surveyed. However, those seven universities represented a wide variety of institutions, with F&A rates ranging from 37% to 60%. This exercise indicates that UND rates are at the low end of the spectrum.

Figure 2: F&A Rate Comparisons

UNIVERSITY	ORG RES F&A RATE	RESEARCH EXPENDIT (\$M)	COGNIZANT AGENCY	COMMENTS
Land Grant Universities				
North Dakota State	45.0%	\$ 135.5	HHS	
Utah State	38.8%	\$ 174.0	ONR	
Wyoming	41.5%	\$ 57.0	HHS	
Montana State	44.0%	\$ 126.0	HHS	
South Dakota State	45.0%	\$ 70.0	HHS	5% Research Pool; 32% to Deans
University of Idaho	45.3%	\$ 96.0	HHS	
Colorado State University	48.7%	\$ 330.0	HHS	
Iowa State	50.0%	\$ 267.0	HHS	
Kansas State	50.0%	\$ 169.0	HHS	
Washington State	51.0%	\$ 405.0	HHS	incl Vet School
Minnesota	52.0%	\$ 826.0	HHS	57% DOD rate
Michigan State	53.5%	\$ 454.0	HHS	
Other Universities				
University of North Dakota	38.0%	\$ 80.1	HHS	
South Dakota Mines	37.0%	\$ 32.0	HHS	
Idaho State	47.0%	< \$27.0	HHS	
Colorado School of Mines	49.8%	\$ 48.0	ONR	Return % to Research Ctr or Depts
University of Iowa	51.0%	\$ 443.0	HHS	8% on state and federal block grants
University of Colorado Boulder	52.0%	\$ 360.0	HHS	Return % to Research Ctr or Depts
University of Colorado Denver	54.5%	\$ 400.0	HHS	
Rensselaer Polytechnic Institute (RPI)	60.2%	\$ 70.0	ONR	

Sources: University websites and interviews; NSF National Science and Engineering Statistics; Wikipedia list of public land grant universities

As the name implies, the federal indirect cost recovery rates have two components: administrative costs, which are capped at 26%, and the facilities costs, which make up the balance. Therefore, the facilities rate for NDSU is approximately 19% (45%-26%) and only 12% (38%-26%) for UND. Since the Facilities portion of the rate is variable, this is the portion which an institution can affect. Therefore, an examination of the components of the Facilities calculation may merit study to determine how these factors can be improved. Two key components are discussed in the following text.

Buildings

The buildings rate accounts for interest on debt and depreciation. In the first case, the greater the debt and interest, the greater the rate. Depreciation is calculated on the amount of square footage used for research, so the larger the space figure, the larger the depreciation and the larger the rate allocation. There are two notable points in this regard. First, it is critical to develop and maintain an accurate data base, which measures space to the maximum extent allowed. Secondly, in order to maximize the research space inventoried, it may be useful to allocate appropriate percentages to space which may be used for both academic and research functions. This may require that additional data fields be added and populated in the space data base to fully capture full and partial research space inventory.

Operating and Maintenance (O&M)

Direct expenses under the capitalization threshold can be fully included in the calculation; otherwise maintenance costs over the threshold need to be depreciated. Consequently, the more funds expended on O&M, the better the F&A rate.

Another important consideration is the institution's research funding profile which identifies the variety of sources for R&D expenditures. Not all grants are supported with federal funds and subject to indirect cost recovery at the negotiated F&A rates. Other sources include state grants and private sector research sponsorship. Some Universities will attempt to enforce a uniform rate administration across the board, but this may be complicated by state laws or policies.

Additionally, each institution may have formal or informal policies by which some of the indirect cost recovery is returned to the research center, the department or the individual principal investigator. These practices can significantly affect the institution's financial benefit from research activity. It should be noted that these practices can also incentivize PI's and impact recruitment.

There are consultants who specialize in providing detailed analyses of an institution's F&A rates and recommendations for improvements.

IT INFRASTRUCTURE

Introduction

In February 2014 the North Dakota University System (NDUS) retained Paulien & Associates, Inc. to prepare a campus strategic plan. A portion of that planning effort included a high level review of current NDUS IT shared services, the current direction of NDUS IT, and recommendations of how NDUS can best serve the needs of the campuses and provide centralized/enterprise IT services that will be either more efficient or effective. To conduct this IT portion of the project, Paulien & Associates retained the services of Vantage Technology Consulting Group.

Scope of Work and Methodology

To meet the requirements of the project within the funding allocation to the IT portion of the project, Vantage used the following streamlined methodology. It should be noted that the result is a high-level “snapshot” of the IT situation at NDUS and list of immediate recommendations and other areas which should be studied further as part of the IT planning effort.

1. Kick-off meeting by phone to review project goals, attendees, schedule, desired outcomes, and information to be gathered by NDUS (item 2 below).
2. Data gathering/analysis – Vantage supplied NDUS with a list of desired background information to be gathered from NDUS and the campuses, primarily service catalog information listing the services provided to the users, systems used to provide those services, and comments and observations about the provision of those services. Vantage used the information provided to understand the specific technology situation at NDUS and the campuses and better lead the video conference discussions.
3. Vantage prepared interview guides and provided eight 2-hour video conference meetings with NDUS, campus CIOs, and other IT representatives. Areas of discussion included:
 - NDUS shared services and services that might benefit from being centralized and shared
 - Opportunities for Cloud or Software as a Service
 - Challenges and opportunities for shared services and how they might affect and be affected by:
 - Staff resources
 - Infrastructure
 - Budgets and funding
 - Customer service and support
 - Overall NDUS direction
 - Campus attitudes toward shared services
4. Vantage conducted follow-up discussions with NDUS to discuss and explore issues raised during the video conferences.
5. Vantage prepared a report of findings. The *Findings* section of this chapter documents findings from the video conference meetings and data gathered and provides a high-level overview of the challenges, opportunities for shared and centralized services for NDUS and the campuses, and areas of concern. The *Recommendations* section of this chapter identifies issues that merit further in-depth review, suggested next steps, identified ‘quick wins’, and any recommendations.
6. This report is paired with a brief video conference discussion with NDUS on the report and the findings.

Video Conference Interviews

Vantage conducted seven video conference interviews with the following institutions. The number of interviewees ranged from one to six people per interview.

- 4/21 NDUS Core Technology Service (CTS)
- 4/21 UND and Lake Region State College
- 4/22 Mayville State University and Valley City State University (Scheduled, Mayville did not attend)
- 5/02 NDSU
- 5/02 Minot State University and Dakota College at Bottineau
- 5/05 Bismarck State College and Dickinson State University
- 5/05 North Dakota State College of Science and Williston State College

Interviewee Concerns and Findings

Recurring Themes and issues

As Vantage met with representatives from NDUS and the eleven campuses that make up the North Dakota University System, we found that there were some recurring issues and themes that were constant across most if not all of the interviews. Campus satisfaction with NDUS shared services varies greatly by institution and by service. The institutions that make up the System are incredibly varied in terms of size, needs, technical savvy, resources, etc. resulting in a situation where “one size” can rarely fit all. This being said, *it is important to note at the outset that NDUS IT is under new leadership and the new leadership recognizes and understands that where they are is not where they should be or want to be.* Consequently, the new leadership is assessing problems and potential solutions and this report is an important part of that project.

On the positive side, interviewees were quick to point out that many aspects of technology on the campuses would not exist were it not for shared services and NDUS funding. Many of the campuses could not afford these services otherwise. Examples included the ERP systems and various master software licensing agreements. PeopleSoft, STAGEnet, ODIN, and ConnectND were all cited as examples of shared services that generally work well. The State-wide backbone is seen as robust and reliable.

High Level Overview of Challenges/Opportunities for Shared and Centralized Services

It is interesting to note that most of the areas of concern expressed by the interviewees were not about the technical aspects of the services per se but about areas related to:

- Execution/delivery of the service
- Governance
- Funding
- Communications
- Diversity of needs and abilities across the system

The following were issues and concerns were shared with Vantage as part of the interview process. Without extensive additional effort outside of this scope of work, Vantage cannot attest to these comments as being accurate and valid. At a minimum, they should be looked at as representing the (sometimes conflicting) perceptions of the interviewees. As such they present hurdles that must be overcome in order to address any issues with present services and the ability to offer and implement new services in the future.

Execution (Stakeholder Comments)

- NDUS has historically had challenges with shared services where something implemented by the System focused on what works best for the System but didn't necessarily meet the needs of the campuses. This has resulted in some campuses going their own way to meet individual campus needs. However, these issues were noted as being endemic to the NDUS system and not unique to IT. Similar dynamics exist for student affairs, academic affairs, etc.
- NDUS is seen as operating in isolation from institutions and the distant NDUS office doesn't necessarily understand campus needs.
- NDUS is seen as not wanting to do anything unless it benefits all 11 institutions.
- Some of the campuses feel that they often have to take step backwards to adhere to System mandates. Some campuses would like to participate in more NDUS services but don't want users to take a step back.
- The lines often get blurry between "offering", "encouraging", "mandating" and "arm twisting".
- Desire for more balance between the needs of System and the needs of the campuses.
- NDUS focuses more on function, more on the technology than that the service meets the needs.
- Implementation of shared services is often slow and many things that were promised were never delivered. Some interviewees questions whether System staffing, resources, and skill-sets were adequate for the offered services.
- NDUS tries to be helpful but don't always have the resources to deliver.
- Campuses want to be more involved in defining services.
- Campuses are not always aware of shared services available from the System or from other campuses.
- NDUS execution of services is not well coordinated or managed.
- Have reiterated priorities to NDUS but it can take years with missed deadlines.
- Lack of transparency.
- Lack of/poor planning.
- NDUS needs better processes/project management.
- Some campuses see themselves as being smaller but more technically advanced than NDUS or the larger campuses (small, nimble, responsive).
- Transition to NDUS was done without much consultation or forethought as a result of PeopleSoft implementation.
- Focus should be on interoperation, not shared services.
- NDUS can be too dictatorial. Process must be more collaborative and collegial.
- Common, single solutions won't work. Bad foundation to build upon. Need to think architecturally about this. Needs not the same for a large research university and a community college.
- The System offices focuses on new stuff, not fixing the stuff that isn't working well.
- Users are tired of these huge initiatives.
- Additional services would be desirable, but only if NDUS flexible enough to do what the campuses want.
- Many of the smaller campuses especially need help with utilitarian stuff.

Governance (Stakeholder Comments)

- The mechanisms for good governance are in place. The leadership is open and responsive. But this has always been an issue within the NDUS System. There is no formal governance plan. When the present ad hoc governance works, it works well. When it doesn't work, it just doesn't. The present governance model results in the fact that the smaller campuses get out voted.
- The CIO council is not recognized the same way as other senior councils and hasn't been meeting much over the last few years. The present CIO Council is strictly an advisory group, more focused on general, projects, not strategy.
- The present "governance" is informational, not collaborative. NDUS told the campuses what was happening and asked questions, but the campuses were not really involved. NDUS makes decisions on its own. NDUS is good at sending information out but not enabling the conversation.
- The campuses are told "This is what the Board President (State Board of HE) wants done; do it. (e.g.: maximizing efficiencies with no understanding of impact and implications.) There are conflicting pressures from the legislature and Board to centralize and share.
- NDUS and UND are both very powerful but don't always see eye-to-eye and can't agree on strategies.
- The campuses say that want:
 - More openness and disclosure
 - A more formal processes to provide input
 - To collectively agree on options
 - A path for campuses with experience and success to lead projects (with funding from NDUS)
 - To have regular periodic meetings
 - A System-wide forum to look at systems and how they are working
 - To be better representation from campus CIOs

Funding (Stakeholder Comments)

- From campus point of view, they feel that they have been treated very fairly. Costs are low. Easy to sell to users and management. Master software licensing agreements are wonderful. The campuses don't see any impact for STAGEnet costs. Server and HW discounts.
- What gets funded and doesn't get funded are unpredictable sometimes resulting in unfunded mandates from decisions made at the System level.
- Sometimes first steps get funded but more important next steps don't.
- Capital requests need to be approved by the NDUS CIO.

Communications (Stakeholder Comments)

- Is new management at NDUS changing the issues at hand? The campuses say they don't know yet. They hope so, but no proof so far. There is optimism with the new leadership.
- NDUS is seen as interested and trying but the campuses have little idea where the System is going. Communication is just not that great.
- The campuses are hesitant to discuss new initiatives until outstanding issues are done and done right. The message to the new leadership is "Prove yourself and we will talk more."

High Value Areas for Potential Collaboration

As a product of our discussions with NDUS and the campuses, Vantage has identified the follow areas for potential collaboration:

- High-performance computing (HPC) – Many campuses including the smaller campuses not traditionally associated with research computing expressed a strong desire to participate and have access to a HPC.
- Information and data security (infosec) – There was significant interest in the concept of a shared security operations center (SOC) and an incidence response team. Key to a successful SOC is providing actionable, prioritized and timely information to the campuses.
- Identity management (IdM) – The ability to have a single username and password associated with an individual that can be used for authentication across NDUS is fundamental to the success of many shared services. NDUS has had limited success with an Active Directory (ADS) initiative and it is unclear if the implemented ADS can morph into the IdM needed by NDUS. The end state may be a shared directory like ADS, some sort of federated scheme or some other mechanism that reaches the desired goals.

Of note, the above HPC and infosec initiatives can be pursued independent of any IdM project.

Other areas for potential collaboration include:

- Dashboards
- Enhancing the existing Polycom cloud access (class access)
- Distance education
- Smart and collaborative classroom design perhaps using the UND standards as an initial baseline.
- Low-voltage and building construction IT standards
- Email
- Survey software
- Telephony
- Cloud storage
- Single sign-on
- Mobile app development
- Implementation assistance
- ERP reporting and related scripting
- Shared Data Center

Recommendations

The new NDUS leadership represents an opportunity that all parties are eager to capitalize upon.

Vantage believes that there are considerable opportunities for collaboration and sharing among the 11 campuses and NDUS, however there is not yet a culture of trust and cooperation across all institutions. There are, however, some very strong pockets that can be built upon moving forward. Toward that end, improved governance and team-building efforts will foster trust, cooperation, flexibility, sharing, and collaboration across the eleven institutions and NDUS.

The IT portion of this master plan was extremely limited in scope and Vantage recommends that a broader, in-depth IT planning effort would be valuable.

Vantage's discussions with the new NDUS leadership make it clear that they understand the institutions are incredibly varied in terms of size, needs, technical savvy, resources, etc. resulting in a situation where "one size" can rarely fit all. Towards that end, NDUS agrees that:

- Successful shared services are those that result in effective collaboration, efficiencies and superior services than can be offered alone; be that for 2 campuses or all 11.
- Shared services should be led by those in the best position to do so, that may be a 'lead college', NDUS, the state of ND or some other external entity.
- NDUS should play a key role in *facilitating* collaboration and cooperation across the 11 campuses.

Vantage recommends that NDUS consider the following next steps:








- Identify the services provided by NDUS, to whom, and how successfully.
- Prioritize projects and focus on fixing those projects already in process. Note that this may require re-thinking some of those projects and approaches rather than just forging ahead.
- Revisit and restructure the governance arrangements to have the campuses play a more active role in the governance process.
- Focus on some activities that may provide quick, positive returns such as:
 - Conduct an off-site retreat to focus on collaboration and building trust among the campuses and between the campuses and NDUS. (See below.)
 - Focus on IdM and federation as key infrastructure components for shared services.
 - Pick a new service such as HPC or a shared Security Operations Center and use the new governance framework as mechanism for design and roll-out.
 - Build on System-wide standards such as UND's standard for Smart classrooms or standards for low-voltage and IT related to new building construction as these encourage sharing across the campuses and provide immediate value to the campuses.

Vantage also notes that collaboration and team-building works best in a face-to-face situation. And that foundation needs to be established before other technologies such as video conferencing can be of full value. Toward that end Vantage recommends that NDUS consider a CIO retreat to allow the new NDUS leadership and the campus CIOs to get together and begin to address these issues. A review and discussion of this report may be an excellent place to start.

APPENDIX - EDUCATION AND TRAINING PROJECTIONS 2010-2020

EDUCATION AND TRAINING PROJECTIONS 2010-2020

Postsecondary non-degree award

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
23-2091 Court Reporters	81	92	11	13.6	Below Average Growth	11	12	23	None	ST	\$47,500
27-4011 Audio and Video Equipment Technicians	76	93	17	22.4	Avg to Near Avg Growth	17	22	39	None	MT	\$32,020
 29-2041 Emergency Medical Technicians and Paramedics	634	789	155	24.4	High Growth	155	127	282	None	None	\$28,190
29-2055 Surgical Technologists	249	290	41	16.5	Avg to Near Avg Growth	41	43	84	None	None	\$37,780
 29-2061 Licensed Practical and Licensed Vocational Nurses	3,368	3,799	431	12.8	Below Average Growth	431	898	1,329	None	None	\$36,830
 29-2071 Medical Records and Health Information Technicians	587	672	85	14.5	Avg to Near Avg Growth	85	118	203	None	None	\$30,940
 31-1012 Nursing Aides, Orderlies, and Attendants	6,736	7,498	762	11.3	Below Average Growth	762	869	1,631	None	None	\$26,160
31-9011 Massage Therapists	266	281	15	5.6	Below Average Growth	15	43	58	None	None	N/A
 31-9091 Dental Assistants	576	649	73	12.7	Below Average Growth	73	121	194	None	None	\$34,500
31-9094 Medical Transcriptionists	651	646	-5	-0.8	Zero to Declining Growth	0	100	100	None	None	\$30,850
33-1021 First-Line Supervisors of Fire Fighting and Prevention Workers	58	64	6	10.3	Below Average Growth	6	27	33	1-5 yrs	None	\$65,780
 33-2011 Firefighters	592	644	52	8.8	Below Average Growth	52	164	216	None	LT	\$46,610
39-5011 Barbers	127	130	3	2.4	Below Average Growth	3	23	26	None	None	N/A
 39-5012 Hairdressers, Hairstylists, and Cosmetologists	1,743	1,971	228	13.1	Below Average Growth	228	332	560	None	None	\$26,800
39-5092 Manicurists and Pedicurists	120	131	11	9.2	Below Average Growth	11	22	33	None	None	\$22,750
39-5094 Skincare Specialists	55	61	6	10.9	Below Average Growth	6	10	16	None	None	N/A
49-2011 Computer, Automated Teller, and Office Machine Repairers	440	447	7	1.6	Below Average Growth	7	108	115	None	None	\$36,640

 = indicates 'Bright Outlook' occupation

Typical On-the-Job Training: ST Short-term, on-the-job training (< 30 days) MT Moderate-term, on-the-job training (1-12 months)

LT Long-term, on-the-job training (> 12 months) AP Apprenticeship IR Internship/residency

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality restrictions.

EDUCATION AND TRAINING PROJECTIONS 2010-2020

Postsecondary non-degree award

2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
49-2022 Telecommunications Equipment Installers and Repairers, Except Line Installers										
553	556	3	0.5	Below Average Growth	3	88	91	None	MT	\$55,850
49-2091 Avionics Technicians										
21	24	3	14.3	Avg to Near Avg Growth	3	5	8	None	None	\$52,410
49-2092 Electric Motor, Power Tool, and Related Repairers										
23	24	1	4.3	Below Average Growth	1	2	3	None	LT	\$42,440
49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment										
94	94	0	0.0	Zero to Declining Growth	0	23	23	None	LT	\$58,820
49-2096 Electronic Equipment Installers and Repairers, Motor Vehicles										
46	46	0	0.0	Zero to Declining Growth	0	11	11	None	ST	\$28,930
49-2097 Electronic Home Entertainment Equipment Installers and Repairers										
159	181	22	13.8	Avg to Near Avg Growth	22	39	61	None	None	\$36,790
49-3011 Aircraft Mechanics and Service Technicians										
261	341	80	30.7	High Growth	80	79	159	None	None	\$48,720
49-3023 Automotive Service Technicians and Mechanics										
2,379	2,757	378	15.9	Avg to Near Avg Growth	378	615	993	None	LT	\$38,420
49-3031 Bus and Truck Mechanics and Diesel Engine Specialists										
1,329	1,846	517	38.9	Exceptional Growth	517	288	805	None	LT	\$42,770
49-9021 Heating, Air Conditioning, and Refrigeration Mechanics and Installers										
491	631	140	28.5	High Growth	140	87	227	None	LT	\$42,850
49-9097 Signal and Track Switch Repairers										
71	74	3	4.2	Below Average Growth	3	13	16	None	MT	\$54,140
51-4121 Welders, Cutters, Solderers, and Brazers										
2,123	2,682	559	26.3	High Growth	559	567	1,126	< 1 yr	MT	\$42,160
51-5111 Prepress Technicians and Workers										
146	109	-37	-25.3	Zero to Declining Growth	0	34	34	None	None	\$29,630
53-6051 Transportation Inspectors										
57	61	4	7.0	Below Average Growth	4	14	18	None	ST	\$66,910

 = indicates 'Bright Outlook' occupation











Typical On-the-Job Training: ST Short-term, on-the-job training (< 30 days) MT Moderate-term, on-the-job training (1-12 months)

LT Long-term, on-the-job training (> 12 months) AP Apprenticeship IR Internship/residency

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Associate's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
 11-1021 General and Operations Managers	4,419	5,061	642	14.5	Avg to Near Avg Growth	642	822	1,464	1-5 yrs	None	\$97,910
 11-9021 Construction Managers	951	1,128	177	18.6	Avg to Near Avg Growth	177	61	238	> 5 yrs	None	\$80,600
 15-1150 Computer Support Specialists	2,182	2,698	516	23.6	High Growth	516	573	1,089	None	MT	\$43,280
 17-3011 Architectural and Civil Drafters	315	366	51	16.2	Avg to Near Avg Growth	51	61	112	None	None	\$40,490
17-3012 Electrical and Electronics Drafters	56	63	7	12.5	Below Average Growth	7	11	18	None	None	\$49,610
 17-3013 Mechanical Drafters	150	195	45	30.0	High Growth	45	29	74	None	None	\$38,180
 17-3022 Civil Engineering Technicians	449	559	110	24.5	High Growth	110	86	196	None	None	\$42,110
 17-3023 Electrical and Electronics Engineering Technicians	304	363	59	19.4	Avg to Near Avg Growth	59	58	117	None	None	\$58,740
17-3025 Environmental Engineering Technicians	57	71	14	24.6	High Growth	14	11	25	None	None	\$50,670
 17-3026 Industrial Engineering Technicians	140	178	38	27.1	High Growth	38	27	65	None	None	\$42,150
17-3027 Mechanical Engineering Technicians	95	117	22	23.2	High Growth	22	18	40	None	None	\$46,190
19-4011 Agricultural and Food Science Technicians	154	166	12	7.8	Below Average Growth	12	52	64	None	None	\$37,060
 19-4031 Chemical Technicians	276	336	60	21.7	Avg to Near Avg Growth	60	40	100	None	MT	\$46,170
19-4091 Environmental Science and Protection Technicians, Including Health	37	50	13	35.1	High Growth	13	16	29	None	MT	\$38,780
19-4093 Forest and Conservation Technicians	209	212	3	1.4	Below Average Growth	3	88	91	None	None	\$39,960
 23-2011 Paralegals and Legal Assistants	308	358	50	16.2	Avg to Near Avg Growth	50	44	94	None	None	\$40,320
25-2011 Preschool Teachers, Except Special Education	339	370	31	9.1	Below Average Growth	31	88	119	None	None	\$23,940

 = indicates 'Bright Outlook' occupation







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LT Long-term, on-the-job training (> 12 months) AP Apprenticeship IR Internship/residency

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Associate's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
27-4012 Broadcast Technicians	173	159	-14	-8.1	Zero to Declining Growth	0	49	49	None	ST	\$37,500
 29-1111 Registered Nurses	7,137	8,699	1,562	21.9	Avg to Near Avg Growth	1,562	1,292	2,854	None	None	\$57,600
29-1124 Radiation Therapists	67	77	10	14.9	Avg to Near Avg Growth	10	13	23	None	None	\$59,430
 29-1126 Respiratory Therapists	211	279	68	32.2	High Growth	68	40	108	None	None	\$47,060
29-2012 Medical and Clinical Laboratory Technicians	516	553	37	7.2	Below Average Growth	37	100	137	None	None	\$37,860
 29-2021 Dental Hygienists	598	712	114	19.1	Avg to Near Avg Growth	114	120	234	None	None	\$56,330
29-2031 Cardiovascular Technologists and Technicians	69	88	19	27.5	High Growth	19	11	30	None	None	\$49,660
 29-2037 Radiologic Technologists and Technicians	598	749	151	25.3	High Growth	151	93	244	None	None	\$46,270
 29-2056 Veterinary Technologists and Technicians	190	280	90	47.4	Exceptional Growth	90	33	123	None	None	\$29,660
31-2011 Occupational Therapy Assistants	90	115	25	27.8	High Growth	25	14	39	None	None	\$42,180
 31-2021 Physical Therapist Assistants	101	125	24	23.8	High Growth	24	16	40	None	None	\$40,590
39-4831 Funeral Service Managers, Directors, Morticians, and Undertakers	138	165	27	19.6	Avg to Near Avg Growth	27	26	53	None	AP	\$70,800
43-4061 Eligibility Interviewers, Government Programs	403	438	35	8.7	Below Average Growth	35	108	143	None	MT	\$36,680
43-6012 Legal Secretaries	605	637	32	5.3	Below Average Growth	32	81	113	None	MT	\$33,340
43-9031 Desktop Publishers	139	107	-32	-23.0	Zero to Declining Growth	0	26	26	None	ST	\$24,230
51-8013 Power Plant Operators	380	410	30	7.9	Below Average Growth	30	135	165	None	LT	\$69,610
53-2021 Air Traffic Controllers	172	197	25	14.5	Avg to Near Avg Growth	25	65	90	None	LT	\$81,950

 = indicates 'Bright Outlook' occupation








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LT Long-term, on-the-job training (> 12 months) AP Apprenticeship IR Internship/residency

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Bachelor's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
 11-1011 Chief Executives	1,527	1,679	152	10.0	Below Average Growth	152	396	548	> 5 yrs	None	\$136,400
11-2011 Advertising and Promotions Managers	61	62	1	1.6	Below Average Growth	1	17	18	1-5 yrs	None	\$82,570
 11-2021 Marketing Managers	253	304	51	20.2	Avg to Near Avg Growth	51	74	125	1-5 yrs	None	\$88,360
 11-2022 Sales Managers	751	876	125	16.6	Avg to Near Avg Growth	125	218	343	1-5 yrs	None	\$87,790
 11-3021 Computer and Information Systems Managers	545	656	111	20.4	Avg to Near Avg Growth	111	83	194	> 5 yrs	None	\$86,180
 11-3031 Financial Managers	1,158	1,316	158	13.6	Below Average Growth	158	212	370	> 5 yrs	None	\$95,670
 11-3051 Industrial Production Managers	248	313	65	26.2	High Growth	65	58	123	1-5 yrs	None	\$73,650
11-3061 Purchasing Managers	98	119	21	21.4	Avg to Near Avg Growth	21	30	51	> 5 yrs	None	\$90,400
11-3111 Compensation and Benefits Managers	94	100	6	6.4	Below Average Growth	6	23	29	1-5 yrs	None	\$91,630
11-3121 Human Resources Managers	71	77	6	8.5	Below Average Growth	6	17	23	1-5 yrs	None	\$87,830
11-3131 Training and Development Managers	77	86	9	11.7	Below Average Growth	9	19	28	1-5 yrs	None	\$72,130
11-9031 Education Administrators, Preschool and Childcare Center/Program	66	73	7	10.6	Below Average Growth	7	19	26	1-5 yrs	None	\$37,420
11-9041 Architectural and Engineering Managers	260	303	43	16.5	Avg to Near Avg Growth	43	51	94	> 5 yrs	None	\$97,270
 11-9111 Medical and Health Services Managers	685	789	104	15.2	Avg to Near Avg Growth	104	167	271	1-5 yrs	None	\$74,150
11-9121 Natural Sciences Managers	163	171	8	4.9	Below Average Growth	8	98	106	> 5 yrs	None	\$96,290
 11-9151 Social and Community Service Managers	559	618	59	10.6	Below Average Growth	59	121	180	1-5 yrs	None	\$52,620
11-9161 Emergency Management Directors	101	120	19	18.8	Avg to Near Avg Growth	19	19	38	1-5 yrs	LT	\$50,130

 = indicates 'Bright Outlook' occupation








Typical On-the-Job Training: ST Short-term, on-the-job training (< 30 days) MT Moderate-term, on-the-job training (1-12 months)

LT Long-term, on-the-job training (> 12 months) AP Apprenticeship IR Internship/residency

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Bachelor's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
 13-1041 Compliance Officers	842	936	94	11.2	Below Average Growth	94	102	196	None	MT	\$55,590
 13-1051 Cost Estimators	548	768	220	40.1	Exceptional Growth	220	105	325	None	None	\$51,770
13-1081 Logisticians	74	89	15	20.3	Avg to Near Avg Growth	15	14	29	1-5 yrs	None	\$58,480
 13-1111 Management Analysts	496	600	104	21.0	Avg to Near Avg Growth	104	81	185	1-5 yrs	None	\$69,830
13-1121 Meeting, Convention, and Event Planners	98	135	37	37.8	Exceptional Growth	37	19	56	< 1 yr	None	\$35,420
13-1141 Compensation, Benefits, and Job Analysis Specialists	180	193	13	7.2	Below Average Growth	13	30	43	None	None	\$51,970
 13-1151 Training and Development Specialists	439	562	123	28.0	High Growth	123	74	197	None	None	\$48,590
 13-1161 Market Research Analysts and Marketing Specialists	467	685	218	46.7	Exceptional Growth	218	124	342	None	None	\$49,970
 13-2011 Accountants and Auditors	2,903	3,538	635	21.9	Avg to Near Avg Growth	635	624	1,259	None	None	\$54,080
13-2031 Budget Analysts	138	160	22	15.9	Avg to Near Avg Growth	22	29	51	None	None	\$62,790
 13-2041 Credit Analysts	109	142	33	30.3	High Growth	33	23	56	None	None	\$60,290
 13-2051 Financial Analysts	249	328	79	31.7	High Growth	79	53	132	None	None	\$70,050
 13-2052 Personal Financial Advisors	442	599	157	35.5	High Growth	157	51	208	None	None	\$57,090
13-2053 Insurance Underwriters	97	108	11	11.3	Below Average Growth	11	32	43	None	MT	\$55,010
13-2071 Credit Counselors	107	124	17	15.9	Avg to Near Avg Growth	17	27	44	None	MT	\$39,480
 13-2072 Loan Officers	1,179	1,468	289	24.5	High Growth	289	302	591	None	MT	\$58,480
13-2082 Tax Preparers	71	79	8	11.3	Below Average Growth	8	16	24	None	MT	\$27,310

 = indicates 'Bright Outlook' occupation

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Bachelor's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
 15-1121 Computer Systems Analysts	958	1,172	214	22.3	Avg to Near Avg Growth	214	180	394	None	None	\$60,770
 15-1131 Computer Programmers	576	640	64	11.1	Below Average Growth	64	134	198	None	None	\$51,810
 15-1132 Software Developers, Applications	771	949	178	23.1	High Growth	178	80	258	None	None	\$64,000
 15-1141 Database Administrators	157	212	55	35.0	High Growth	55	27	82	1-5 yrs	None	\$63,520
 15-1142 Network and Computer Systems Administrators	563	714	151	26.8	High Growth	151	95	246	None	None	\$59,090
 15-1179 Information Security Analysts, Web Developers, and Computer Network Architects	489	577	88	18.0	Avg to Near Avg Growth	88	72	160	1-5 yrs	None	\$62,910
15-2031 Operations Research Analysts	123	150	27	22.0	Avg to Near Avg Growth	27	39	66	None	None	\$64,720
 17-1011 Architects, Except Landscape and Naval	155	202	47	30.3	High Growth	47	31	78	None	IR	\$61,030
 17-1022 Surveyors	274	381	107	39.1	Exceptional Growth	107	60	167	None	None	\$48,980
17-2021 Agricultural Engineers	53	59	6	11.3	Below Average Growth	6	12	18	None	None	\$67,170
 17-2051 Civil Engineers	900	1,185	285	31.7	High Growth	285	183	468	None	None	\$69,190
17-2071 Electrical Engineers	265	312	47	17.7	Avg to Near Avg Growth	47	64	111	None	None	\$76,450
17-2081 Environmental Engineers	85	97	12	14.1	Avg to Near Avg Growth	12	19	31	None	None	\$68,420
17-2111 Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	31	40	9	29.0	High Growth	9	7	16	None	None	\$71,360
 17-2112 Industrial Engineers	506	649	143	28.3	High Growth	143	110	253	None	None	\$72,160
17-2131 Materials Engineers	22	32	10	45.5	Exceptional Growth	10	6	16	None	None	N/A
 17-2141 Mechanical Engineers	365	457	92	25.2	High Growth	92	117	209	None	None	\$71,280

 = indicates 'Bright Outlook' occupation





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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Bachelor's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
19-1012 Food Scientists and Technologists	57	64	7	12.3	Below Average Growth	7	23	30	None	None	\$58,850
 19-1013 Soil and Plant Scientists	117	150	33	28.2	High Growth	33	48	81	None	None	\$56,360
19-1022 Microbiologists	28	31	3	10.7	Below Average Growth	3	6	9	None	None	\$51,800
19-1023 Zoologists and Wildlife Biologists	95	94	-1	-1.1	Zero to Declining Growth	0	21	21	None	None	\$59,190
19-1031 Conservation Scientists	223	218	-5	-2.2	Zero to Declining Growth	0	27	27	None	None	\$62,860
19-1032 Foresters	36	38	2	5.6	Below Average Growth	2	4	6	None	None	\$45,440
19-2021 Atmospheric and Space Scientists	81	92	11	13.6	Below Average Growth	11	9	20	None	None	\$82,710
19-2031 Chemists	73	82	9	12.3	Below Average Growth	9	24	33	None	None	\$67,860
19-3011 Economists	23	24	1	4.3	Below Average Growth	1	7	8	None	None	\$71,280
21-1011 Substance Abuse and Behavioral Disorder Counselors	301	334	33	11.0	Below Average Growth	33	64	97	None	MT	\$44,600
 21-1021 Child, Family, and School Social Workers	474	538	64	13.5	Below Average Growth	64	112	176	None	None	\$42,580
21-1023 Mental Health and Substance Abuse Social Workers	361	407	46	12.7	Below Average Growth	46	86	132	None	None	\$41,810
 21-1091 Health Educators	171	215	44	25.7	High Growth	44	37	81	None	None	\$44,820
21-1092 Probation Officers and Correctional Treatment Specialists	164	192	28	17.1	Avg to Near Avg Growth	28	35	63	None	ST	\$45,050
21-2021 Directors, Religious Activities and Education	335	355	20	6.0	Below Average Growth	20	62	82	1-5 yrs	None	\$38,570
23-1021 Administrative Law Judges, Adjudicators, and Hearing Officers	87	85	-2	-2.3	Zero to Declining Growth	0	17	17	1-5 yrs	MT	\$90,580
 25-1191 Graduate Teaching Assistants	1,620	1,776	156	9.6	Below Average Growth	156	259	415	None	None	\$30,710

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Bachelor's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
25-1194 Vocational Education Teachers, Postsecondary	259	306	47	18.1	Avg to Near Avg Growth	47	41	88	1-5 yrs	None	\$49,170
 25-2012 Kindergarten Teachers, Except Special Education	535	615	80	15.0	Avg to Near Avg Growth	80	139	219	None	IR	\$40,140
 25-2021 Elementary School Teachers, Except Special Education	5,432	6,251	819	15.1	Avg to Near Avg Growth	819	1,194	2,013	None	IR	\$44,270
 25-2031 Secondary School Teachers, Except Special and Career/Technical Education	2,666	2,804	138	5.2	Below Average Growth	138	729	867	None	IR	\$42,630
25-2032 Career/Technical Education Teachers, Secondary School	465	462	-3	-0.6	Zero to Declining Growth	0	127	127	1-5 yrs	IR	\$43,580
 25-2041 Special Education Teachers, Preschool, Kindergarten, and Elementary School	718	851	133	18.5	Avg to Near Avg Growth	133	212	345	None	IR	\$47,120
25-2054 Special Education Teachers, Secondary School	479	504	25	5.2	Below Average Growth	25	142	167	None	IR	\$46,730
25-3011 Adult Basic and Secondary Education and Literacy Teachers and Instructors	102	113	11	10.8	Below Average Growth	11	16	27	None	IR	\$44,070
25-4013 Museum Technicians and Conservators	27	30	3	11.1	Below Average Growth	3	8	11	None	None	\$38,280
27-1014 Multimedia Artists and Animators	54	56	2	3.7	Below Average Growth	2	13	15	None	MT	\$40,300
 27-1024 Graphic Designers	559	629	70	12.5	Below Average Growth	70	173	243	None	None	\$34,330
27-1025 Interior Designers	58	71	13	22.4	Avg to Near Avg Growth	13	18	31	None	None	\$33,780
27-2012 Producers and Directors	124	126	2	1.6	Below Average Growth	2	37	39	1-5 yrs	None	\$41,830
27-2041 Music Directors and Composers	225	234	9	4.0	Below Average Growth	9	55	64	1-5 yrs	None	N/A
27-3022 Reporters and Correspondents	176	141	-35	-19.9	Zero to Declining Growth	0	62	62	None	None	\$27,490
 27-3031 Public Relations Specialists	439	509	70	15.9	Avg to Near Avg Growth	70	117	187	None	MT	\$47,430
27-3041 Editors	239	221	-18	-7.5	Zero to Declining Growth	0	68	68	1-5 yrs	None	\$41,050

 = indicates 'Bright Outlook' occupation

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Bachelor's degree

2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
27-3042 Technical Writers										
50	64	14	28.0	High Growth	14	10	24	1-5 yrs	ST	\$42,740
27-3043 Writers and Authors										
253	263	10	4.0	Below Average Growth	10	66	76	None	LT	\$31,340
27-3091 Interpreters and Translators										
49	69	20	40.8	Exceptional Growth	20	13	33	None	LT	\$34,540
27-4031 Camera Operators, Television, Video, and Motion Picture										
74	67	-7	-9.5	Zero to Declining Growth	0	13	13	None	MT	\$24,200
29-1031 Dietitians and Nutritionists										
234	266	32	13.7	Below Average Growth	32	82	114	None	IR	\$49,580
29-1125 Recreational Therapists										
143	157	14	9.8	Below Average Growth	14	51	65	None	None	\$34,650
29-2011 Medical and Clinical Laboratory Technologists										
591	638	47	8.0	Below Average Growth	47	115	162	None	None	\$47,220
29-9011 Occupational Health and Safety Specialists										
155	176	21	13.5	Below Average Growth	21	55	76	None	MT	\$61,590
29-9091 Athletic Trainers										
57	70	13	22.8	High Growth	13	20	33	None	None	\$29,500
41-3031 Securities, Commodities, and Financial Services Sales Agents										
295	341	46	15.6	Avg to Near Avg Growth	46	81	127	None	MT	\$76,960
45-2011 Agricultural Inspectors										
97	115	18	18.6	Avg to Near Avg Growth	18	29	47	None	MT	\$33,290
53-2011 Airline Pilots, Copilots, and Flight Engineers										
70	81	11	15.7	Avg to Near Avg Growth	11	27	38	1-5 yrs	MT	N/A



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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Master's degree

2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
11-9032 Education Administrators, Elementary and Secondary School										
517	557	40	7.7	Below Average Growth	40	146	186	1-5 yrs	None	\$73,920
15-2041 Statisticians										
70	80	10	14.3	Avg to Near Avg Growth	10	42	52	None	None	\$62,980
19-2043 Hydrologists										
24	23	-1	-4.2	Zero to Declining Growth	0	7	7	None	None	\$71,090
19-3051 Urban and Regional Planners										
97	108	11	11.3	Below Average Growth	11	25	36	None	None	\$60,220
21-1012 Educational, Guidance, School, and Vocational Counselors										
648	735	87	13.4	Below Average Growth	87	139	226	None	None	\$48,500
21-1013 Marriage and Family Therapists										
84	108	24	28.6	High Growth	24	18	42	None	IR	\$50,040
21-1014 Mental Health Counselors										
70	85	15	21.4	Avg to Near Avg Growth	15	15	30	None	IR	\$45,770
21-1015 Rehabilitation Counselors										
219	243	24	11.0	Below Average Growth	24	47	71	None	None	\$41,690
21-1022 Healthcare Social Workers										
439	536	97	22.1	Avg to Near Avg Growth	97	104	201	None	None	\$40,510
21-2011 Clergy										
1,211	1,288	77	6.4	Below Average Growth	77	207	284	None	MT	\$46,270
25-1072 Nursing Instructors and Teachers, Postsecondary										
162	185	23	14.2	Avg to Near Avg Growth	23	26	49	None	None	\$66,110
25-4012 Curators										
21	26	5	23.8	High Growth	5	6	11	None	None	\$44,720
25-4021 Librarians										
444	473	29	6.5	Below Average Growth	29	116	145	None	None	\$44,960
25-9031 Instructional Coordinators										
221	257	36	16.3	Avg to Near Avg Growth	36	49	85	> 5 yrs	None	\$65,960
29-1071 Physician Assistants										
236	270	34	14.4	Avg to Near Avg Growth	34	45	79	None	None	\$85,620
29-1122 Occupational Therapists										
365	439	74	20.3	Avg to Near Avg Growth	74	69	143	None	None	\$53,200
29-1123 Physical Therapists										
566	693	127	22.4	Avg to Near Avg Growth	127	66	193	None	None	\$61,720

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Master's degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
 29-1127 Speech-Language Pathologists	453	506	53	11.7	Below Average Growth	53	86	139	None	None	\$52,930
29-1128 Exercise Physiologists	23	30	7	30.4	High Growth	7	5	12	None	None	\$43,360
29-2091 Orthotists and Prosthetists	30	33	3	10.0	Below Average Growth	3	6	9	None	None	\$63,680

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Doctoral or professional degree

	2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
 23-1011 Lawyers	1,316	1,447	131	10.0	Below Average Growth	131	250	381	None	None	\$89,100
23-1012 Judicial Law Clerks	80	85	5	6.3	Below Average Growth	5	12	17	None	None	\$48,820
23-1023 Judges, Magistrate Judges, and Magistrates	119	128	9	7.6	Below Average Growth	9	23	32	> 5 yrs	ST	\$115,250
25-1011 Business Teachers, Postsecondary	204	236	32	15.7	Avg to Near Avg Growth	32	33	65	None	None	\$67,700
25-1022 Mathematical Science Teachers, Postsecondary	136	155	19	14.0	Avg to Near Avg Growth	19	22	41	None	None	\$52,110
25-1041 Agricultural Sciences Teachers, Postsecondary	149	162	13	8.7	Below Average Growth	13	24	37	None	None	\$75,430
25-1042 Biological Science Teachers, Postsecondary	124	141	17	13.7	Below Average Growth	17	20	37	None	None	\$76,030
25-1051 Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	58	64	6	10.3	Below Average Growth	6	9	15	None	None	\$69,680
25-1062 Area, Ethnic, and Cultural Studies Teachers, Postsecondary	33	38	5	15.2	Avg to Near Avg Growth	5	5	10	None	None	\$60,160
25-1111 Criminal Justice and Law Enforcement Teachers, Postsecondary	28	33	5	17.9	Avg to Near Avg Growth	5	4	9	None	None	\$62,760
25-1121 Art, Drama, and Music Teachers, Postsecondary	186	216	30	16.1	Avg to Near Avg Growth	30	30	60	None	None	\$52,870
25-1123 English Language and Literature Teachers, Postsecondary	154	177	23	14.9	Avg to Near Avg Growth	23	25	48	None	None	\$50,980
25-1125 History Teachers, Postsecondary	48	55	7	14.6	Avg to Near Avg Growth	7	8	15	None	None	\$62,600
29-1011 Chiropractors	157	179	22	14.0	Avg to Near Avg Growth	22	31	53	None	None	\$88,240
29-1021 Dentists, General	237	253	16	6.8	Below Average Growth	16	70	86	None	IR	\$205,760
29-1041 Optometrists	138	164	26	18.8	Avg to Near Avg Growth	26	49	75	None	None	\$104,720
 29-1051 Pharmacists	848	1,003	155	18.3	Avg to Near Avg Growth	155	216	371	None	None	\$106,250

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EDUCATION AND TRAINING PROJECTIONS 2010-2020

Doctoral or professional degree

2010 Estimate	2020 Projection	Numeric Change	Percent Change	Long-Term Job Growth Outlook	Growth Openings	+ Replacement Openings	= Total Openings	Related Work Exp.	Typical OJT Training	Average 2011 Wages
29-1061 Anesthesiologists										
51	59	8	15.7	Avg to Near Avg Growth	8	10	18	None	IR	\$202,000
29-1062 Family and General Practitioners										
237	269	32	13.5	Below Average Growth	32	47	79	None	IR	\$193,730
29-1064 Obstetricians and Gynecologists										
21	25	4	19.0	Avg to Near Avg Growth	4	4	8	None	IR	\$237,170
29-1065 Pediatricians, General										
36	42	6	16.7	Avg to Near Avg Growth	6	7	13	None	IR	\$189,780
29-1066 Psychiatrists										
54	60	6	11.1	Below Average Growth	6	11	17	None	IR	\$171,040
29-1067 Surgeons										
118	136	18	15.3	Avg to Near Avg Growth	18	23	41	None	IR	\$242,730
29-1081 Podiatrists										
27	27	0	0.0	Zero to Declining Growth	0	5	5	None	IR	\$122,520
29-1131 Veterinarians										
130	169	39	30.0	High Growth	39	26	65	None	None	\$67,950
29-1181 Audiologists										
29	36	7	24.1	High Growth	7	2	9	None	None	\$72,150

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APPENDIX - COUNTY OF ORIGIN DETAIL

A | APPENDIX - COUNTY OF ORIGIN DETAIL

Bakken Stats

PART TIME

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Total	30	3	57	1	2	7	8	11	11	2	53	185
Percent	16.21622	1.621622	30.81081	0.540541	1.081081	3.783784	4.324324	5.945946	5.945946	1.081081	28.64865	

County of Origin of First-Time Students
Students Who Start Part-Time
Most Recent Three Years (Aggregated)
Term: 1110 Academic Career: Undergraduate

County	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01
Billings	1	0	0	0	0	0	0	0	0	0	0
Bowman	0	1	1	0	1	0	0	1	0	0	0
Burke	0	1	0	0	0	0	0	0	0	0	0
Divide	0	0	1	0	0	0	0	0	0	0	0
Dunn	1	0	2	0	0	0	0	0	0	0	0
Golden Val	1	0	1	0	0	0	0	0	1	0	0
McKenzie	2	0	0	1	0	0	1	0	0	0	1
Mountrail	3	0	0	0	0	0	0	0	1	0	0
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	2	0	18	0	0	0	1	2	1	0	2
Williams	0	0	2	0	1	0	0	0	0	1	12

Billings	0	0	0	0	0	0	0	0	0	0	0
Bowman	0	0	0	0	0	1	0	0	0	0	0
Burke	0	1	0	0	0	0	0	0	0	0	1
Divide	0	0	0	0	0	0	0	0	0	0	0
Dunn	1	0	1	0	0	0	0	0	0	0	1
Golden Val	0	0	0	0	0	0	0	0	0	0	0
McKenzie	1	0	0	0	0	0	0	0	1	0	2
Mountrail	0	0	0	0	0	1	0	0	0	0	1
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	3	0	12	0	0	0	4	2	0	0	0
Williams	4	0	0	0	0	0	0	1	0	1	17

Billings	0	0	0	0	0	0	0	0	0	0	0
Bowman	0	0	2	0	0	0	0	0	0	0	0
Burke	0	0	0	0	0	0	0	0	0	0	0
Divide	1	0	0	0	0	0	0	1	1	0	1
Dunn	0	0	3	0	0	1	1	0	1	0	0
Golden Val	1	0	0	0	0	0	0	0	0	0	0
McKenzie	3	0	0	0	0	1	0	0	0	0	0
Mountrail	2	0	0	0	0	2	0	0	0	0	1
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	3	0	14	0	0	0	1	3	3	0	0
Williams	1	0	0	0	0	1	0	1	2	0	14

Bismarck Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	297	2	23	5	0	4	12	11	6	3	0	363
Percent	81.81818	0.550964	6.336088	1.37741	0	1.101928	3.305785	3.030303	1.652893	0.826446	0	
2 Burleigh	63	0	9	2	0	0	4	5	0	2	0	85
2 Morton	25	1	2	1	0	0	2	1	0	0	0	32
2 Burleigh	85	1	5	1	0	1	2	3	1	0	0	99
2 Morton	26	0	1	1	0	1	0	2	0	0	0	31
2 Burleigh	75	0	6	0	0	1	3	0	5	0	0	
2 Morton	23	0	0	0	0	1	1	0	0	1	0	

Fargo Stats

A | APPENDIX - COUNTY OF ORIGIN DETAIL

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	9	1	2	10	3	3	109	122	16	4	4	283
Percent	3.180212	0.353357	0.706714	3.533569	1.060071	1.060071	38.5159	43.10954	5.65371	1.413428	1.413428	

3 Cass	4	1	0	5	1	0	30	54	6	1	2	104
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3 Cass	2	0	0	4	1	2	44	35	5	1	0	94
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3 Cass	3	0	2	1	1	1	35	33	5	2	2	
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Grand Forks Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	5	2	0	52	2	0	5	11	101	2	1	181
Percent	2.762431	1.104972	0	28.72928	1.104972	0	2.762431	6.077348	55.8011	1.104972	0.552486	

4 Grand Fork	2	1	0	12	1	0	2	4	41	0	0	63
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4 Grand Fork	2	0	0	25	0	0	1	4	31	0	1	64
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4 Grand Fork	1	1	0	15	1	0	2	3	29	2	0	
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Other Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	122	49	12	100	19	65	115	49	58	21	14	624
Percent	19.55128	7.852564	1.923077	16.02564	3.044872	10.41667	18.42949	7.852564	9.294872	3.365385	2.24359	

5 Adams	0	0	0	0	0	0	0	0	1	0	0	1
5 Barnes	1	2	0	0	0	0	2	1	0	2	0	8
5 Benson	0	0	0	3	2	0	0	2	1	0	0	8
5 Bottineau	1	2	0	0	0	0	1	0	0	0	0	4
5 Cavalier	0	0	0	1	0	0	0	0	0	0	1	2
5 Dickey	0	0	0	1	0	0	1	0	1	1	0	4
5 Eddy	1	0	0	0	0	0	0	1	0	0	0	2
5 Emmons	1	0	0	0	0	0	0	0	0	0	0	1
5 Foster	1	0	0	1	0	0	0	1	0	0	0	3
5 Grant	1	0	0	0	0	0	0	0	0	0	0	1
5 Griggs	1	0	0	2	0	0	1	0	0	0	0	4
5 Hettinger	0	0	1	0	0	0	0	0	1	0	0	2
5 Kidder	0	0	0	0	0	0	0	0	1	0	0	1
5 Lamoure	0	0	0	0	0	0	2	0	0	0	1	3
5 Logan	0	0	0	0	0	0	0	0	0	0	0	0
5 McHenry	1	0	0	0	0	1	0	1	0	0	0	3
5 McIntosh	3	0	0	0	0	0	1	1	0	1	0	6
5 McLean	5	1	0	0	0	0	0	1	0	0	0	7
5 Mercer	7	0	1	0	2	0	1	1	1	0	0	13
5 Nelson	1	0	0	2	0	0	1	1	0	0	0	5
5 Oliver	0	0	0	0	0	0	0	0	0	0	0	0
5 Pembina	0	0	1	1	1	0	1	0	3	0	0	7
5 Pierce	1	1	0	1	0	0	0	0	0	0	0	3
5 Ramsey	0	1	0	16	0	0	3	0	1	0	1	22
5 Ransom	0	0	0	0	0	0	1	0	0	0	0	1
5 Renville	0	0	0	1	0	1	0	0	0	0	0	2
5 Richland	0	0	0	0	0	0	15	2	0	0	0	17
5 Rolette	0	3	0	0	1	1	0	2	6	0	0	13
5 Sargent	0	1	0	0	0	0	2	1	0	0	0	4
5 Sheridan	0	0	1	0	0	0	0	0	0	0	0	1
5 Sioux	2	0	0	0	0	0	0	0	0	0	0	2
5 Steele	0	0	0	0	0	0	1	0	1	0	0	2

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5 Stutsman	6	3	0	1	0	0	1	4	0	0	1	16
5 Towner	1	0	0	0	0	0	0	1	0	0	0	2
5 Traill	0	0	0	0	2	0	1	1	2	0	0	6
5 Walsh	0	0	0	1	1	0	0	1	2	1	0	6
5 Ward	5	7	0	2	0	17	6	3	4	0	2	46
5 Wells	0	0	0	2	0	0	0	1	0	0	0	3

5 Adams	1	0	0	0	0	0	0	0	1	0	0	2
5 Barnes	2	1	0	0	0	0	0	0	0	4	0	7
5 Benson	1	0	0	5	1	0	0	0	0	0	0	7
5 Bottineau	0	1	0	0	0	2	0	0	2	0	0	5
5 Cavalier	0	0	0	3	0	0	0	0	0	0	0	3
5 Dickey	0	0	0	0	0	0	1	0	1	2	0	4
5 Eddy	0	0	0	2	0	0	1	0	0	0	0	3
5 Emmons	0	0	0	0	0	0	0	0	0	0	0	0
5 Foster	1	0	0	0	0	0	0	0	0	0	0	1
5 Grant	1	0	0	0	0	0	0	0	0	0	0	1
5 Griggs	0	0	0	2	0	0	1	0	0	1	0	4
5 Hettinger	2	0	0	0	0	0	0	0	0	0	0	2
5 Kidder	1	0	0	0	0	0	0	0	0	0	0	1
5 Lamoure	0	0	0	0	0	0	0	0	0	0	0	0
5 Logan	2	0	0	0	0	0	0	0	0	0	0	2
5 McHenry	3	0	0	0	0	2	0	0	0	0	0	5
5 McIntosh	3	0	0	0	0	0	0	0	0	0	0	3
5 McLean	3	0	0	0	0	0	0	0	0	0	0	3
5 Mercer	11	0	0	0	0	0	1	1	0	0	0	13
5 Nelson	0	0	0	1	1	0	0	0	0	0	0	2
5 Oliver	0	0	0	0	0	0	0	0	0	0	0	0
5 Pembina	0	0	0	0	0	0	1	1	0	1	0	3
5 Pierce	2	0	0	0	0	1	1	0	0	0	0	4
5 Ramsey	1	0	0	12	2	1	1	0	1	0	0	18
5 Ransom	0	0	0	0	0	0	2	0	0	0	0	2
5 Renville	1	0	0	0	0	1	0	0	0	0	0	2
5 Richland	2	0	0	0	0	0	20	3	0	0	0	25
5 Rolette	3	1	0	1	0	0	1	0	0	0	0	6
5 Sargent	1	0	0	0	0	0	2	0	1	0	0	4
5 Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
5 Sioux	0	0	0	0	0	0	0	0	0	0	0	0
5 Steele	0	0	0	0	0	0	0	0	0	0	0	0
5 Stutsman	3	3	0	1	1	0	4	0	1	3	0	16
5 Towner	0	0	0	1	0	0	0	0	0	0	0	1
5 Traill	0	0	0	0	1	0	1	2	1	0	0	5
5 Walsh	0	0	0	1	0	0	0	3	0	0	0	4
5 Ward	3	7	0	2	0	24	1	1	1	0	7	46
5 Wells	4	0	0	1	0	0	0	2	0	0	0	7

5 Adams	2	0	2	0	0	0	0	0	0	0	0	4
5 Barnes	0	0	0	0	0	0	0	3	3	1	0	7
5 Benson	0	0	0	3	1	0	0	0	1	0	0	5
5 Bottineau	1	2	1	0	0	2	0	0	0	0	0	6
5 Cavalier	0	0	0	1	0	0	2	0	1	0	0	4
5 Dickey	1	0	0	0	0	0	1	0	0	1	0	3
5 Eddy	0	0	0	0	0	0	0	1	0	0	0	1
5 Emmons	4	0	1	0	0	0	0	0	0	0	0	5
5 Foster	0	0	0	1	0	0	0	0	0	0	0	1
5 Grant	0	0	0	0	0	0	0	0	0	0	0	0
5 Griggs	0	0	0	1	0	0	0	0	1	0	0	2
5 Hettinger	1	0	0	0	0	0	0	0	0	0	0	1
5 Kidder	0	0	0	0	0	0	0	0	0	0	0	0
5 Lamoure	0	0	0	0	0	0	0	0	0	0	0	0
5 Logan	1	0	0	1	0	0	1	0	0	0	0	3
5 McHenry	2	0	1	1	0	0	0	0	1	0	0	5
5 McIntosh	0	0	2	1	0	0	0	0	1	0	0	4
5 McLean	7	1	0	0	0	0	0	0	0	0	0	8
5 Mercer	3	0	0	0	0	0	0	0	0	0	0	3
5 Nelson	0	0	0	2	0	0	0	0	0	0	0	2
5 Oliver	0	0	0	0	0	0	0	0	0	0	0	0

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5 Pembina	0	0	0	1	0	0	0	1	1	0	0	3
5 Pierce	0	0	0	0	0	0	0	0	0	0	0	0
5 Ramsey	0	0	0	16	2	0	1	0	0	1	0	20
5 Ransom	0	0	0	0	0	0	0	0	0	0	0	0
5 Renville	0	2	0	0	0	0	0	0	0	0	0	2
5 Richland	1	0	0	0	0	0	19	1	1	1	0	23
5 Rolette	3	1	0	2	0	0	0	1	5	0	0	12
5 Sargent	0	0	0	0	1	0	3	0	0	0	0	4
5 Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
5 Sioux	1	0	0	1	0	0	0	0	5	0	0	7
5 Steele	0	0	0	0	0	0	0	0	0	0	0	0
5 Stutsman	1	3	0	1	0	0	2	1	0	1	0	9
5 Towner	0	0	0	1	0	0	0	0	0	0	0	1
5 Traill	0	0	0	0	0	0	2	1	1	0	0	4
5 Walsh	0	0	0	0	0	0	0	0	1	0	0	1
5 Ward	3	6	1	0	0	12	4	1	2	0	1	30
5 Wells	1	0	0	0	0	0	1	0	0	0	0	2

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Bakken Stats

Just out of High School

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	182	10	254	2	8	68	59	156	133	12	212	1096
Percent	16.60584	0.912409	23.17518	0.182482	0.729927	6.20438	5.383212	14.23358	12.13504	1.094891	19.34307	

County of Origin of First-Time Students

Students Directly Out of High School

Most Recent Three Years (Aggregated)

County	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01
Billings	1	0	2	0	0	0	0	0	0	0	0
Bowman	2	0	3	0	0	0	2	4	5	0	1
Burke	4	1	1	0	0	0	0	1	3	0	0
Divide	3	0	1	0	0	1	2	3	3	0	1
Dunn	6	0	7	0	0	1	1	1	1	1	2
Golden Val	10	0	1	0	0	0	1	1	3	0	0
McKenzie	7	0	1	1	0	1	0	2	0	1	11
Mountrail	5	1	0	0	0	7	1	1	5	2	2
Slope	0	0	1	0	0	0	0	1	1	0	0
Stark	19	1	77	0	1	3	7	25	13	0	0
Williams	13	0	3	0	1	7	3	9	18	0	51

Billings	0	0	2	0	0	0	1	0	0	0	0
Bowman	4	1	6	0	0	0	2	5	1	0	0
Burke	1	2	0	0	0	5	1	1	1	1	0
Divide	3	0	0	0	0	1	0	4	1	0	1
Dunn	4	2	8	0	0	0	0	2	0	0	1
Golden Val	5	0	1	0	0	0	0	3	0	0	3
McKenzie	4	0	1	0	0	6	5	2	5	0	8
Mountrail	9	0	0	1	0	9	4	1	5	0	0
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	16	0	61	0	0	1	5	24	12	1	1
Williams	7	1	0	0	2	5	1	8	11	0	56

Billings	0	0	0	0	0	0	0	0	0	0	0
Bowman	2	0	1	0	0	1	4	6	5	0	0
Burke	3	0	0	0	0	3	0	1	2	1	0
Divide	2	0	0	0	0	0	1	0	0	0	2
Dunn	5	0	7	0	0	2	2	4	2	0	0
Golden Val	7	0	2	0	0	0	1	4	1	0	0
McKenzie	3	0	0	0	1	1	2	0	4	1	5
Mountrail	14	0	1	0	1	6	2	2	2	1	1
Slope	0	0	1	0	0	0	0	0	0	1	0
Stark	16	1	66	0	1	2	9	30	18	1	1
Williams	7	0	0	0	1	6	2	11	11	1	65

Bismarck Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	1025	5	18	7	2	19	51	298	185	8	3	1621
Percent	63.23257	0.308452	1.110426	0.431832	0.123381	1.172116	3.146206	18.38371	11.41271	0.493523	0.185071	
2 Burleigh	231	0	3	0	0	6	11	72	46	0	0	369
2 Morton	102	3	4	2	0	2	6	20	8	1	0	148
2 Burleigh	260	2	2	3	1	7	5	82	63	1	2	428
2 Morton	96	0	2	1	1	1	10	31	8	2	0	152
2 Burleigh	251	0	3	0	0	3	12	78	47	2	1	397
2 Morton	85	0	4	1	0	0	7	15	13	2	0	127

Fargo Stats

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	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	19	5	3	6	21	4	223	915	278	58	3	1535
Percent	1.237785	0.325733	0.19544	0.390879	1.368078	0.260586	14.52769	59.60912	18.11075	3.778502	0.19544	
3 Cass	4	3	1	4	7	1	68	274	115	20	2	499
3 Cass	8	0	2	2	6	3	83	329	94	19	0	546
3 Cass	7	2	0	0	8	0	72	312	69	19	1	490

Grand Forks

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	5	2	1	38	27	4	24	90	604	3	0	798
Percent	0.626566	0.250627	0.125313	4.761905	3.383459	0.501253	3.007519	11.2782	75.68922	0.37594	0	
4 Grand Fork	1	0	1	14	12	0	11	29	197	1	0	266
4 Grand Fork	3	1	0	7	8	3	6	31	211	1	0	271
4 Grand Fork	1	1	0	17	7	1	7	30	196	1	0	261

Other Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	673	183	48	324	155	678	659	877	711	255	15	4578
Percent	14.70074	3.997379	1.048493	7.077326	3.385758	14.80996	14.39493	19.15684	15.5308	5.570118	0.327654	
5 Adams	5	0	4	0	0	0	0	2	2	0	0	13
5 Barnes	3	2	0	3	0	0	5	17	7	30	0	67
5 Benson	2	1	0	12	0	0	1	2	1	2	0	21
5 Bottineau	3	14	0	0	1	13	3	6	3	1	0	44
5 Cavalier	4	0	1	4	1	1	3	6	11	0	0	31
5 Dickey	1	0	0	1	0	1	7	5	14	6	0	35
5 Eddy	3	0	0	1	0	0	2	4	0	1	0	11
5 Emmons	29	0	1	0	0	0	2	10	0	1	0	43
5 Foster	9	1	0	3	0	0	0	4	6	5	0	28
5 Grant	9	0	0	0	0	0	4	0	0	0	0	13
5 Griggs	1	0	0	2	0	0	1	4	3	1	0	12
5 Hettinger	3	0	5	0	0	0	4	3	1	0	0	16
5 Kidder	5	0	0	0	0	2	2	4	3	1	0	17
5 Lamoure	4	0	0	0	1	0	10	5	5	4	0	29
5 Logan	4	0	0	0	0	0	2	1	1	0	0	8
5 McHenry	13	3	0	0	0	10	4	5	3	1	1	40
5 McIntosh	8	0	0	0	1	0	3	7	2	0	0	21
5 McLean	41	4	2	0	1	10	3	5	7	1	0	74
5 Mercer	35	0	5	0	1	6	4	7	13	5	0	76
5 Nelson	1	2	0	6	2	0	2	5	9	0	0	27
5 Oliver	8	1	0	0	0	0	2	0	3	0	0	14
5 Pembina	0	0	1	4	10	0	3	8	13	0	0	39
5 Pierce	11	2	0	1	1	9	1	6	6	1	0	38
5 Ramsey	1	2	0	60	1	1	7	7	12	0	0	91
5 Ransom	3	1	0	0	0	0	7	9	5	8	0	33
5 Renville	4	0	1	0	0	3	1	4	2	1	0	16
5 Richland	1	0	0	0	2	0	68	36	14	5	0	126
5 Rolette	2	10	0	2	0	5	2	2	13	6	0	42
5 Sargent	1	2	0	0	0	1	11	16	4	2	0	37
5 Sheridan	4	0	0	1	0	2	1	3	0	1	0	12
5 Sioux	3	1	1	0	0	1	0	0	1	0	0	7
5 Steele	0	0	0	1	1	0	6	3	3	0	0	14
5 Stutsman	8	2	0	3	4	0	18	30	9	13	0	87
5 Towner	2	1	1	0	0	1	1	4	4	0	0	14
5 Traill	0	0	0	2	17	2	7	13	16	2	0	59
5 Walsh	1	1	0	8	6	0	5	15	30	6	0	72

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5 Ward	12	11	2	2	1	163	18	31	41	1	2	284
5 Wells	10	0	0	1	0	5	1	8	0	0	1	26
5 Adams	1	0	4	0	0	0	2	1	5	0	0	13
5 Barnes	3	2	0	1	0	1	12	18	12	25	0	74
5 Benson	7	0	0	14	1	0	0	5	2	0	0	29
5 Bottineau	13	11	0	2	0	9	3	8	4	0	1	51
5 Cavalier	0	0	0	9	3	0	1	4	5	1	1	24
5 Dickey	3	0	0	1	2	0	6	11	2	2	0	27
5 Eddy	0	0	0	3	0	0	3	7	1	1	0	15
5 Emmons	15	0	1	0	0	0	4	6	3	0	0	29
5 Foster	4	0	1	4	0	1	4	5	5	1	0	25
5 Grant	6	0	1	0	0	0	3	1	0	0	0	11
5 Griggs	1	1	0	2	0	0	5	3	3	4	0	19
5 Hettinger	3	0	0	0	0	0	0	3	1	0	0	7
5 Kidder	12	0	0	1	0	0	0	3	0	0	0	16
5 Lamoure	2	0	1	0	0	1	2	5	3	2	0	16
5 Logan	7	1	0	0	0	0	0	4	0	0	0	12
5 McHenry	11	4	0	0	0	14	4	6	5	1	0	45
5 McIntosh	4	0	0	0	0	0	2	2	0	2	0	10
5 McLean	20	1	2	1	0	5	6	6	4	1	1	47
5 Mercer	25	1	5	0	0	6	2	11	9	0	0	59
5 Nelson	0	0	0	4	2	0	2	2	2	0	0	12
5 Oliver	2	0	0	0	0	1	0	1	3	0	0	7
5 Pembina	1	0	0	0	4	0	2	10	14	1	0	32
5 Pierce	14	1	0	3	0	5	1	4	2	1	0	31
5 Ramsey	3	0	0	52	1	1	5	9	14	1	0	86
5 Ransom	1	0	0	0	0	1	10	10	2	5	0	29
5 Renville	4	4	0	0	0	6	1	3	3	1	0	22
5 Richland	0	2	0	0	0	0	61	16	5	10	0	94
5 Rolette	7	8	0	1	0	5	2	6	8	2	0	39
5 Sargent	0	0	0	1	2	0	7	8	4	7	0	29
5 Sheridan	6	0	0	0	0	1	0	0	0	0	0	7
5 Sioux	5	0	0	0	0	0	0	0	0	0	0	5
5 Steele	1	0	0	0	3	0	2	4	1	0	0	11
5 Stutsman	12	1	1	1	0	3	12	23	9	11	0	73
5 Towner	1	0	0	4	0	1	1	1	6	1	1	16
5 Traill	1	0	0	1	15	0	1	15	14	2	0	49
5 Walsh	1	2	0	3	8	0	7	11	22	1	0	55
5 Ward	23	20	0	1	0	178	23	36	36	0	4	321
5 Wells	11	0	0	1	0	4	2	11	3	2	1	35
5 Adams	2	0	2	0	0	0	3	2	1	0	0	10
5 Barnes	5	1	0	0	0	0	9	13	12	21	0	61
5 Benson	1	1	0	9	2	0	0	4	2	2	0	21
5 Bottineau	5	15	0	0	0	4	6	10	12	1	1	54
5 Cavalier	2	0	0	7	2	0	5	6	7	0	0	29
5 Dickey	2	1	0	0	0	0	3	12	4	1	0	23
5 Eddy	1	0	0	2	1	1	1	7	0	1	0	14
5 Emmons	24	0	0	0	0	0	3	12	2	0	0	41
5 Foster	3	0	0	2	0	0	6	10	6	0	0	27
5 Grant	9	0	0	0	2	1	4	3	0	1	0	20
5 Griggs	0	1	0	4	1	0	2	3	2	1	0	14
5 Hettinger	4	0	1	0	0	2	0	2	3	0	0	12
5 Kidder	5	0	0	0	0	0	1	4	2	1	0	13
5 Lamoure	5	1	2	0	0	0	11	4	2	0	0	25
5 Logan	8	0	0	0	0	0	1	3	0	1	0	13
5 McHenry	8	5	0	2	0	14	7	2	3	1	1	43
5 McIntosh	4	0	0	0	0	0	4	7	2	1	0	18
5 McLean	23	1	1	2	0	3	5	10	4	1	0	50
5 Mercer	21	0	1	0	0	0	2	15	11	1	0	51
5 Nelson	0	0	0	2	3	0	2	4	8	0	0	19
5 Oliver	2	0	0	0	0	0	0	0	1	0	0	3
5 Pembina	0	1	0	4	8	1	2	10	9	1	0	36
5 Pierce	4	0	0	0	0	3	7	4	5	0	0	23
5 Ramsey	2	1	0	49	3	3	7	9	8	1	0	83
5 Ransom	1	0	0	0	5	0	2	8	4	4	0	24

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5 Renville	0	6	0	0	0	9	1	4	3	0	0	23
5 Richland	1	1	0	0	6	0	64	13	10	4	0	99
5 Rolette	4	9	1	2	0	2	8	5	19	0	0	50
5 Sargent	2	0	0	0	1	0	16	11	2	6	0	38
5 Sheridan	3	0	0	0	0	0	1	2	0	0	0	6
5 Sioux	6	0	0	1	0	0	0	0	0	0	0	7
5 Steele	0	1	0	0	6	0	6	2	3	0	0	18
5 Stutsman	16	1	0	5	0	2	18	22	6	7	0	77
5 Towner	0	0	0	5	2	1	3	2	2	1	0	16
5 Traill	0	0	0	0	11	0	11	22	13	0	0	57
5 Walsh	1	0	0	1	10	2	3	15	25	4	0	61
5 Ward	10	17	0	0	0	150	13	35	36	0	0	261
5 Wells	5	0	0	0	0	1	3	4	3	3	0	19

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Bakken Stats

25 and Older

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	27	3	46	5	1	13	6	4	4	4	27	140
Percent	19.28571	2.142857	32.85714	3.571429	0.714286	9.285714	4.285714	2.857143	2.857143	2.857143	19.28571	

County of Origin of First-Time Students

Students Who Start at age 25 and Older

Most Recent Three Years (Aggregated)

Term: 1110 Academic Career: Undergraduate

County	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01
Billings	0	0	0	0	0	0	0	0	0	0	0
Bowman	0	1	0	0	0	0	0	0	0	0	0
Burke	0	0	0	0	0	0	0	0	0	0	0
Divide	1	0	0	0	0	0	0	0	0	0	0
Dunn	0	0	1	0	0	0	0	0	0	0	0
Golden Val	2	0	2	0	0	0	0	0	0	0	0
McIntosh	2	0	0	0	0	0	2	0	0	1	0
Mountrail	2	0	0	0	0	2	0	0	2	0	0
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	6	0	14	0	0	0	0	0	0	0	2
Williams	0	0	2	0	0	2	0	0	0	1	9

Billings	0	0	0	0	0	0	0	0	0	0	0
Bowman	0	0	0	0	0	0	0	0	0	0	0
Burke	0	0	0	0	0	0	1	0	0	0	1
Divide	0	0	0	0	0	0	0	0	0	0	0
Dunn	0	0	0	0	0	0	0	0	0	0	1
Golden Val	1	0	0	0	0	0	0	0	0	0	0
McKenzie	1	0	0	0	0	0	0	0	0	0	0
Mountrail	0	0	0	1	0	2	0	0	0	0	0
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	2	0	14	0	0	0	3	0	0	1	0
Williams	4	0	0	2	0	0	0	1	0	1	6

Billings	0	0	0	0	0	0	0	0	0	0	0
Bowman	0	0	1	0	0	0	0	0	0	0	0
Burke	0	2	0	0	0	1	0	0	0	0	0
Divide	0	0	0	0	0	0	0	1	0	0	0
Dunn	0	0	1	0	0	1	0	0	1	0	0
Golden Val	1	0	0	0	0	0	0	0	0	0	0
McKenzie	2	0	0	0	0	1	0	0	0	0	0
Mountrail	0	0	0	0	0	0	0	0	0	0	0
Slope	0	0	0	0	0	0	0	0	0	0	0
Stark	3	0	11	1	0	0	0	1	1	0	0
Williams	0	0	0	1	1	4	0	1	0	0	8

Bismarck Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	200	3	26	6	0	13	10	11	7	5	1	282
Percent	70.92199	1.06383	9.219858	2.12766	0	4.609929	3.546099	3.900709	2.48227	1.77305	0.35461	
2 Burleigh	51	1	10	4	0	4	1	1	2	4	1	79
2 Morton	19	0	2	0	0	1	3	2	0	0	0	27
2 Burleigh	50	2	10	1	0	3	2	5	1	0	0	74
2 Morton	20	0	2	0	0	1	0	2	0	0	0	25
2 Burleigh	44	0	2	1	0	2	2	1	4	0	0	56
2 Morton	16	0	0	0	0	2	2	0	0	1	0	21

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Fargo Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	16	1	3	6	6	5	91	118	16	5	2	269
Percent	5.947955	0.371747	1.115242	2.230483	2.230483	1.858736	33.829	43.86617	5.947955	1.858736	0.743494	
3 Cass	4	1	1	3	2	2	30	47	3	1	1	95
3 Cass	5	0	1	3	2	2	36	34	8	3	0	94
3 Cass	7	0	1	0	2	1	25	37	5	1	1	80

Grand Forks Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	7	2	0	42	4	2	6	12	91	2	0	168
Percent	4.166667	1.190476	0	25	2.380952	1.190476	3.571429	7.142857	54.16667	1.190476	0	
4 Grand Fork	4	2	0	8	2	2	3	5	33	0	0	59
4 Grand Fork	3	0	0	19	1	0	0	6	36	0	0	65
4 Grand Fork	0	0	0	15	1	0	3	1	22	2	0	44

Other Stats

	BSC01	MISUB	DSU01	LRSC1	MASU1	MISU1	NDSCS	NDSU1	UND01	VCSU1	WSC01	
Number	88	42	12	71	25	76	93	29	50	32	15	533
Percent	16.51032	7.879925	2.251407	13.32083	4.690432	14.25891	17.44841	5.440901	9.380863	6.003752	2.814259	
5 Adams	0	0	0	0	0	0	0	0	0	0	0	0
5 Barnes	2	1	0	1	0	0	2	1	1	4	0	12
5 Benson	0	0	0	2	2	0	0	1	1	0	0	6
5 Bottineau	1	2	0	0	0	0	0	0	0	0	0	3
5 Cavalier	0	0	0	0	0	0	0	0	0	0	0	0
5 Dickey	1	0	0	0	0	0	0	0	0	0	0	1
5 Eddy	0	0	0	1	0	0	0	0	0	0	0	1
5 Emmons	1	0	0	1	0	0	1	0	0	0	0	3
5 Foster	1	0	0	0	0	0	0	1	0	0	0	2
5 Grant	0	0	0	0	0	0	0	0	0	1	1	2
5 Griggs	1	0	0	2	0	0	0	0	0	0	0	3
5 Hettinger	0	0	0	0	0	0	0	0	0	0	0	0
5 Kidder	0	0	0	0	0	0	0	0	1	0	0	1
5 Lamoure	0	0	0	0	0	0	0	0	0	0	2	2
5 Logan	0	0	0	0	0	0	0	0	0	0	0	0
5 McHenry	0	0	0	0	0	0	0	0	0	0	0	0
5 McIntosh	2	0	0	0	0	0	2	0	0	1	0	5
5 McLean	2	1	0	0	0	1	0	0	2	0	0	6
5 Mercer	8	0	1	0	2	0	0	0	0	0	0	11
5 Nelson	0	0	0	2	0	0	1	0	1	0	0	4
5 Oliver	2	0	1	0	0	0	0	0	0	0	0	3
5 Pembina	0	0	1	0	0	0	0	0	3	1	0	5
5 Pierce	1	1	0	1	0	0	0	0	0	0	0	3
5 Ramsey	0	0	0	11	0	0	3	0	1	1	1	17
5 Ransom	0	0	0	0	0	0	2	1	0	0	0	3
5 Renville	0	1	0	1	0	2	0	0	0	0	0	4
5 Richland	2	0	0	0	0	0	14	4	0	0	0	20
5 Rolette	0	1	0	0	1	0	0	1	4	0	0	7
5 Sargent	1	0	0	0	0	0	1	0	0	0	0	2
5 Sheridan	0	0	1	0	0	0	0	0	0	0	0	1
5 Sioux	1	0	0	0	0	0	0	0	0	0	0	1
5 Steele	0	0	0	0	0	0	0	0	1	0	0	1
5 Stutsman	6	0	0	1	0	0	2	3	0	2	0	14
5 Towner	0	0	0	0	0	0	0	0	0	0	0	0
5 Traill	0	0	0	0	4	0	0	1	1	0	0	6

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5 Walsh	0	0	0	1	2	0	0	0	1	0	0	4
5 Ward	7	6	0	0	0	25	4	1	4	0	2	49
5 Wells	0	0	0	1	0	0	0	1	0	0	0	2
5 Adams	1	0	0	0	0	0	0	0	0	0	0	1
5 Barnes	1	1	0	0	0	0	1	1	1	5	0	10
5 Benson	0	0	0	2	1	0	0	0	0	1	0	4
5 Bottineau	0	4	0	0	0	1	0	0	1	0	0	6
5 Cavalier	0	0	0	1	0	0	0	0	0	0	0	1
5 Dickey	0	0	0	0	0	0	3	0	1	1	0	5
5 Eddy	0	0	0	1	0	0	1	0	0	1	0	3
5 Emmons	0	0	0	0	0	0	0	0	0	0	0	0
5 Foster	1	0	1	0	0	0	0	0	0	0	0	2
5 Grant	0	0	0	0	0	0	0	0	0	0	0	0
5 Griggs	0	0	0	0	0	0	0	1	0	0	0	1
5 Hettinger	2	0	0	0	0	0	0	0	0	0	0	2
5 Kidder	0	0	0	0	0	0	0	0	0	0	0	0
5 Lamoure	0	0	0	0	0	0	1	0	0	1	0	2
5 Logan	1	0	0	0	0	0	0	0	0	0	0	1
5 McHenry	1	1	0	0	0	0	0	0	0	0	0	2
5 McIntosh	0	0	0	0	0	0	0	0	0	0	0	0
5 McLean	3	0	0	0	0	1	0	0	0	0	1	5
5 Mercer	5	0	0	0	0	0	0	0	1	0	0	6
5 Nelson	0	0	0	2	1	0	0	0	0	0	0	3
5 Oliver	0	0	0	0	0	0	0	0	1	0	0	1
5 Pembina	1	0	0	0	0	0	0	0	1	0	0	2
5 Pierce	0	0	0	1	0	1	1	0	0	1	0	4
5 Ramsey	0	0	0	10	2	1	0	0	1	0	0	14
5 Ransom	0	0	0	0	0	0	1	0	0	0	0	1
5 Renville	0	0	0	0	0	1	0	0	0	0	0	1
5 Richland	2	0	0	0	0	0	20	2	2	0	0	26
5 Rolette	0	4	0	4	0	1	0	0	0	0	0	9
5 Sargent	1	0	0	0	0	0	1	0	0	0	0	2
5 Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
5 Sioux	1	0	0	0	0	0	0	0	0	0	0	1
5 Steele	0	0	0	0	0	0	0	0	0	0	0	0
5 Stutsman	4	3	0	3	1	0	3	0	1	5	0	20
5 Towner	0	0	0	3	0	0	0	0	0	0	0	3
5 Traill	1	0	0	0	2	0	1	2	0	0	0	6
5 Walsh	1	0	0	0	0	0	0	0	0	0	0	1
5 Ward	5	4	0	2	0	25	0	0	2	1	5	44
5 Wells	2	0	0	0	0	0	1	0	0	0	0	3
5 Adams	1	0	2	0	0	0	0	0	0	0	0	3
5 Barnes	0	1	0	0	0	0	0	0	2	3	0	6
5 Benson	0	0	0	1	2	0	0	0	0	0	0	3
5 Bottineau	0	4	1	0	0	1	0	0	0	0	0	6
5 Cavalier	0	0	0	0	0	0	2	0	0	0	0	2
5 Dickey	0	0	0	0	0	0	1	0	0	0	0	1
5 Eddy	0	0	0	0	0	0	0	0	0	0	0	0
5 Emmons	0	0	0	0	0	0	0	0	0	0	0	0
5 Foster	0	0	0	0	0	0	0	0	0	0	0	0
5 Grant	0	0	0	0	0	0	0	0	0	0	0	0
5 Griggs	0	0	0	2	0	0	1	0	1	0	0	4
5 Hettinger	0	0	2	0	0	0	0	0	0	0	0	2
5 Kidder	0	0	0	0	0	0	0	0	0	0	0	0
5 Lamoure	0	0	0	0	0	0	0	0	1	0	0	1
5 Logan	1	0	0	1	0	0	1	0	0	0	0	3
5 McHenry	0	0	1	1	0	0	0	1	0	0	0	3
5 McIntosh	0	0	0	1	0	0	0	0	1	0	0	2
5 McLean	3	1	0	0	0	0	0	0	0	0	0	4
5 Mercer	2	0	0	0	0	0	0	0	0	0	0	2
5 Nelson	0	0	0	2	0	0	0	0	1	0	0	3
5 Oliver	1	0	0	0	0	0	0	0	1	0	0	2
5 Pembina	0	0	0	0	0	0	0	1	1	0	0	2
5 Pierce	0	0	0	0	0	0	0	0	0	0	0	0
5 Ramsey	1	0	0	7	2	0	1	0	0	0	0	11

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5 Ransom	0	0	0	0	0	0	0	1	0	0	0	0	1
5 Renville	0	1	0	0	0	0	0	0	0	0	0	0	1
5 Richland	1	0	0	0	0	0	0	14	1	0	1	0	17
5 Rolette	0	2	0	2	0	1	1	1	1	0	0	0	7
5 Sargent	0	1	0	0	1	0	1	1	0	0	1	0	4
5 Sheridan	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Sioux	2	0	0	0	0	0	0	0	0	4	0	0	6
5 Steele	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Stutsman	0	1	0	0	0	0	0	1	0	0	1	0	3
5 Towner	0	0	0	0	0	0	0	0	1	0	0	0	1
5 Traill	0	0	0	0	2	0	1	1	0	1	0	0	4
5 Walsh	0	0	0	0	0	0	0	0	1	2	0	0	3
5 Ward	2	1	1	0	0	15	1	1	2	2	0	2	26
5 Wells	2	0	0	0	0	0	0	1	0	0	0	1	4

APPENDIX - BURNING GLASS CROSSTABS

Overview Crosstab

Career Field	Degree Type	Average Salary (Bureau of Labor Statistics)	Demand Size	Ratio of Demand to Supply
Sales and Marketing	Bachelors +	\$47,524	1,998	97.1%
Management	Bachelors +	\$65,088	1,728	95.2%
Allied Health	Bachelors +	\$51,890	1,608	91.3%
Computer & IT	Bachelors +	\$58,564	1,558	107.3%
Finance	Bachelors +	\$41,972	1,410	99.8%
Nursing	Bachelors +	\$53,476	1,367	102.4%
Engineering	Bachelors +	\$56,940	859	103.8%
Clerical and Admin	Bachelors +	\$36,121	854	97.9%
Research, Planning, and Analy..	Bachelors +	\$55,791	730	93.5%
Human Services	Bachelors +	\$38,500	619	93.3%
Life and Phys. Sciences	Bachelors +	\$53,906	372	87.5%
Hospitality, Food, and Tourism	Bachelors +	\$30,222	340	112.2%
Transportation	Bachelors +	\$48,856	185	92.8%
Construction & Architecture	Bachelors +	\$54,802	169	88.1%
Manufacturing and Production	Bachelors +	\$47,819	140	90.6%
Communications	Bachelors +	\$37,426	105	72.0%
Clerical and Admin	Sub-Baccalaureate	\$36,121	1,929	109.3%
Maintenance, Repair, and Insta..	Sub-Baccalaureate	\$49,467	1,504	124.3%
Nursing	Sub-Baccalaureate	\$53,476	1,334	121.9%
Allied Health	Sub-Baccalaureate	\$51,890	713	108.3%
Finance	Sub-Baccalaureate	\$41,972	701	132.6%
Healthcare (Clerical & Support)	Sub-Baccalaureate	\$31,567	590	127.3%
Manufacturing and Production	Sub-Baccalaureate	\$47,819	419	98.7%
Engineering	Sub-Baccalaureate	\$56,940	359	97.5%
Computer & IT	Sub-Baccalaureate	\$58,564	296	110.5%
Human Services	Sub-Baccalaureate	\$38,500	111	130.7%
Education	Sub-Baccalaureate	\$26,593	61	88.9%

Average Salary (Bureau of Labor Statistics), Demand Size and Ratio of Demand to Supply broken down by Career Field and Degree Type. The data is filtered on Occupation Title, Action (BGTOCC Title,Career Field Calculations), Region, Exclusions (Occupation Title,BGTOCC,Career Field), SUPPLY: Total - All Education Levels and DEMAND: Total - All Education Levels. The Occupation Title filter keeps 20 members. The Action (BGTOCC Title,Career Field Calculations) filter keeps 180 members. The Region filter keeps North Dakota. The Exclusions (Occupation Title,BGTOCC,Career Field) filter keeps 180 members. The SUPPLY: Total - All Education Levels filter ranges from 0 to 10,000. The DEMAND: Total - All Education Levels filter ranges from 0 to 10,000. The view is filtered on Degree Type, Career Field, sum of Average Salary (Bureau of Labor Statistics) and sum of Ratio of Demand to Supply. The Degree Type filter keeps Sub-Baccalaureate. The Career Field filter keeps multiple members. The sum of Average Salary (Bureau of Labor Statistics) filter ranges from \$20,000 to \$100,000. The sum of Ratio of Demand to Supply filter keeps non-Null values only.

Detailed Crosstab

Career Field	Occupation Title	Average Salary (Bureau of Labor Statistics)	Demand Size	Ratio of Demand to Supply
Sales and Marketing	Sales Representative	\$49,300	759	96.3%
	Sales Manager	\$81,730	268	117.3%
	Sales Consultant	\$21,810	162	90.0%
	Store Manager	\$81,730	159	91.1%
	Account Manager / Representa..	\$49,300	157	106.0%
	Marketing Manager	\$87,250	47	84.3%
	Marketing Specialist	\$53,122	93	85.9%
	Account Executive	\$49,300	84	85.9%
	Sales Supervisor	\$56,860	71	132.0%
	Financial Services Sales Agent	\$45,350	33	181.3%
Management	Healthcare Administrator	\$70,310	317	91.8%
	Sales Manager	\$81,730	268	117.3%
	Nursing Manager / Supervisor	\$70,310	138	106.8%
	Financial Manager	\$89,300	84	103.4%
	Treasurer / Controller	\$89,300	68	102.1%
	Program Manager	\$76,190	124	87.3%
	Operations Manager	\$83,050	109	81.8%
	Marketing Manager	\$87,250	47	84.3%
	Safety Manager / Specialist	\$55,560	45	86.8%
	General Manager	\$83,050	85	86.0%
Computer & IT	Director of Nursing	\$70,310	42	98.8%
	Software Developer/Engineer ..	\$62,320	476	109.1%
	Systems Analyst	\$59,470	141	120.9%
	Computer Support Specialist	\$39,940	194	115.0%
	Network/Systems Administrator..	\$59,326	100	154.3%
	Business Intelligence Analyst	\$63,290	45	93.6%
	Database Administrator	\$64,740	83	129.6%
	Web Developer	\$44,360	70	117.1%
	Network Engineer / Architect	\$78,330	61	127.3%
	Web Designer	\$44,360	30	96.1%
	Software QA Engineer / Tester	\$63,290	50	119.3%
	Data Architect	\$63,290	40	147.7%
	Information Security Engineer /..	\$56,550	34	148.9%
	Telecommunications / VOIP En..	\$78,330	32	255.2%
Allied Health	Healthcare Administrator	\$70,310	317	91.8%
	Family / School Social Worker	\$46,195	264	91.2%
	Substance Abuse Counselor	\$45,740	74	94.9%
	Medical Laboratory Technician..	\$42,935	126	84.4%
	Medical / Clinical Social Worker	\$42,287	53	101.2%

Average Salary (Bureau of Labor Statistics), Demand Size and Ratio of Demand to Supply broken down by Career Field and Occupation Title. The data is filtered on Action (BGTOCC Title,Career Field Calculations), Region, Exclusions (Occupation Title,BGTOCC,Career Field), Degree Type, SUPPLY: Total - All Education Levels and DEMAND: Total - All Education Levels. The Action (BGTOCC Title,Career Field Calculations) filter keeps 180 members. The Region filter keeps North Dakota. The Exclusions (Occupation Title,BGTOCC,Career Field) filter keeps 180 members. The Degree Type filter keeps Bachelors +. The SUPPLY: Total - All Education Levels filter ranges from 0 to 10,000. The DEMAND: Total - All Education Levels filter ranges from 0 to 10,000. The view is filtered on Occupation Title, Career Field, sum of Average Salary (Bureau of Labor Statistics) and sum of Ratio of Demand to Supply. The Occupation Title filter has multiple members selected. The Career Field filter keeps 21 of 21 members. The sum of Average Salary (Bureau of Labor Statistics) filter ranges from \$20,000 to \$100,000. The sum of Ratio of Demand to Supply filter ranges from 50.0% to 300.0%.

Detailed Crosstab

Career Field	Occupation Title	Average Salary (Bureau of Labor Statistics)	Demand Size	Ratio of Demand to Supply
Allied Health	Physical Therapist	\$66,970	103	91.2%
	Safety Manager / Specialist	\$55,560	45	86.8%
	Medical Scientist	\$66,400	34	74.6%
	Physician Assistant	\$87,060	62	103.0%
	Dietitian / Nutritionist	\$47,620	52	86.9%
	Psychologist	\$69,377	52	104.9%
	Occupational Therapist	\$56,120	50	78.6%
	Speech Language Pathologist	\$53,950	32	74.3%
Nursing	Registered Nurse	\$53,260	994	103.2%
	Nursing Manager / Supervisor	\$70,310	138	106.8%
	Director of Nursing	\$70,310	42	98.8%
	Nurse Practitioner	\$83,040	68	102.6%
	Intensive / Critical Care Nurse	\$53,260	61	105.4%
	Nursing Instructor / Professor	\$59,430	32	79.9%
Finance	Accountant	\$51,240	281	104.2%
	Bookkeeper / Accounting Clerk	\$33,030	123	112.6%
	Financial Analyst	\$61,300	118	89.5%
	Financial Manager	\$89,300	84	103.4%
	Auditor	\$51,240	160	103.4%
	Treasurer / Controller	\$89,300	68	102.1%
	Credit Analyst	\$48,620	53	95.2%
	Loan Officer	\$55,300	77	89.3%
	Compliance Analyst	\$54,200	37	105.4%
	Financial Services Sales Agent	\$45,350	33	181.3%
	Claims Representative / Adjust..	\$44,530	38	93.5%
Engineering	Civil Engineer	\$67,860	172	106.6%
	Industrial & Manufacturing Engi..	\$69,836	85	97.1%
	Transportation Engineer	\$67,860	58	112.6%
	Electrical Engineer	\$75,770	110	133.0%
	Mechanical Engineer	\$71,114	102	94.3%
	Health and Safety Engineer	\$66,830	40	140.7%
	Validation Engineer	\$73,630	40	77.2%
	Environmental Engineer	\$71,880	37	106.5%
	Electrical / Electronic Engineeri..	\$51,417	30	182.6%
Clerical and Admin	Office / Administrative Assistant	\$32,030	339	95.9%
	Bookkeeper / Accounting Clerk	\$33,030	123	112.6%
	Enrollment / Eligibility Specialist	\$36,920	62	99.0%
	Human Resources Assistant	\$34,750	57	93.0%
	Office Manager	\$43,060	42	88.3%

Average Salary (Bureau of Labor Statistics), Demand Size and Ratio of Demand to Supply broken down by Career Field and Occupation Title. The data is filtered on Action (BGTOCC Title,Career Field Calculations), Region, Exclusions (Occupation Title,BGTOCC,Career Field), Degree Type, SUPPLY: Total - All Education Levels and DEMAND: Total - All Education Levels. The Action (BGTOCC Title,Career Field Calculations) filter keeps 180 members. The Region filter keeps North Dakota. The Exclusions (Occupation Title,BGTOCC,Career Field) filter keeps 180 members. The Degree Type filter keeps Bachelors +. The SUPPLY: Total - All Education Levels filter ranges from 0 to 10,000. The DEMAND: Total - All Education Levels filter ranges from 0 to 10,000. The view is filtered on Occupation Title, Career Field, sum of Average Salary (Bureau of Labor Statistics) and sum of Ratio of Demand to Supply. The Occupation Title filter has multiple members selected. The Career Field filter keeps 21 of 21 members. The sum of Average Salary (Bureau of Labor Statistics) filter ranges from \$20,000 to \$100,000. The sum of Ratio of Demand to Supply filter ranges from 50.0% to 300.0%.

Detailed Crosstab

Career Field	Occupation Title	Average Salary (Bureau of Labor Statistics)	Demand Size	Ratio of Demand to Supply
Clerical and Admin	Paralegal / Legal Assistant	\$41,840	39	102.0%
Research, Planning, and Analysis	Research, Planning, & Analysis	\$55,791	730	93.5%
	Systems Analyst	\$59,470	141	120.9%
	Financial Analyst	\$61,300	118	89.5%
	Logistician / Logistics Analyst	\$56,260	67	138.2%
	Credit Analyst	\$48,620	53	95.2%
	Business Intelligence Analyst	\$63,290	45	93.6%
	Compliance Analyst	\$54,200	37	105.4%
	Business / Management Analyst	\$57,350	65	90.2%
	Compensation / Benefits Analyst	\$47,840	30	113.7%
Human Services	Family / School Social Worker	\$46,195	264	91.2%
	Substance Abuse Counselor	\$45,740	74	94.9%
	Enrollment / Eligibility Specialist	\$36,920	62	99.0%
	Medical / Clinical Social Worker	\$42,287	53	101.2%
	Social / Human Service Assista..	\$27,800	56	81.5%
Hospitality, Food, and Tourism	Restaurant/Food Service Mana..	\$32,274	321	138.4%
Life and Phys. Sciences	Environmental Scientist / Speci..	\$58,200	66	157.1%
	Soil / Water Conservationist	\$63,140	52	93.8%
	Biologist, Microbiologist, Biolog..	\$50,880	82	78.2%
	Medical Scientist	\$66,400	34	74.6%
Transportation	Logistician / Logistics Analyst	\$56,260	67	138.2%
	Transportation Engineer	\$67,860	58	112.6%
Construction & Architecture	Construction Manager, Foreman	\$58,840	73	83.0%
	Estimator	\$53,520	32	143.6%
	Architect	\$65,190	26	70.5%
Energy and Environment	Environmental Scientist / Speci..	\$58,200	66	157.1%
	Soil / Water Conservationist	\$63,140	52	93.8%
Manufacturing and Production	Industrial & Manufacturing Engi..	\$69,836	85	97.1%
	Production & Plant Managers, ..	\$51,968	50	83.9%
Communications	Journalist / Reporter	\$29,150	35	70.1%
	Editor, Writer, Technical Writer	\$40,598	28	67.8%
Design	Web Designer	\$44,360	30	96.1%
	Graphic Designer / Desktop Pu..	\$29,970	39	87.7%

Average Salary (Bureau of Labor Statistics), Demand Size and Ratio of Demand to Supply broken down by Career Field and Occupation Title. The data is filtered on Action (BGTOCC Title,Career Field Calculations), Region, Exclusions (Occupation Title,BGTOCC,Career Field), Degree Type, SUPPLY: Total - All Education Levels and DEMAND: Total - All Education Levels. The Action (BGTOCC Title,Career Field Calculations) filter keeps 180 members. The Region filter keeps North Dakota. The Exclusions (Occupation Title,BGTOCC,Career Field) filter keeps 180 members. The Degree Type filter keeps Bachelors +. The SUPPLY: Total - All Education Levels filter ranges from 0 to 10,000. The DEMAND: Total - All Education Levels filter ranges from 0 to 10,000. The view is filtered on Occupation Title, Career Field, sum of Average Salary (Bureau of Labor Statistics) and sum of Ratio of Demand to Supply. The Occupation Title filter has multiple members selected. The Career Field filter keeps 21 of 21 members. The sum of Average Salary (Bureau of Labor Statistics) filter ranges from \$20,000 to \$100,000. The sum of Ratio of Demand to Supply filter ranges from 50.0% to 300.0%.

Detailed Crosstab

Career Field	Occupation Title	Average Salary (Bureau of Labor Statistics)	Demand Size	Ratio of Demand to Supply
Clerical and Admin	Office / Administrative Assistant	\$32,030	928	104.2%
	Bookkeeper / Accounting Clerk	\$33,030	287	164.5%
	Medical Coder/Biller/Clerk/Tec..	\$32,630	178	124.8%
	Medical Secretary	\$26,320	112	169.5%
	Loan Processor	\$32,220	56	102.0%
	Payroll Specialist	\$35,410	51	233.1%
	Enrollment / Eligibility Specialist	\$36,920	42	110.5%
	Health Information Technician	\$32,630	37	148.1%
	Human Resources Assistant	\$34,750	58	203.2%
	Office Manager	\$43,060	44	120.8%
Nursing	Registered Nurse	\$53,260	813	128.0%
	Licensed Practical / Vocational ..	\$37,690	466	120.1%
	Intensive / Critical Care Nurse	\$53,260	50	159.9%
Maintenance, Repair, and Installation	Automotive Service Technician..	\$35,175	344	133.4%
	Diesel Mechanic	\$43,280	273	119.6%
	Heavy Equipment Mechanic	\$49,110	177	202.9%
	Maintenance / Service Supervi..	\$60,760	78	150.3%
	HVAC Mechanic / Installer	\$44,570	70	118.1%
	Industrial Mechanic	\$50,600	49	174.7%
Finance	Bookkeeper / Accounting Clerk	\$33,030	287	164.5%
	Loan Processor	\$32,220	56	102.0%
	Payroll Specialist	\$35,410	51	233.1%
	Loan Officer	\$55,300	78	249.4%
	Personal Banker / Banking Sal..	\$41,343	69	196.2%
	Insurance Sales Agent	\$43,530	31	132.1%
Allied Health	Medical Laboratory Technician..	\$42,935	141	127.1%
	Medical Assistant	\$29,870	89	132.9%
	Health Information Technician	\$32,630	37	148.1%
	Occupational Therapy Assistant	\$42,410	66	107.7%
	Pharmacy Technician	\$31,910	48	240.5%
	Physical Therapy Assistant	\$46,750	46	141.4%
	Surgical Technician / Technolo..	\$37,240	46	162.6%
	EMT / Paramedic	\$24,820	36	93.6%
Healthcare (Clerical & Support)	Medical Coder/Biller/Clerk/Tec..	\$32,630	178	124.8%
	Medical Secretary	\$26,320	112	169.5%
	Medical Transcriptionist	\$30,200	35	102.0%
Manufacturing and Production	Machinist & CNC Operator	\$38,400	132	98.0%
	Welder / Solderer	\$41,160	124	91.4%

Average Salary (Bureau of Labor Statistics), Demand Size and Ratio of Demand to Supply broken down by Career Field and Occupation Title. The data is filtered on Action (BGTOCC Title,Career Field Calculations), Region, Exclusions (Occupation Title,BGTOCC,Career Field), Degree Type, SUPPLY: Total - All Education Levels and DEMAND: Total - All Education Levels. The Action (BGTOCC Title,Career Field Calculations) filter keeps 180 members. The Region filter keeps North Dakota. The Exclusions (Occupation Title,BGTOCC,Career Field) filter keeps 180 members. The Degree Type filter keeps Sub-Baccalaureate. The SUPPLY: Total - All Education Levels filter ranges from 0 to 10,000. The DEMAND: Total - All Education Levels filter ranges from 0 to 10,000. The view is filtered on Occupation Title, Career Field, sum of Average Salary (Bureau of Labor Statistics) and sum of Ratio of Demand to Supply. The Occupation Title filter has multiple members selected. The Career Field filter keeps 21 of 21 members. The sum of Average Salary (Bureau of Labor Statistics) filter ranges from \$20,000 to \$100,000. The sum of Ratio of Demand to Supply filter ranges from 50.0% to 300.0%.

Detailed Crosstab

Career Field	Occupation Title	Average Salary (Bureau of Labor Statistics)	Demand Size	Ratio of Demand to Supply
Manufacturing and Production	Manufacturing / Production Tec..	\$44,210	30	98.9%
Computer & IT	Computer Support Specialist	\$39,940	230	117.8%
	Network/Systems Administrator..	\$59,326	45	94.9%
Engineering	Electrical / Electronic Engineeri..	\$51,417	101	87.5%
	Manufacturing / Production Tec..	\$44,210	30	98.9%
	Surveying / Mapping Technician	\$38,140	46	127.3%
Human Services	Enrollment / Eligibility Specialist	\$36,920	42	110.5%
Education	Teacher Assistant	\$26,800	37	94.0%
	Preschool / Childcare Teacher	\$21,910	23	80.8%

Average Salary (Bureau of Labor Statistics), Demand Size and Ratio of Demand to Supply broken down by Career Field and Occupation Title. The data is filtered on Action (BGTOCC Title,Career Field Calculations), Region, Exclusions (Occupation Title,BGTOCC,Career Field), Degree Type, SUPPLY: Total - All Education Levels and DEMAND: Total - All Education Levels. The Action (BGTOCC Title,Career Field Calculations) filter keeps 180 members. The Region filter keeps North Dakota. The Exclusions (Occupation Title,BGTOCC,Career Field) filter keeps 180 members. The Degree Type filter keeps Sub-Baccalaureate. The SUPPLY: Total - All Education Levels filter ranges from 0 to 10,000. The DEMAND: Total - All Education Levels filter ranges from 0 to 10,000. The view is filtered on Occupation Title, Career Field, sum of Average Salary (Bureau of Labor Statistics) and sum of Ratio of Demand to Supply. The Occupation Title filter has multiple members selected. The Career Field filter keeps 21 of 21 members. The sum of Average Salary (Bureau of Labor Statistics) filter ranges from \$20,000 to \$100,000. The sum of Ratio of Demand to Supply filter ranges from 50.0% to 300.0%.

APPENDIX - ASSESSED BUILDINGS NEEDS

Report 101: NDUS Assessed Buildings Summary

Report 111: Assessed Buildings Summaries for 11 Schools, by School

101 North Dakota University System Integrated Facility Condition Report

all \$\$\$ values in thousands

Bismarck State College - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	6YR Deferred Maintenance Requirements (count towards FC)										Program Requirements (non FC)					Total				
					Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY		PROGRAM	Other	Subtotal Program Cost	PI
Amoxy	39,112	8,221	1	2014	0	0	470	349	1,339	0	1,437	0	78	0	3,673	0.45	0	0	0	0	0	0.00	3,673	0.45
Schafer Hall	71,540	19,630	3	2014	0	0	130	0	4,779	0	2,729	0	0	0	7,638	0.39	0	0	0	0	0	0.00	7,638	0.39
Technical Center	95,144	21,341	1	2014	0	0	1,411	306	1,150	0	1,369	0	0	0	4,236	0.20	0	0	0	0	0	0.00	4,236	0.20
Appropriated - Assessed	205,796	49,192			0	0	2,012	655	7,268	0	5,535	0	78	0	15,548	0.32	0	0	0	0	0	0.00	15,548	0.32

Dakota College at Bottineau - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	Program Requirements (non FC)							Total		
																	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI		Cost	FCNI
	16,000	3,812	1	2014	0	0	240	140	1,206	0	256	0	162	0	2,004	0.53	0	0	0	0	0	0	0.00	2,004	0.53	
Nelson Science Center	24,900	5,572	4	2014	0	0	176	270	2,378	0	1,887	126	230	0	5,068	0.91	0	0	0	0	0	0	0	0.00	5,068	0.91
Old Main	60,074	15,181	1	2014	0	0	275	242	2,647	0	2,007	180	164	0	5,515	0.36	0	0	0	0	0	0	0	0.00	5,515	0.36
Thatcher Hall																										
Appropriated - Assessed	100,974	24,564			0	0	691	652	6,232	0	4,150	306	556	0	12,588	0.51	0	0	0	0	0	0	0.00	12,588	0.51	

Dickinson State University - Appropriated - Assessed

6YR Deferred Maintenance Requirements (count towards FC)																	Program Requirements (non FC)						Total		
Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI
Max Hall	83,344	22,443	3	2014	0	0	247	412	4,853	0	5,166	271	200	0	11,148	0.50	0	0	0	0	0	0	0.00	11,148	0.50
Murphy Hall	63,069	15,216	2	2014	0	0	364	0	0	1,437	0	1,437	0	0	1,802	0.12	0	0	0	0	0	0	0.00	1,802	0.12
South Campus Classroom	13,134	2,502	1	2014	0	0	189	89	566	0	212	84	0	0	1,140	0.46	0	0	0	0	0	0	0.00	1,140	0.46
South Campus Office	3,055	708	1	2014	0	0	47	21	68	0	95	19	0	0	250	0.35	0	0	0	0	0	0	0.00	250	0.35
Appropriated - Assessed	162,602	40,970			0	0	848	522	5,486	0	6,910	374	200	0	14,340	0.35	0	0	0	0	0	0	0.00	14,340	0.35

Lake Region State College - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	6YR Deferred Maintenance Requirements (count towards FCI)							Program Requirements (non FCI)					Total
																	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI				
Library	15,000	3,538	1	2014	0	0	0	102	251	0	243	0	0	0	0	596	0.17	0	0	0	0	0	0	0.00	596	0.17			
Main Building	46,438	9,440	1	2014	0	0	1	433	2,370	0	860	0	116	0	3,780	0.40	0	0	0	0	0	0	0	0.00	3,780	0.40			
Student Union	43,438	6,038	1	2014	0	0	0	133	3,672	0	395	13	61	0	4,274	0.71	0	0	0	0	0	0	0	0.00	4,274	0.71			
Appropriated - Assessed	104,876	19,016			0	0	1	668	6,293	0	1,498	13	177	0	8,650	0.45	0	0	0	0	0	0	0	0.00	8,650	0.45			

101 North Dakota University System Integrated Facility Condition Report

all \$\$\$ values in thousands

Mayville State University - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	Program Requirements (count towards FCI)							Program Requirements (non FCI)				Total
																	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI			
Classroom Building	21,600	5,095	1	2014	0	0	3	0	1,246	0	489	0	232	0	1,970	0.39	0	0	0	0	0	0	0	0.00	1,970	0.39		
Fieldhouse	33,500	7,186	1	2014	0	0	0	0	2,428	27	645	0	78	0	3,177	0.44	0	0	0	0	0	0	0	0.00	3,177	0.44		
Old Main	55,200	13,938	1	2014	0	0	17	1,040	2,862	0	2,820	686	412	0	7,838	0.56	0	0	0	0	0	0	0	0.00	7,838	0.56		
Appropriated - Assessed	110,300	26,219			0	0	20	1,040	6,536	27	3,954	686	722	0	12,983	0.50	0	0	0	0	0	0	0	0.00	12,983	0.50		

Minot State University - Appropriated - Assessed

6TR Deferred Maintenance Requirements (count towards FCI)															Program Requirements (non FCI)							Total				
Asset Name	GSF	CRV	# Rooms	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Dance	153,000	48,989	3	2014	0	0	1,316	333	11,596	0	3,033	886	2,726	0	19,890	0.41	0	0	0	0	0	0	0	0.00	19,890	0.41
Old Main	110,113	45,636	3	2014	0	0	0	1,167	2,126	0	4,936	660	0	0	8,888	0.19	0	0	0	0	0	0	0	0.00	8,888	0.19
Sylvan Hall	77,787	37,128	3	2014	0	0	25	0	0	0	3,313	0	0	0	3,338	0.09	0	0	0	0	0	0	0	0.00	3,338	0.09
Appropriated - Assessed	340,900	131,753			0	0	1,340	1,500	13,722	0	11,282	1,546	2,726	0	32,116	0.24	0	0	0	0	0	0	0	0.00	32,116	0.24

ND State College of Science - Appropriated - Assessed

6TR Deferred Maintenance Requirements (count towards FCI)															Program Requirements (non FCI)							Total				
Asset Name	GSF	CRV	# Rooms	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Ballweber Hall	26,246	3,626	2	2014	0	0	0	138	266	0	200	105	157	0	866	0.24	0	0	0	0	0	0	0	0.00	866	0.24
Blire Activities Center	102,892	18,263	3	2014	0	0	0	389	2,674	90	2,731	0	2,068	0	7,951	0.44	0	0	0	0	0	0	0	0.00	7,951	0.44
Horton Hall	54,964	10,639	3	2014	0	0	0	0	0	0	506	0	0	0	506	0.05	0	0	0	0	0	0	0	0.00	506	0.05
Appropriated - Assessed	184,102	32,527			0	0	0	527	2,939	90	3,467	105	2,225	0	9,323	0.29	0	0	0	0	0	0	0	0.00	9,323	0.29

North Dakota State University - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	6TR Deferred Maintenance Requirements (count towards FCI)					Program Requirements (non FCI)					Total	
														Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI
Ceres Hall	65,621	11,821	5	2014	0	0	0	734	1,011	0	1,550	263	32	0	3,590	0.30	0	0	0	0	0	0	0.00	3,590	0.30
Civil & Industrial Engineering	32,435	8,090	3	2014	0	0	0	255	2,769	0	790	199	27	0	4,041	0.50	0	0	0	0	0	0	0.00	4,041	0.50
E. Morrow Lebedeff Hall	34,812	7,896	3	2014	0	0	161	475	2,794	0	856	213	57	0	4,557	0.58	0	0	0	0	0	0	0.00	4,557	0.58
Quentin Buckle Building	109,260	29,134	5	2014	0	0	363	0	235	0	3,586	0	154	0	4,338	0.15	0	0	0	0	0	0	0.00	4,338	0.15
Stevens Hall	49,089	13,854	4	2014	0	0	140	255	3,145	374	932	301	793	0	5,941	0.43	0	0	0	0	0	0	0.00	5,941	0.43

101 North Dakota University System Integrated Facility Condition Report

all \$\$\$ values in thousands

North Dakota State University - Appropriated - Assessed

Asset Name	6YR Deferred Maintenance Requirements (count towards FC)														Program Requirements (non FC)							Total			
	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY PROGRAM	Other	Subtotal Program Cost		PI	Cost	FCNI
Sutro Hall	62,294	16,785	3	2014	0	0	0	0	609	232	1,106	382	287	0	2,636	0.16	0	0	0	0	0	0	0.00	2,636	0.16
Van Ks Hall	43,458	11,998	3	2014	0	0	229	218	3,641	0	325	270	1,623	0	6,305	0.53	0	0	0	0	0	0	0.00	6,305	0.53
Walker Hall	48,393	12,024	3	2014	0	0	201	579	4,272	232	1,036	0	1,294	0	7,634	0.63	0	0	0	0	0	0	0.00	7,634	0.63
Appropriated - Assessed	445,382	111,601			0	0	1,095	2,516	18,477	878	10,180	1,622	4,288	0	39,042	0.35	0	0	0	0	0	0	0.00	39,042	0.35

University of North Dakota - Appropriated - Assessed

6YR Deferred Maintenance Requirements (count towards FC)																	Program Requirements (non FC)							Total	
Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Babcock Hall	23,869	4,351	4	2014	0	0	73	97	404	0	485	83	0	0	1,142	0.26	0	0	0	0	0	0	0.00	1,142	0.26
Boyer Streifel Hall/Skybridge	29,496	6,424	2	2014	0	0	210	787	426	118	450	103	23	0	2,117	0.33	0	0	0	0	0	0	0.00	2,117	0.33
Harrington Hall	62,895	10,169	3	2014	0	0	117	284	484	0	520	0	0	0	1,404	0.14	0	0	0	0	988	988	0.10	2,391	0.24
O'Kelly Hall	132,706	24,168	1	2014	0	0	195	479	4,587	0	2,468	396	3	0	8,127	0.34	0	0	0	0	0	0	0.00	8,127	0.34
School of Medicine Health Sciences	277,293	50,661	6	2014	0	0	1,172	501	5,935	905	5,814	789	5	0	15,120	0.30	0	0	0	0	0	0	0.00	15,120	0.30
Appropriated - Assessed	526,259	95,774			0	0	1,766	2,147	11,835	1,022	9,737	1,371	31	0	27,910	0.29	0	0	0	0	988	988	0.01	28,897	0.30

Valley City State University - Appropriated - Assessed

6YR Deferred Maintenance Requirements (count towards FC)															Program Requirements (non FC)							Total			
Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Struct	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Grachten Com	19,240	4,916	2	2014	0	0	0	210	913	0	387	130	105	0	1,744	0.35	0	0	0	0	0	0	0.00	1,744	0.35
McCarthy Hall	25,564	7,984	1	2014	0	0	150	729	2,738	0	1,374	259	336	0	5,586	0.70	0	0	0	0	0	0	0.00	5,586	0.70
McFarland Hall	65,122	17,650	4	2014	0	0	597	1,100	5,394	0	5,023	1,150	96	0	13,359	0.76	0	0	0	0	0	0	0.00	13,359	0.76
Appropriated - Assessed	109,926	30,551			0	0	747	2,038	9,045	0	6,794	1,538	537	0	20,689	0.68	0	0	0	0	0	0	0.00	20,689	0.68

Williston State College - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	6YR Deferred Maintenance Requirements (count towards FC)										Program Requirements (non FC)							Total	
								Ext Envelope	MEP	Elevator	Int Constr + Structure	Fire Protection	FFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI		
Crichton Hall	21,000	5,202	1	2014	0	0	0	163	1,001	0	438	191	0	0	1,813	0.35	0	0	0	0	0	0	0.00	1,813	0.35	
Stevens Hall Addition	15,257	8,760	2	2014	0	22	171	197	3,342	175	899	146	0	0	4,951	0.57	0	0	0	0	0	0	0.00	4,951	0.57	

101 North Dakota University System Integrated Facility Condition Report

all \$\$\$ values in thousands

Williston State College - Appropriated - Assessed

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	Fire and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	Program Requirements (non FCI)				Total
																			SECURITY	PROGRAM	Other	Subtotal Program Cost	
Western State Career and Technology Center	34,000	12,119	1	2014	0	0	0	0	0	0	405	0	0	0	405	0.03	0	0	0	0	0	405	0.03
Appropriated - Assessed	70,257	26,081			0	22	171	360	4,343	175	1,762	337	0	0	7,169	0.27	0	0	0	0	0	7,169	0.27
Overall	2,361,354	588,148			0	22	8,690	12,627	92,177	2,192	65,229	7,903	11,518	0	200,358	0.34	0	0	0	988	988	201,345	0.34

Notes: GSF: Gross Square Footage of the building. CRV: Current Replacement Value in dollars. Insp. Date: Date of last 3rd party condition assessment.

111 - BUILDING EXECUTIVE SUMMARY REPORT

Bismarck State College

Appropriated - Assessed

Armory

Asset Number	15	Year Built	1962
Building GSF	39,112	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Athletic Facility / Gymnasium		



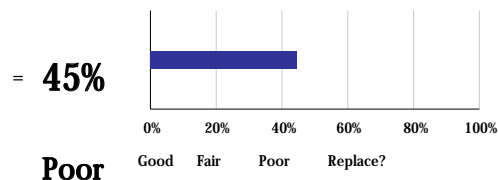
Armory

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$3,673,463
Replacement Value	\$8,220,623

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)



What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	470	349	1,339	0	1,437	0	78	0	3,673	0.45	0	0	0	0	0	0	0.00	3,673	0.45

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	8,488
Door Assembly - 6 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	45,757
Aluminum Windows - Large Units Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	252,564
Door Assembly - 3 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	29,263
Overhead Sectional Doors - Electric Operation Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	13,278
Subtotal					349,350

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Seating - Bleachers Renewal	E - Equipment and Furnishings	Lifecycle	5- Due within 5 Years of Inspection	2019	77,735
Subtotal					77,735

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	6,095

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	85,517
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	334,879
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	235,804
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	60,568
Toilet Partitions - Painted Metal Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	22,691
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	595,817
VCT - Quality Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	5,626
Folding Partitions - Deluxe Renewal	C1010 - Partitions	Lifecycle	5- Due within 5 Years of Inspection	2019	3,540
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	41,823
Rubberized Athletic Flooring Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	44,275
Subtotal					1,436,635

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Rooftop Unitary AC - Cooling w/Gas Heat Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	47,127
HVAC Controls - Basic Pneumatic Renewal	D3060 - Controls and Instrumentation	Lifecycle	5- Due within 5 Years of Inspection	2019	85,536
Boiler HW - Gas-Fired - Average Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	220,770
Window AC Units Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	14,958
Unit Heaters - Hot Water Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	66,883
Scoreboard - Single Sided Renewal	D5031 - Public Address and Music Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	22,195
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	27,652
Distribution Equipment, Panelboards, and Feeders - 400A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	156,178
Main Electrical Service - 400A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	55,062
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	407,628
Telephone System - Wiring Renewal	D5033 - Telephone Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	137,166
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	44,564
Distribution - Heating Ventilating Unit Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	53,635
Subtotal					1,339,354

Other

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Asbestos Abatement		HazMat	7- Not Time Based		0
Subtotal					0

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	5- Due within 5 Years of Inspection	2019	470,390
Subtotal					470,390
Overall					3,673,464

111 - BUILDING EXECUTIVE SUMMARY REPORT

Bismarck State College

Appropriated - Assessed

Schafer Hall

Asset Number	1	Year Built	1961
Building GSF	71,540	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	Classroom / Training		



Schafer Hall

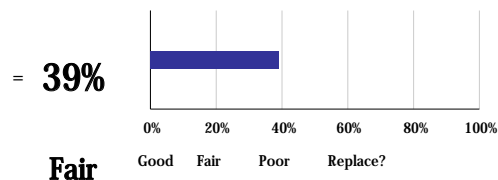
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$7,638,092**

Replacement Value **\$19,630,053**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	130	0	4,779	0	2,729	0	0	0	7,638	0.39	0	0	0	0	0	0	0.00	7,638	0.39

Five Year Needs by Major System Group

Requirements List

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	294,135
Windows/Storefront Partitions Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	23,332
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	82,489
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	147,147
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	672,387
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	110,786
Toilet Partitions - HPL Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	40,488
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	76,498
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	62,977
Carpeting - Broadloom - Medium Range Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	1,164,043
Folding Partitions - Deluxe Renewal	C1010 - Partitions	Lifecycle	5- Due within 5 Years of Inspection	2019	54,998
Subtotal					2,729,280

MEP

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cooling Tower - Heat Pump Renewal	D3030 - Cooling Generating Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	124,675
Heat Exchanger - Steam/HW - Shell and Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	75,766
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	262,273
Heat Pump - Water Source Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	2,872,947
Split System - Ductless Telephone Rm Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	5,149
Controls - Hybrid DDC Renewal	D3060 - Controls and Instrumentation	Lifecycle	2- Due within 2 Years of Inspection	2016	929,858
Distribution Equipment, Panelboards, and Feeders - 600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	6- Due within 6 Years of Inspection	2020	423,748
Main Electrical Service - 600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	6- Due within 6 Years of Inspection	2020	84,233
Subtotal					4,778,649

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Fully Adhered Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	130,164
Subtotal					130,164
Overall					7,638,093

111 - BUILDING EXECUTIVE SUMMARY REPORT

Bismarck State College

Appropriated - Assessed

Technical Center

Asset Number 8 Year Built 1975
 Building GSF 95,144 Inspection Date 2014
 Floors 1
 Ownership Client Owned
 Current Use Classroom / Training



Technical Center

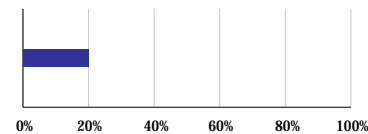
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$4,236,011**

Replacement Value **\$21,341,444**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **20%****Fair**

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	1,411	306	1,150	0	1,369	0	0	0	4,236	0.20	0	0	0	0	0	0	0.00	4,236	0.20

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Strip Windows Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	305,924
Subtotal					305,924

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	71,505
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	154,350
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	315,180
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	197,788
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	77,430
Toilet Partitions - Painted Metal Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	26,817
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	101,738
Concrete - Painted/Sealed Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	56,385
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	367,630
Subtotal					1,368,823

111 - BUILDING EXECUTIVE SUMMARY REPORT

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Boilers - Steam - Gas/Oil-Fired Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	570,166
Heat Exchanger - Steam/HW - Shell and Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	75,766
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	348,808
Underground Fuel Tank - 4000 Gal Renewal	D3011 - Oil Supply System	Lifecycle	3- Due within 3 Years of Inspection	2017	67,701
Cooling Tower - Heat Pump Renewal	D3030 - Cooling Generating Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	87,786
Subtotal					1,150,227

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	1,065,898
Skylights - Monumental Renewal	B3021 - Glazed Roof Openings	Lifecycle	5- Due within 5 Years of Inspection	2019	345,140
Subtotal					1,411,038
Overall					4,236,012

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dakota College at Bottineau

Appropriated - Assessed

Nelson Science Center

Asset Number 24 Year Built 1972
 Building GSF 16,000 Inspection Date 2014
 Floors 1
 Ownership Client Owned
 Current Use Classroom / Training



Nelson Science Center

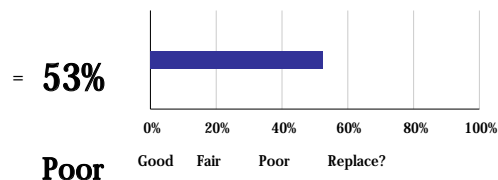
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$2,003,818**

Replacement Value **\$3,811,855**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

**Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	240	140	1,206	0	256	0	162	0	2,004	0.53	0	0	0	0	0	0	0.00	2,004	0.53

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	68
Door Assembly - 6 X 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	74
Paint Renewal	B2010 - Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	5,706
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	133,934
Subtotal					139,782

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	108,980
Millwork - Architectural Finishes - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	52,753
Subtotal					161,733

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Accordion - Vinyl Renewal	C1013 - Retractable Partitions	Lifecycle	4- Due within 4 Years of Inspection	2018	18,247

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Carpeting - Broadloom - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	66,967
Carpeting - Broadloom - Older Renewal	C3020 - Floor Finishes	Lifecycle	4- Due within 4 Years of Inspection	2018	10,225
Stair - Roof Ladder Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	2,782
Toilet Partitions Renewal	C1030 - Fittings	Lifecycle	2- Due within 2 Years of Inspection	2016	6,260
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	2- Due within 2 Years of Inspection	2016	5,857
Paint Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	39,470
Paint - Aged Renewal	C3010 - Wall Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	4,699
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	896
Vinyl Tile - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	30,328
Vinyl Tile - Aged Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	3,791
ACT System - Mineral Fiber Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	61,408
Paint or Stain Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	5,169
Subtotal					256,099

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	10,952
Lighting - Exterior - HPS/HID Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	3- Due within 3 Years of Inspection	2017	3,251
Distribution - Hydronic Piping Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	127,958
Plumbing Fixtures - Custodial Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	5,169
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	148,808
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	207,756
Return Air Ductwork and Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	178,030
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	124,802
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	31,438
Heat Exchanger - Steam/HW - Shell and Tube (Heating) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	71,008
Pneumatic Controls - Basic Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	73,453
Heat Exchanger - Steam/HW - Shell and Tube (DHW) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	38,771
Unit Heaters - HW Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	3,077
Emergency Shower Units (Each) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	9,896
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	61,021
Laboratory Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	25,163
Exhaust System - Fume Hood - Ductwork/Fan (Each) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	78,019
Kitchenette - Cabinet, Counter and Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	7,551
Subtotal					1,206,123

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Roof Hatch Renewal	B3022 - Roof Hatches	Lifecycle	6- Due within 6 Years of Inspection	2020	3,050
Single Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	5- Due within 5 Years of Inspection	2019	217,605
Skylights - Monumental - Faceted Renewal	B3021 - Glazed Roof Openings	Lifecycle	5- Due within 5 Years of Inspection	2019	19,428
Subtotal					240,083
Overall					2,003,820

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dakota College at Bottineau

Appropriated - Assessed

Old Main

Asset Number	1	Year Built	1906
Building GSF	24,900	Inspection Date	2014
Floors	4		
Ownership	Client Owned		
Current Use	Storage - General		



Old Main

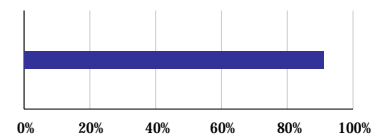
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$5,068,372**

Replacement Value **\$5,571,624**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **91%****Replace?**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	176	270	2,378	0	1,887	126	230	0	5,068	0.91	0	0	0	0	0	0	0.00	5,068	0.91

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Multi-Story - Wood Floors Renewal	B10 - Superstructure	Lifecycle	2- Due within 2 Years of Inspection	2016	10,844
Sloping and Gabled Roof Structure Renewal	B10 - Superstructure	Lifecycle	2- Due within 2 Years of Inspection	2016	7,241
Exterior Stairs - Steel - Straight Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	2- Due within 2 Years of Inspection	2016	20,871
Brick with Tile and Brick Back-Up Renewal	B2010 - Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	31,571
Door Assembly - 6 X 7 WD Renewal	B2030 - Exterior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	14,771
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	185,093
Subtotal					270,391

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	2- Due within 2 Years of Inspection	2016	9,072
Millwork - Architectural Finishes - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	2- Due within 2 Years of Inspection	2016	221,276
Subtotal					230,348

Fire Protection

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Protection - Extinguishers Renewal	D40 - Fire Protection	Lifecycle	1- Due within 1 Year of Inspection	2015	1,497
Fire Alarm System - Average Density Renewal	D5037 - Fire Alarm Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	121,222
Fire Protection - Dry Standpipe Renewal	D40 - Fire Protection	Lifecycle	1- Due within 1 Year of Inspection	2015	3,157
Subtotal					125,876

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Brick, Clay Tile, GWB and CMU Renewal	C1010 - Partitions	Lifecycle	2- Due within 2 Years of Inspection	2016	365,005
Swinging Doors - 3 x 7 and 6 x 7 WD Renewal	C1020 - Interior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	192,214
Stair - High End Renewal	C20 - Stairs	Lifecycle	2- Due within 2 Years of Inspection	2016	66,669
Paint Renewal	C3010 - Wall Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	65,783
Plaster Renewal	C3010 - Wall Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	149,940
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	203,984
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	689
Varnish Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	12,625
Vinyl Tile Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	44,355
Wood Strip Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	323,733
ACT System Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	55,826
Paint Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	27,835
Plaster Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	80,892
Wood Ceiling Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	131,922
Pressed Metal Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	165,312
Stair - Roof Ladder - Wood Renewal	C20 - Stairs	Lifecycle	2- Due within 2 Years of Inspection	2016	526
Subtotal					1,887,310

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	37,431
Restroom Fixtures - Lavatory Renewal	D2010 - Plumbing Fixtures	Lifecycle	1- Due within 1 Year of Inspection	2015	89,205
Telephone System - Light Density Renewal	D5033 - Telephone Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	64,879
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	2,738
Exit Signs - High Density Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	28,252
Exhaust System - Restroom w/Roof Fan Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	17,888
Lighting - Exterior - HPS/HID Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	1- Due within 1 Year of Inspection	2015	3,251
Lighting Fixtures - Interior Renewal	D5022 - Lighting Equipment	Lifecycle	1- Due within 1 Year of Inspection	2015	145,085
Distribution - Hydronic Piping Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	199,134
Plumbing Fixtures - Custodial Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	1- Due within 1 Year of Inspection	2015	5,169
Plumbing Fixtures - Drinking Fountain Renewal	D2010 - Plumbing Fixtures	Lifecycle	1- Due within 1 Year of Inspection	2015	3,136
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	1- Due within 1 Year of Inspection	2015	10,559
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	1- Due within 1 Year of Inspection	2015	210,906
Sanitary Waste - Gravity Disch Renewal	D2030 - Sanitary Waste	Lifecycle	1- Due within 1 Year of Inspection	2015	166,282
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	323,320
Return Air Ductwork and Fan Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	252,321
Switchgear - 800A 208Y/120V + Distribution Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	110,813
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	176,881
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	1- Due within 1 Year of Inspection	2015	70,061

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Heat Exchanger - Steam/HW - Shell and Tube (Heating) Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	71,008
Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	16,196
Pneumatic Controls - Basic Renewal	D3060 - Controls and Instrumentation	Lifecycle	1- Due within 1 Year of Inspection	2015	107,287
Heat Exchanger - Steam/HW - Shell and Tube (DHW) Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	38,771
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	94,964
Main Electrical Service - 800Amp / 208Y/120V/ 3 Phase Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	111,373
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	1- Due within 1 Year of Inspection	2015	15,949
Water Heater - Elec - Residential - 52 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	1- Due within 1 Year of Inspection	2015	5,438
Subtotal					2,378,297

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Asphalt Shingles - Sloped Roof Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	159,540
Gutters Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	5,272
Downspouts Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	2,653
Roof Insulation - Attic Space Renewal	B3013 - Roof Insulation and Fill	Lifecycle	2- Due within 2 Years of Inspection	2016	5,639
Roof Hatch Renewal	B3022 - Roof Hatches	Lifecycle	2- Due within 2 Years of Inspection	2016	3,050
Subtotal					176,154
Overall					5,068,376

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dakota College at Bottineau

Appropriated - Assessed

Thatcher Hall

Asset Number	9	Year Built	1949
Building GSF	60,074	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



Thatcher Hall

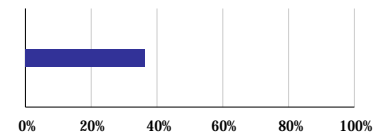
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$5,515,413**

Replacement Value **\$15,180,726**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **36%****Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	275	242	2,647	0	2,007	180	164	0	5,515	0.36	0	0	0	0	0	0	0.00	5,515	0.36

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 Storefront - 1980 Renewal	B2030 - Exterior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	14,310
Aluminum Windows - 1949 Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	177,870
Steel Windows - 1949 Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	12,869
Door Assembly - 3 X 7 HM - 1980 Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	7,637
Door Assembly - 6 X 7 HM - 1980 Renewal	B2030 - Exterior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	29,542
Subtotal					242,228

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous - 2000 Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	98,763
Millwork - Architectural Finishes - Miscellaneous - 1949 Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	65,238
Subtotal					164,001

Fire Protection

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System - Average Density (1949) Renewal	D5037 - Fire Alarm Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	180,007
Subtotal					180,007

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Sauna - 1980 Renewal	C10 - Interior Construction	Lifecycle	2- Due within 2 Years of Inspection	2016	13,312
Toilet Partitions - 1980 Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	6,260
Fittings - Signage (Room Numbering and Identification) - 1980 Renewal	C1035 - Identifying Devices	Lifecycle	2- Due within 2 Years of Inspection	2016	1,245
Paint - 1980 Renewal	C3010 - Wall Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	12,217
Vinyl Tile - 1980 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	6,066
Fittings - Signage (Room Numbering and Identification) - 2007 Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	16,765
Paint - 2007 Renewal	C3010 - Wall Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	58,265
Carpeting - Broadloom - 2007 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	174,907
Carpeting - Broadloom - 2007 - Aged Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	80,443
Concrete - Painted or Sealed - 2007 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	69
Paint - 2007 Renewal	C3030 - Ceiling Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	4,593
Brick, GWB, Plain CMU - 1949 Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	239,942
Swinging Doors - 3 x 7 - 1949 Renewal	C1020 - Interior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	350,105
Stair - Roof Ladder - 1949 Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	2,782
Paint - 2010 Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	93,975
Plaster on Lath - Add - 1949 Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	43,855
Carpeting - Broadloom - 2006 Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	88,487
Carpeting - Broadloom - 2010 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	186,232
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	11,032
Rubber Mats - 2001 Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	74,920
Varnish - 2007 Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	4,967
Varnish - Aged Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	7,037
Vinyl Tile - 2000 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	50,799
ACT System - Concealed Spline - 2000 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	113,366
ACT System - Mineral Fiber - 1980 Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	37,961
Paint - 2010 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	4,175
Plaster - 1949 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	102,319
Plaster - 1949 - Aged Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	14,365
Varnish - 2010 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	26,492
ACT System - Mineral Fiber - 2001 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	55,826
ACT System - Mineral Fiber - Aged - 2001 Renewal	C3030 - Ceiling Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	122,604
Wall Covering - Fiberglass reinforced Plastic (FRP) Renewal	C3010 - Wall Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	1,267
Subtotal					2,006,650

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Split System - Ductless (2007) Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	20,761
Security System - CCTV (2007) Renewal	D5038 - Security and Detection Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	10,952
Sump Pump - Submersible - 1/2 HP (1949) Renewal	D20 - Plumbing	Lifecycle	3- Due within 3 Years of Inspection	2017	2,316
Restroom Fixtures - Group Locker Room Showers (1949) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	46,423

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plumbing Fixtures - Drinking Fountain(1949) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	6,272
Restroom Fixtures - Lavatory (1949) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	25,078
Restroom Fixtures - Urinals (1949) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	15,839
Restroom Fixtures - Water Closets (1949) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	25,551
Domestic Water - Distribution (1949) Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	343,887
Water Heater - Elec - Residential - 52 Gal (1949) Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	5,438
Sanitary Waste - Gravity Disch (1949) Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	246,919
Distribution Duct System (1980) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	22,259
Perimeter Heat System - Hydronic Fin Tube (1949) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	503,061
Return Air Ductwork and Fan (1949) Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	194,831
Split System - Ductless (1949) Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	5,805
Branch Wiring - Equipment & Devices (1949) Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	136,580
Telephone System - Light Density (1949) Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	99,285
Security System - CCTV (1949) Renewal	D5038 - Security and Detection Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	16,428
LAN System - Wiring (1949) Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	107,215
Exit Signs - High Density (1949) Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	68,162
DDC/Pneumatic System - Hybrid - Average (1949) Renewal	D3060 - Controls and Instrumentation	Lifecycle	6- Due within 6 Years of Inspection	2020	319,316
Central AHU - Const Volume w/Distribution (1949) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	97,552
Water Heater - Elec - Residential - 52 Gal (2007) Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	5,438
Distribution - Steam Piping (1949) Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	295,702
Emergency Lighting - Battery Pack (1949) Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	26,408
Subtotal					2,647,478

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single Ply Membrane - Ballasted - Locker Room - 1980 Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	55,690
Single Ply Membrane - Ballasted - Stage - 1960 Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	49,325
Single Ply Membrane - Fully Adhered - Gym - 1991 Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	170,033
Subtotal					275,048
Overall					5,515,412

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dickinson State University

Appropriated - Assessed

May Hall

Asset Number	3	Year Built	1924
Building GSF	83,344	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	Classroom / Training		



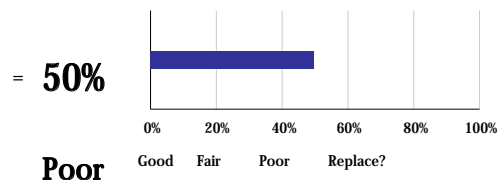
May Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$11,148,422
Replacement Value	\$22,443,026

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)



Poor

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	247	412	4,853	0	5,166	271	200	0	11,148	0.50	0	0	0	0	0	0	0.00	11,148	0.50

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	412,205
Subtotal					412,205

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Seating - Auditorium Renewal	E - Equipment and Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	199,854
Subtotal					199,854

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	270,974
Subtotal					270,974

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	76,327
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	29,535
Windows/Storefront Partitions - Average Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	6,116
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	41,855
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	147,019
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	731,673
GWB Taped and Finished Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	14,163
Structural Terra Cotta Masonry - Stucco Facing 2 Sides Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	1,672,800
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	493,684
Swinging Doors - Pair - 6 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	173,347
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	109,668
Toilet Partitions - Painted Steel Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	44,720
Stairs - Main Stairwells Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	94,126
Rubber Tile - Stairs Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	67,474
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	4- Due within 4 Years of Inspection	2018	1,446,344
VCT - Quality Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	16,774
Subtotal					5,165,625

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
DX Chiller - Air Cooled Renewal	D3030 - Cooling Generating Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	13,239
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	689,527
Liquid Chiller - Air Cooled Renewal	D3030 - Cooling Generating Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	153,474
Cooling Tower - Heat Pump Renewal	D3030 - Cooling Generating Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	89,058
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	60,997
Heat Pump - Water Source Renewal	D3050 - Terminal and Package Units	Lifecycle	4- Due within 4 Years of Inspection	2018	2,044,698
Heat Pump - Thru Wall - PTAC Renewal	D3050 - Terminal and Package Units	Lifecycle	2- Due within 2 Years of Inspection	2016	509,808
Split System - Ductless - Telephone Rm Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	5,208
Controls - Hybrid DDC Renewal	D3060 - Controls and Instrumentation	Lifecycle	4- Due within 4 Years of Inspection	2018	916,194
Telephone System - Wiring Renewal	D5033 - Telephone Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	200,838
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	97,050
Heat Exchanger - Steam/HW - Shell and Tube Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	72,564
Subtotal					4,852,655

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Asphalt Shingled Roofing Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	74,970
Single-Ply Membrane - Fully Adhered Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	169,088
Roof Hatch Renewal	B3022 - Roof Hatches	Lifecycle	6- Due within 6 Years of Inspection	2020	3,052
Subtotal					247,110
Overall					11,148,423

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dickinson State University

Appropriated - Assessed

Murphy Hall

Asset Number	9	Year Built	1970
Building GSF	63,069	Inspection Date	2014
Floors	2		
Ownership	Client Owned		
Current Use	Classroom / Training		



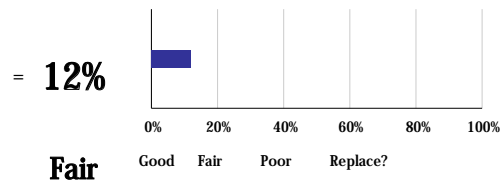
Murphy Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$1,801,608
Replacement Value	\$15,216,165

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)



What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	364	0	0	0	1,437	0	0	0	1,802	0.12	0	0	0	0	0	0	0.00	1,802	0.12

Five Year Needs by Major System Group

Requirements List

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	252,945
Windows/Storefront Partitions - Average Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	5,607
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	41,855
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	111,255
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	547,033
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	120,501
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	88,423
Toilet Partitions - HPL Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	36,503
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	175,392
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	57,759
Subtotal					1,437,273

Roof

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Fully Adhered - 2007 Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	282,559
Single-Ply Membrane - Ballasted - 1994 Renewal	B30 - Roofing	Lifecycle	5- Due within 5 Years of Inspection	2019	81,777
Subtotal					364,336
Overall					1,801,609

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dickinson State University

Appropriated - Assessed

South Campus Classroom

Asset Number	24	Year Built	1950
Building GSF	13,134	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



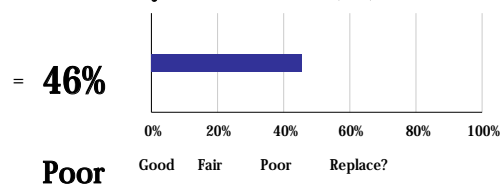
South Campus Classroom

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$1,140,312
Replacement Value	\$2,502,210

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

**Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	189	89	566	0	212	84	0	0	1,140	0.46	0	0	0	0	0	0	0.00	1,140	0.46

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Vinyl Clad Windows Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	27,697
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	12,307
Overhead Sectional Doors - Electric Operation - 12' Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	24,863
Overhead Sectional Doors - Electric Operation - 8' Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	4,830
Wood Wall Louvers Renewal	B2013 - Exterior Louvers, Screens, and Fencing	Lifecycle	5- Due within 5 Years of Inspection	2019	19,567
Subtotal					89,264

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	83,592
Subtotal					83,592

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	17,229
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	14,865
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	24,715
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	8,932
Structural Terra Cotta Masonry - Painted Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	96,964
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	10,515
Wood Flooring - Studio Area Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	8,896
Concrete - Painted Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	18,112
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	12,028
Subtotal					212,256

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plumbing Fixtures - Drinking Fountain Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	3,189
Restroom Fixtures - Lavatory Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	7,357
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	6,547
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	69,747
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	153,626
Telephone System - Wiring Renewal	D5033 - Telephone Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	50,546
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	15,294
Radiant Heaters - Gas Fired - Classroom Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	6,863
Radiant Heaters - Gas Fired - Garage/Storage Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	23,592
Water Heater - Gas Fired - 75 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	7,966
Furnace - Gas Fired Renewal	D3050 - Terminal and Package Units	Lifecycle	4- Due within 4 Years of Inspection	2018	17,226
Split System - Ductless - Darkroom Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	5,208
Distribution Equipment, Panelboards, and Feeders - 800A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	4- Due within 4 Years of Inspection	2018	103,794
Main Electrical Service - 800A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	4- Due within 4 Years of Inspection	2018	95,014
Subtotal					565,969

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Fully Adhered Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	189,229
Subtotal					189,229
Overall					1,140,310

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dickinson State University

Appropriated - Assessed

South Campus Office

Asset Number 23 Year Built 1950
 Building GSF 3,055 Inspection Date 2014
 Floors 1
 Ownership Client Owned
 Current Use Classroom / Training



South Campus Office

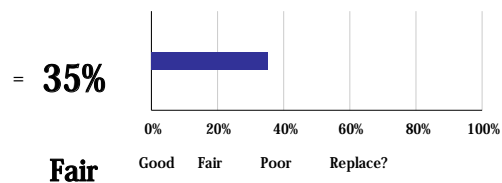
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$250,043**

Replacement Value **\$708,331**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	47	21	68	0	95	19	0	0	250	0.35	0	0	0	0	0	0	0.00	250	0.35

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	7,572
Door Assembly - 3 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	13,376
Subtotal					20,948

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	19,444
Subtotal					19,444

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	14,768
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	3,716
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	5,826
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	10,049

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	4,283
Carpeting - Broadloom - Economy Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	53,556
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	2,798
Subtotal					94,996

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plumbing Fixtures - Custodial Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	5,274
Plumbing Fixtures - Drinking Fountain Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	3,189
Restroom Fixtures - Lavatory Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	7,357
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	6- Due within 6 Years of Inspection	2020	6,547
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	6- Due within 6 Years of Inspection	2020	3,632
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	3,557
Window AC Units Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	3,750
Furnace - Gas Fired Renewal	D3050 - Terminal and Package Units	Lifecycle	4- Due within 4 Years of Inspection	2018	34,452
Subtotal					67,758

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Fully Adhered Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	46,897
Subtotal					46,897
Overall					250,043

111 - BUILDING EXECUTIVE SUMMARY REPORT

Lake Region State College

Appropriated - Assessed

Library

Asset Number	3	Year Built	1966
Building GSF	15,000	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Multipurpose Use		



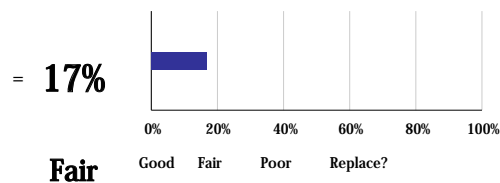
Library

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$596,107
Replacement Value	\$3,538,412

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	102	251	0	243	0	0	0	596	0.17	0	0	0	0	0	0	0.00	596	0.17

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wood Paneled Walls - Fascia Renewal	B2010 - Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	1,920
Paint Renewal	B2010 - Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	4,117
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	96,069
Subtotal					102,106

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Brick, GWB, Plain CMU Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	45,511
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	3,111
Wall Covering - Fiberglass reinforced Plastic (FRP) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	921
Gypsum Drywall - Add Renewal	C3011 - Wall Finishes to Inside Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	1,745
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	139,820
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	276
Vinyl Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	18,576

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Paint Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	4,871
Rubber Mats Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	28,095
Subtotal					242,926

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	11,425
DX Condensing Unit Renewal	D3030 - Cooling Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	72,557
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	6- Due within 6 Years of Inspection	2020	42,205
Lighting - Exterior - HPS Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	5- Due within 5 Years of Inspection	2019	1,625
Telephone System - Light Density Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	27,293
Lighting Fixtures - Interior Renewal	D5022 - Lighting Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	95,969
Subtotal					251,074
Overall					596,106

111 - BUILDING EXECUTIVE SUMMARY REPORT

Lake Region State College

Appropriated - Assessed

Main Building

Asset Number	1	Year Built	1966
Building GSF	46,438	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



Main Building

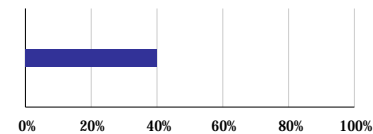
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$3,780,204**

Replacement Value **\$9,440,166**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **40%****Poor**

Good Fair Poor Replace?

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	1	433	2,370	0	860	0	116	0	3,780	0.40	0	0	0	0	0	0	0.00	3,780	0.40

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Paint Renewal	B2010 - Exterior Walls	Lifecycle	1- Due within 1 Year of Inspection	2015	12,351
Wood Paneled Walls Renewal	B2010 - Exterior Walls	Lifecycle	1- Due within 1 Year of Inspection	2015	76,791
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	344,352
Subtotal					433,494

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	115,792
Subtotal					115,792

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Brick, GWB, Plain CMU Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	172,890
Swinging Doors - 3 x 7 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	233,403
Swinging Doors - 3 x 7 - Aged Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	30,720
Fittings - Signage (Room Numbering and	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	12,446

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Identification) Renewal					
Paint - Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	15,976
Paint - Aged Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	2,819
Wall Covering - Vinyl Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	57,270
Wall Covering - Vinyl - Aged Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	10,106
Carpeting - Tile - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	182,942
Carpeting - Tile - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	21,580
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,600
Vinyl Tile - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	69,754
Vinyl Tile - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	41,701
Paint Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	6,959
Subtotal					860,186

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Switchgear - 400A 208Y/120V + Distribution Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	37,234
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	6- Due within 6 Years of Inspection	2020	122,632
Plumbing Fixtures - Custodial Sinks - Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	5,169
Split System - Ductless Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	5,124
DX Condensing Unit - (2005) Renewal	D3030 - Cooling Generating Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	136,196
Exit Signs - High Density Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	52,690
Main Electrical Service - 400Amp / 208Y/120V/ 3 Phase Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	178,138
Switchgear - 800A 208Y/120V + Distribution Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	70,452
Lighting - Exterior - HPS Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	5- Due within 5 Years of Inspection	2019	1,625
Roof Drainage - Gravity - Average Renewal	D2040 - Rain Water Drainage	Lifecycle	3- Due within 3 Years of Inspection	2017	141,817
Main Electrical Service - 800Amp / 208Y/120V/ 3 Phase Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	174,955
Central AHU - VAV System w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	1,443,851
Subtotal					2,369,883

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Skylights - Dome Types Renewal	B3021 - Glazed Roof Openings	Lifecycle	6- Due within 6 Years of Inspection	2020	871
Subtotal					871
Overall					3,780,206

111 - BUILDING EXECUTIVE SUMMARY REPORT

Lake Region State College

Appropriated - Assessed

Student Union

Asset Number	4	Year Built	1966
Building GSF	43,438	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Multipurpose Use		



Student Union

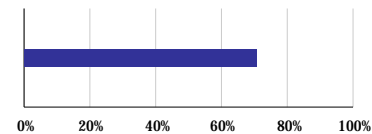
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$4,273,963**

Replacement Value **\$6,037,612**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **71%****Replace?**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	133	3,672	0	395	13	61	0	4,274	0.71	0	0	0	0	0	0	0.00	4,274	0.71

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Paint Renewal	B2010 - Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	4,117
Wood Paneled Walls Renewal	B2010 - Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	51,194
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	77,475
Subtotal					132,786

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Kitchen Walk-in Fridge Renewal	E - Equipment and Furnishings	Lifecycle	2- Due within 2 Years of Inspection	2016	17,410
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	43,543
Subtotal					60,953

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Kitchen Hood Suppression Renewal	D40 - Fire Protection	Lifecycle	3- Due within 3 Years of Inspection	2017	13,357
Subtotal					13,357

111 - BUILDING EXECUTIVE SUMMARY REPORT

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Brick, GWB, Plain CMU Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	56,952
Swinging Doors - 3 x 7 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	68,267
Swinging Doors - 3 x 7 - Aged Renewal	C1020 - Interior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	51,200
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	3,844
Paint Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	25,373
Paint - Aged Renewal	C3010 - Wall Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	2,819
Carpeting - Tile - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	34,807
Carpeting - Tile - Older Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	27,846
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	552
Vinyl Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	91,797
Paint Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	696
Wall Covering - Fiberglass reinforced Plastic (FRP) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	921
Gypsum Drywall - Add Renewal	C3011 - Wall Finishes to Inside Exterior Walls	Lifecycle	2- Due within 2 Years of Inspection	2016	3,927
Laminate Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	25,969
Subtotal					394,970

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Lighting Fixtures - Interior Renewal	D5022 - Lighting Equipment	Lifecycle	5- Due within 5 Years of Inspection	2019	253,100
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	33,087
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	308,569
Central AHU - VAV System w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,449,882
DX Condensing Unit Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	170,245
Lighting - Exterior - HPS Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	5- Due within 5 Years of Inspection	2019	1,625
Main Electrical Service - 400Amp / 240V/120V/ 3 Phase Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	190,404
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	12,760
Return Air Ductwork and Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	440,174
Switchgear - 400A 208Y/120V + Distribution Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	100,381
Telephone System - Light Density Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	113,181
Water Heater - Gas - Comm - 100 MBH Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	41,620
Exhaust System - Kitchen - Commercial Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	21,021
Sump Pump - Submersible - 1/2 HP Renewal	D20 - Plumbing	Lifecycle	3- Due within 3 Years of Inspection	2017	4,631
Custodial/Utility Sinks - Each Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	7,619
Pneumatic Controls - Basic Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	187,161
Water Coolers - Wall-Mounted Dual-Height (Each) Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	3,907
Restroom Fixtures - Lavatory Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	17,913
Sewage Ejector Pump - Simplex Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	8,504
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	5,476
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	10,559
Sanitary Waste - Gravity Disch Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	290,079
Subtotal					3,671,898
Overall					4,273,964

111 - BUILDING EXECUTIVE SUMMARY REPORT

Mayville State University

Appropriated - Assessed

Classroom Building

Asset Number	5	Year Built	1968
Building GSF	21,600	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



Classroom Building

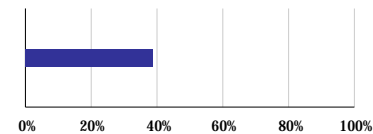
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$1,969,933**

Replacement Value **\$5,095,239**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **39%****Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	3	0	1,246	0	489	0	232	0	1,970	0.39	0	0	0	0	0	0	0.00	1,970	0.39

Five Year Needs by Major System Group

Requirements List

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	89,869
Fixed Seating Renewal	E20 - Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	142,092
Subtotal					231,961

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Folding - Wood Renewal	C1013 - Retractable Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	62,378
Accordion - Wood Renewal	C1013 - Retractable Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	10,184
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	9,414
Paint Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	140,963
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	114,214
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,279
Vinyl Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	136,369
Paint Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	13,747
Subtotal					488,548

111 - BUILDING EXECUTIVE SUMMARY REPORT

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Unit Heaters - Electric (Each) Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	8,780
Roof Drainage - Gravity - Average Renewal	D2040 - Rain Water Drainage	Lifecycle	4- Due within 4 Years of Inspection	2018	70,128
Sump Pump - Submersible - 1/2 HP Renewal	D20 - Plumbing	Lifecycle	3- Due within 3 Years of Inspection	2017	2,463
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	34,637
Exhaust System - Restroom w/Roof Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	5,095
Fan Coil System - Cabinet - Heating/Cooling - 4 Pipe Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	296,155
Lighting - Exterior - HPS Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	3- Due within 3 Years of Inspection	2017	2,978
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	214,044
Distribution - AHU - Room 121 Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	99,705
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	213,660
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	23,369
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	87,902
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	80,468
Water Heater - Elec - Residential - 20 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	7,249
Distribution - AHU - Room 131 Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	99,705
Subtotal					1,246,338

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Roof Hatch Renewal	B3022 - Roof Hatches	Lifecycle	6- Due within 6 Years of Inspection	2020	3,086
Subtotal					3,086
Overall					1,969,933

111 - BUILDING EXECUTIVE SUMMARY REPORT

Mayville State University

Appropriated - Assessed

Fieldhouse

Asset Number	1	Year Built	1960
Building GSF	33,500	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Athletic Facility / Gymnasium		



Fieldhouse

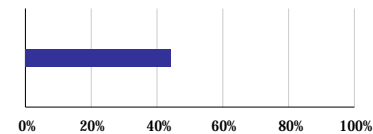
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$3,177,422**

Replacement Value **\$7,185,667**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **44%****Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	2,428	27	645	0	78	0	3,177	0.44	0	0	0	0	0	0	0.00	3,177	0.44

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wheelchair Lift Renewal	D1013 - Lifts	Lifecycle	3- Due within 3 Years of Inspection	2017	26,758
Subtotal					26,758

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	77,614
Subtotal					77,614

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
ACT System - Cellulose Fiber Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	327,519
Paint Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	120,825
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	14,335
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	88,066
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	3,101

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Paint Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	75,610
Folding - Steel Renewal	C1013 - Retractable Partitions	Lifecycle	1- Due within 1 Year of Inspection	2015	14,096
ACT System - Concealed Spline Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,776
Subtotal					645,328

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Return Air Ductwork and Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	9,814
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	127,615
Air Supply System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	172,136
Branch Wiring - Equipment & Devices - Average Density (2003) Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	154,268
Central AHU - Const Volume w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	700,270
D5039 - LAN System - Average Density Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	39,198
Emergency Battery Pack Lights Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	43,183
Exit Signs - High Density Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	54,158
Fan Coil System - Cabinet - Heating Only Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	17,917
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	95,068
Pneumatic Controls - Average Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	261,904
Sanitary Waste - Gravity Disch - Average Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	136,924
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	16,985
Switchgear - 1600 Amp - Average Duty Renewal	D5010 - Electrical Service and Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	104,802
Telephone System - Average Density Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	144,411
Water Coolers - Wall-Mounted (Each) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	15,974
Water Dist Complete - Average Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	184,239
Scoreboard Single-Sided - College/High School Arena Renewal	D5031 - Public Address and Music Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	7,400
Water Heater - Gas - Comm - 100 MBH Renewal	D2020 - Domestic Water Distribution	Lifecycle	4- Due within 4 Years of Inspection	2018	66,650
Storage Water Tank - Steel Renewal	D2023 - Domestic Water Supply Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	22,921
Lighting - Exterior - HID Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	3- Due within 3 Years of Inspection	2017	1,985
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	5,336
Switchgear - 600 Amp - Average Duty Renewal	D5010 - Electrical Service and Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	44,564
Subtotal					2,427,722
Overall					3,177,422

111 - BUILDING EXECUTIVE SUMMARY REPORT

Mayville State University

Appropriated - Assessed

Old Main

Asset Number	4	Year Built	1890
Building GSF	55,200	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



Old Main

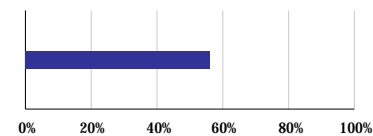
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$7,835,994**

Replacement Value **\$13,937,800**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **56%****Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	17	1,040	2,862	0	2,820	686	412	0	7,836	0.56	0	0	0	0	0	0	0.00	7,836	0.56

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Multi-Story - Wood Floors Renewal	B10 - Superstructure	Lifecycle	1- Due within 1 Year of Inspection	2015	23,313
Sloping and Gabled Roof Structure Renewal	B10 - Superstructure	Lifecycle	1- Due within 1 Year of Inspection	2015	10,665
Exterior Stairs - Steel - Straight Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	1- Due within 1 Year of Inspection	2015	41,477
Brick with Tile and Brick Back-Up Renewal	B2010 - Exterior Walls	Lifecycle	6- Due within 6 Years of Inspection	2020	45,546
Stone and Back-up Renewal	B2010 - Exterior Walls	Lifecycle	6- Due within 6 Years of Inspection	2020	48,083
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	855,744
Fittings - Guardrails Renewal	B2015 - Balcony Walls and Handrails	Lifecycle	1- Due within 1 Year of Inspection	2015	14,735
Subtotal					1,039,563

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	191,696
Cabinets - Miscellaneous - Aged Renewal	E2010 - Fixed Furnishings	Lifecycle	5- Due within 5 Years of Inspection	2019	20,425
Millwork - Architectural Finishes - Miscellaneous - Aged Renewal	E2010 - Fixed Furnishings	Lifecycle	5- Due within 5 Years of Inspection	2019	53,432
Fixed Seating Renewal	E20 - Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	100,895

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Mail Boxes Renewal	E10 - Equipment	Lifecycle	6- Due within 6 Years of Inspection	2020	45,568
Subtotal					412,016

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	202,768
Wet Sprinkler System - Light Hazard wo/Pump Renewal	D40 - Fire Protection	Lifecycle	3- Due within 3 Years of Inspection	2017	483,142
Subtotal					685,910

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Concrete Footings - Interior Renewal	A - Substructure	Lifecycle	1- Due within 1 Year of Inspection	2015	2,380
Foundation Wall and Footings - Perimeter Renewal	A - Substructure	Lifecycle	1- Due within 1 Year of Inspection	2015	9,086
Structural Slab on Grade - Non-Industrial Renewal	A - Substructure	Lifecycle	1- Due within 1 Year of Inspection	2015	7,468
Stairs - Spiral Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	9,254
Swinging Doors - 3 x 7 and 6 x 7 Wood - Aged Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	56,435
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	23,534
Stair - Roof Ladder - Wood Renewal	C20 - Stairs	Lifecycle	1- Due within 1 Year of Inspection	2015	514
Paint - Newer Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	302,400
Paint - Older Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	36,248
Plaster - Aged Renewal	C3010 - Wall Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	39,067
Sound Absorbing Panels Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	5,477
Carpeting - Broadloom - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	679,127
Carpeting - Broadloom - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	93,404
Varnish Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	7,401
Vinyl Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	19,978
Wood Strip Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,037,952
Wood Strip - Aged Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	115,059
ACT System - Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	244,322
ACT System - Aged Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	34,301
ACT System - Concealed Spline Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	13,873
Paint - Newer Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	22,912
Paint - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	4,582
Plaster - Aged Renewal	C3030 - Ceiling Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	18,571
Wood Ceiling Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	7,731
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	5,524
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	23,616
Subtotal					2,820,216

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plumbing Fixtures - Custodial Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	22,023
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	474,518
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	40,697
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	193,003
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	454,910

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Split System - Ductless - Telephone Rm Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	26,217
Main Electrical Service - 200A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	194,380
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	521,974
Telephone System - Wiring Renewal	D5033 - Telephone Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	137,365
LAN System - Wiring Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	192,010
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	59,721
Switchgear - 200A 208Y/120V + Distribution Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	17,806
Water Heater - Elec - Residential - 30 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	4,703
Water Heater - Elec - Residential - 52 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	5,782
Perimeter Heat System - Steam CI Radiators Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	0
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	10,672
Unit Heaters - Electric (Each) Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	21,252
Window AC Units (Each) Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	47,424
Pneumatic Controls - Average Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	437,321
Subtotal					2,861,778

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Roof Insulation - Attic Space Renewal	B3013 - Roof Insulation and Fill	Lifecycle	6- Due within 6 Years of Inspection	2020	12,530
Roof Hatch Renewal	B3022 - Roof Hatches	Lifecycle	1- Due within 1 Year of Inspection	2015	3,086
Skylights - Dome Types Renewal	B3021 - Glazed Roof Openings	Lifecycle	1- Due within 1 Year of Inspection	2015	897
Subtotal					16,513
Overall					7,835,996

111 - BUILDING EXECUTIVE SUMMARY REPORT

Minot State University

Appropriated - Assessed

Dome

Asset Number	23	Year Built	1981
Building GSF	153,000	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	Athletic Stadium		



Dome

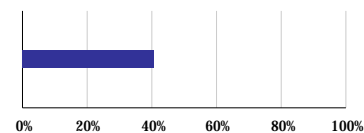
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$19,890,310**

Replacement Value **\$48,988,844**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **41%****Poor**

Good Fair Poor Replace?

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	1,316	333	11,596	0	3,033	886	2,726	0	19,890	0.41	0	0	0	0	0	0	0.00	19,890	0.41

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 6 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	167,281
Door Assembly - 3 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	165,703
Subtotal					332,984

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Bleachers - Gymnasium Renewal	E2010 - Fixed Furnishings	Lifecycle	2- Due within 2 Years of Inspection	2016	2,726,010
Subtotal					2,726,010

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	881,447
Fire Protection - Dry Standpipe Renewal	D40 - Fire Protection	Lifecycle	5- Due within 5 Years of Inspection	2019	4,956
Subtotal					886,403

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	131,841
Windows/Storefront Partitions - Ticket Booth Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	11,525
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	397,188
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	255,458
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	314,557
Toilet Partitions - Painted Metal Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	96,259
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	292,739
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	237,401
Rubberized Athletic Flooring Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,236,469
Ceramic Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	59,833
Subtotal					3,033,270

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Domestic Water - Distribution Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	1,874,696
Distribution - Hydronic Piping Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	1,580,713
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	167,413
Heat Exchanger - Steam/HW - Shell and Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	188,388
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	47,266
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	2,354,281
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	266,095
Distribution - AHU # S1/R1 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	195,467
Distribution - Constant Volume Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	485,388
Scoreboard - Single Sided Renewal	D5031 - Public Address and Music Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	33,912
Lighting - Indoor Sports Arena Renewal	D5022 - Lighting Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	1,454,378
Unit Heaters - Hot Water Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	89,681
Distribution - AHU # S4/R4 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	117,006
Distribution - AHU # S5/R5 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	54,714
Distribution - AHU # S3/R3 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	195,467
Distribution - AHU # S2/R2 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	195,467
Scoreboard - Four Sided Renewal	D5031 - Public Address and Music Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	131,178
Distribution Equipment, Panelboards, and Feeders - 800A 480Y/277V & 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	1,997,575
Main Electrical Service - 800A 480Y/277V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	166,629
Subtotal					11,595,714

Other

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Add Generator		Technological Improvements	7- Not Time Based		0
Subtotal					0

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Fully Adhered Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	1,315,928

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Subtotal					1,315,928
Overall					19,890,309

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Minot State University

Appropriated - Assessed

Old Main

Asset Number	1	Year Built	1913
Building GSF	110,113	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	Classroom / Training		



Old Main

What is our condition?

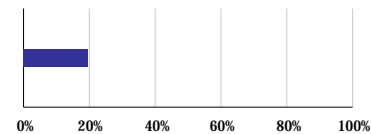
Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$8,888,435**

Replacement Value **\$45,635,675**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **19%**



Fair

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	1,167	2,126	0	4,936	660	0	0	8,888	0.19	0	0	0	0	0	0	0.00	8,888	0.19

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows - 1980 Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	1,166,894
Subtotal					1,166,894

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	659,523
Subtotal					659,523

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	1,002,661
Windows/Storefront Partitions Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	70,920
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	185,224
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	311,289
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,665,239

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Name	Prime System	Category	Priority	Action Year	Requirement Cost
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	246,529
Toilet Partitions - HPL Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	128,764
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	170,855
Rubber Tile Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	250,787
Rubber Treads - Stairs Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	74,036
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	816,732
Concrete - Painted - Auditorium Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	12,944
Subtotal					4,935,980

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Controls - DDC Renewal	D3060 - Controls and Instrumentation	Lifecycle	6- Due within 6 Years of Inspection	2020	1,459,637
Telephone System - Wiring Renewal	D5033 - Telephone Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	436,089
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	191,507
Water Heater - Ele - 80 Gal - Tunnel Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	24,257
Water Heater - Ele - 50 Gal - First Floor Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	14,548
Subtotal					2,126,038
Overall					8,888,435

111 - BUILDING EXECUTIVE SUMMARY REPORT

Minot State University

Appropriated - Assessed

Swain Hall

Asset Number	9	Year Built	1952
Building GSF	77,787	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	Classroom / Training		



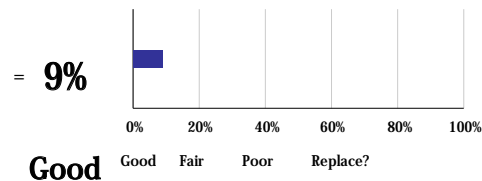
Swain Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$3,337,699
Replacement Value	\$37,128,170

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	25	0	0	0	3,313	0	0	0	3,338	0.09	0	0	0	0	0	0	0.00	3,338	0.09

Five Year Needs by Major System Group

Requirements List

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	595,715
Windows/Storefront Partitions Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	100,885
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	92,612
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	119,240
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,098,970
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	174,155
Toilet Partitions - HPL Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	84,894
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	127,272
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	919,410
Subtotal					3,313,153

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Fully Adhered Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	24,547

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Name	Prime System	Category	Priority	Action Year	Requirement Cost
Subtotal					24,547
Overall					3,337,700

111 - BUILDING EXECUTIVE SUMMARY REPORT

ND State College of Science

Appropriated - Assessed

Ballweber Hall

Asset Number	004	Year Built	1956
Building GSF	26,246	Inspection Date	2014
Floors	2		
Ownership	Client Owned		
Current Use	School		



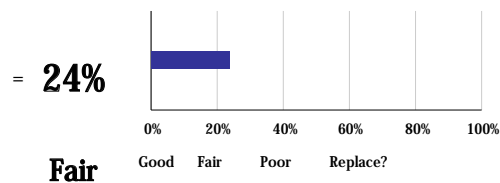
Ballweber Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$865,544
Replacement Value	\$3,625,514

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

**Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	138	266	0	200	105	157	0	866	0.24	0	0	0	0	0	0	0.00	866	0.24

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	23,857
Curtain Wall System - Standard Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	68,199
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	34,149
Door Assembly - 6 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	11,444
Subtotal					137,649

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fencing - Chain Link Renewal	G2041 - Fences and Gates	Lifecycle	6- Due within 6 Years of Inspection	2020	153,883
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	3,235
Subtotal					157,118

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	105,157

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Subtotal					105,157

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	7,702
Paint Masonry/Epoxy Finish - Economy Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	29,709
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	4,873
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	3,175
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	54,326
Epoxy Flooring Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	45,935
VCT - Average Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	1,308
ACT System Renewal	C3030 - Ceiling Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	53,052
Subtotal					200,080

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Main Electrical Service - 800A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	49,691
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	5,755
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	2- Due within 2 Years of Inspection	2016	6,734
Water Coolers Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	2,327
Roof Drainage Renewal	D2040 - Rain Water Drainage	Lifecycle	5- Due within 5 Years of Inspection	2019	47,604
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	23,512
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	10,810
Water Heater - Elec - Residential - 80 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	1- Due within 1 Year of Inspection	2015	4,749
Water Dist Complete - 1956 Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	52,197
Sanitary Waste - 1975 Renewal	D2030 - Sanitary Waste	Lifecycle	5- Due within 5 Years of Inspection	2019	15,729
Branch Wiring - Equipment & Devices - 1956 Renewal	D5021 - Branch Wiring Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	39,803
Kitchenette - Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	2,038
Emergency Eyewash and Shower Units Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	4,590
Subtotal					265,539
Overall					865,543

111 - BUILDING EXECUTIVE SUMMARY REPORT

ND State College of Science

Appropriated - Assessed

Blikre Activities Center

Asset Number 037 Year Built 1977
 Building GSF 102,892 Inspection Date 2014
 Floors 3
 Ownership Client Owned
 Current Use School



Blikre Activities Center

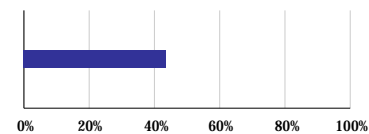
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$7,951,406**

Replacement Value **\$18,262,528**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **44%****Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	389	2,674	90	2,731	0	2,068	0	7,951	0.44	0	0	0	0	0	0	0.00	7,951	0.44

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Hydraulic Passenger Elev. Renewal	D1010 - Elevators and Lifts	Lifecycle	5- Due within 5 Years of Inspection	2019	89,540
Subtotal					89,540

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	8,537
Door Assembly - 6 x 7 Storefront - Older Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	139,633
Door Assembly - 6 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	82,844
Overhead Rolling Doors - Electric Operation - Older Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	9,841
Aluminum Windows - Older Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	148,260
Subtotal					389,115

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	43,130

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Bleachers - Gymnasium Renewal	E2010 - Fixed Furnishings	Lifecycle	3- Due within 3 Years of Inspection	2017	1,808,202
School Equipment - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	216,545
Subtotal					2,067,877

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wood Flooring - Average Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	266,735
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	40,617
Folding Partitions - Average Renewal	C1010 - Partitions	Lifecycle	1- Due within 1 Year of Inspection	2015	20,513
Rubber Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,436,585
Restroom Accessories - Older Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	62,323
Toilet Partitions - Older Renewal	C1030 - Fittings	Lifecycle	3- Due within 3 Years of Inspection	2017	40,464
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	15,190
Paint Masonry/Epoxy Finish - Economy Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	494,103
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	14,536
VCT - Average Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	24,741
ACT System - Newer Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	198,524
Painted Structure Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	21,171
Ceramic Tile Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	53,918
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	41,733
Subtotal					2,731,153

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plumbing Fixtures - Custodial Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	12,303
Plumbing Fixtures - Drinking Fountain Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	18,678
Restroom Fixtures - Lavatory Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	63,852
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	18,843
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	56,863
Distribution - AHU # 1 - # 7 & PAHU Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	614,599
Distribution - Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	610,778
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	92,174
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	42,379
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	221,294
Unit Heaters - Hot Water Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	17,099
Scoreboard Single-Sided - College/High School Arena Renewal	D5031 - Public Address and Music Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	4,134
DX Condensing Unit Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	7,450
DDC/Pneumatic System - Hybrid Renewal	D3060 - Controls and Instrumentation	Lifecycle	5- Due within 5 Years of Inspection	2019	559,552
Water Heater - Gas - Comm - 700 MBH Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	33,141
Scoreboard Four-Sided - College/High School Arena Renewal	D5031 - Public Address and Music Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	16,537
Restroom Fixtures - Tiled Individual Shower Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	42,812
Restroom Fixtures - Group Locker Room Showers Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	137,868
Water Heater - Steam - Storage Tank - Comm Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	103,363
Subtotal					2,673,719

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Overall					7,951,404

111 - BUILDING EXECUTIVE SUMMARY REPORT

ND State College of Science

Appropriated - Assessed

Horton Hall

Asset Number	001	Year Built	1927
Building GSF	54,964	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	School		



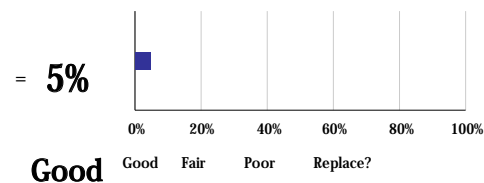
Horton Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$505,742
Replacement Value	\$10,638,603

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	0	0	506	0	0	0	506	0.05	0	0	0	0	0	0	0.00	506	0.05

Five Year Needs by Major System Group

Requirements List

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	19,255
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	139,100
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	341,957
VCT - Average Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	5,430
Subtotal					505,742
Overall					505,742

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Ceres Hall

Asset Number	003	Year Built	1910
Building GSF	65,621	Inspection Date	2014
Floors	5		
Ownership	Client Owned		
Current Use	School		



Ceres Hall

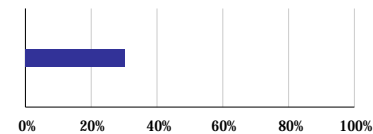
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$3,590,240**

Replacement Value **\$11,820,819**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **30%****Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	734	1,011	0	1,550	263	32	0	3,590	0.30	0	0	0	0	0	0	0.00	3,590	0.30

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows - Older Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	477,297
Exterior Stairs - Steel Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	1- Due within 1 Year of Inspection	2015	140,004
Exterior Walls - Brick Walls - Mortar Joints Aged and Deteriorated	B2010 - Exterior Walls	Reliability	2- Due within 2 Years of Inspection	2016	116,830
Subtotal					734,131

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Older Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	32,348
Subtotal					32,348

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	262,917
Subtotal					262,917

111 - BUILDING EXECUTIVE SUMMARY REPORT

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 Wd - Older Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	198,827
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	36,371
Ceramic Tile - Older Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	12,158
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	211,869
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	550,177
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	139,873
VCT - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	2,931
VCT - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	9,481
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	174,540
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	27,027
Restroom Accessories - Older Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	20,774
Ceramic Tile - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	2,518
Substructure - Defective Foundation Waterproofing	A - Substructure	Reliability	2- Due within 2 Years of Inspection	2016	163,511
Subtotal					1,550,057

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Chiller - Air-Cooled Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	202,184
Window AC Units Renewal	D3050 - Terminal and Package Units	Lifecycle	4- Due within 4 Years of Inspection	2018	26,494
Sump Pump Renewal	D20 - Plumbing	Lifecycle	6- Due within 6 Years of Inspection	2020	1,376
Water Coolers - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	2,327
Water Heater - Elec - Residential - 50 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	4,229
Perimeter Heat System - Steam Radiation Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	362,494
DDC/Pneumatic System - Hybrid Renewal	D3060 - Controls and Instrumentation	Lifecycle	5- Due within 5 Years of Inspection	2019	356,863
Branch Wiring - Equipment & Devices - Older Renewal	D5021 - Branch Wiring Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	54,822
Subtotal					1,010,789
Overall					3,590,242

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Civil & Industrial Engineering

Asset Number 066 Year Built 1965
 Building GSF 32,435 Inspection Date 2014
 Floors 3
 Ownership Client Owned
 Current Use School



Civil & Industrial Engineering

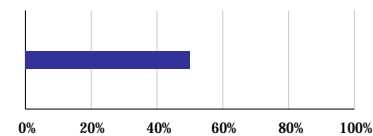
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$4,040,548**

Replacement Value **\$8,090,355**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **50%****Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	255	2,769	0	790	199	27	0	4,041	0.50	0	0	0	0	0	0	0.00	4,041	0.50

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Curtain Wall System - Standard Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	255,032
Subtotal					255,032

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	26,956
Subtotal					26,956

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	198,829
Subtotal					198,829

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - Pair - 6 x 7 Wd - Rated Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	97,338
Swinging Doors - 3 x 7 HM Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	81,949
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	228,154
Restroom Accessories - Older Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	13,850
Toilet Partitions - Older Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	6,903
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	33,126
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	19,670
VCT - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	103,620
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	150,771
Ceramic Tile - Older Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	54,975
Subtotal					790,356

MRP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Custodial/Utility Sinks - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	2- Due within 2 Years of Inspection	2016	24,366
Restroom Fixtures - Urinals - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	5,151
Restroom Fixtures - Lavatories - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	4,924
Restroom Fixtures - Water Closets - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	9,040
Water Dist Complete Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	178,382
Sanitary Waste - Gravity Disch Renewal	D2030 - Sanitary Waste	Lifecycle	5- Due within 5 Years of Inspection	2019	132,571
DX Condensing Units Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	85,577
Distribution - AHU # 1 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	129,066
Distribution - Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	578,469
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	52,011
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	439,274
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	123,558
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	149,363
Main Electrical Service - 1600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	225,769
Distribution Equipment, Panelboards, and Feeders - 1600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	5- Due within 5 Years of Inspection	2019	288,878
Water Heater - Elec - Residential - 80 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	2- Due within 2 Years of Inspection	2016	10,288
Distribution - AHU # 2 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	129,066
Distribution - AHU # 3 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	203,623
Subtotal					2,769,376
Overall					4,040,549

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North Dakota State University

Appropriated - Assessed

E. Morrow Lebedeff Hall

Asset Number 007 Year Built 1953
 Building GSF 34,812 Inspection Date 2014
 Floors 3
 Ownership Client Owned
 Current Use School



E. Morrow Lebedeff Hall

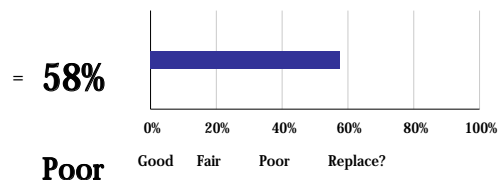
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$4,557,060**

Replacement Value **\$7,895,901**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	161	475	2,794	0	856	213	57	0	4,557	0.58	0	0	0	0	0	0	0.00	4,557	0.58

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exterior Stairs - Concrete Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	1- Due within 1 Year of Inspection	2015	10,817
Aluminum Windows - Older Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	464,552
Subtotal					475,369

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Older Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	57,147
Subtotal					57,147

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	213,401
Subtotal					213,401

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
VCT - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	19,466
Restroom Accessories - Average Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	41,549
Toilet Partitions - Average Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	15,531
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	29,311
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	151,313
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	305,915
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	99,784
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	2,622
VCT - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	29,276
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	161,180
Subtotal					855,947

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Main Electrical Service - 800A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	88,947
Distribution Equipment, Panelboards, and Feeders - 800A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	232,021
Perimeter Heat System - Steam Radiation Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	614,131
Custodial/Utility Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	40,609
Kitchenette - Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	25,541
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	5,151
Restroom Fixtures - Lavatories Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	39,391
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	42,188
Water Coolers Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	16,658
Water Dist Complete Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	191,455
Water Heater - Elec - Residential - 50 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	2- Due within 2 Years of Inspection	2016	7,570
Sanitary Waste - Gravity Disch Renewal	D2030 - Sanitary Waste	Lifecycle	5- Due within 5 Years of Inspection	2019	142,286
Roof Drainage Renewal	D2040 - Rain Water Drainage	Lifecycle	5- Due within 5 Years of Inspection	2019	113,023
Distribution - AHU # 1 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	239,814
Distribution - Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	620,862
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	55,823
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	25,666
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	132,613
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	160,309
Subtotal					2,794,058

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	161,138
Subtotal					161,138
Overall					4,557,060

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Quentin Burdick Building

Asset Number 025 Year Built 1992
 Building GSF 109,260 Inspection Date 2014
 Floors 5
 Ownership Client Owned
 Current Use School



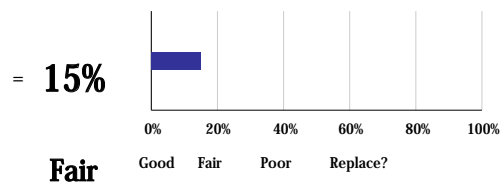
Quentin Burdick Building

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$4,338,081
Replacement Value	\$29,133,870

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	363	0	235	0	3,586	0	154	0	4,338	0.15	0	0	0	0	0	0	0.00	4,338	0.15

Five Year Needs by Major System Group

Requirements List

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	3- Due within 3 Years of Inspection	2017	80,869
Fixed Seating - Average Renewal	E - Equipment and Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	72,841
Subtotal					153,710

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Restroom Accessories - Average Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	83,098
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	69,748
Ceramic Tile Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	150,822
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	331,960
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	865,482
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	188,044
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	33,474
YCT - Average Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	69,905

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	204,887
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	658,305
Access Computer Room Flooring System Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	884,053
Ceramic Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	46,269
Subtotal					3,586,047

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Computer Room Cooling - Liebert Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	235,182
Subtotal					235,182

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	3- Due within 3 Years of Inspection	2017	363,142
Subtotal					363,142
Overall					4,338,081

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Stevens Hall

Asset Number	070	Year Built	1966
Building GSF	49,089	Inspection Date	2014
Floors	4		
Ownership	Client Owned		
Current Use	School		



Stevens Hall

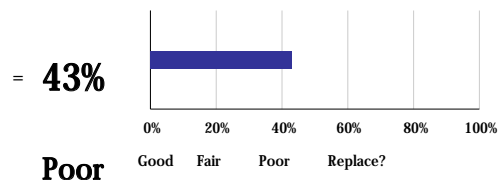
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$5,941,042**

Replacement Value **\$13,854,028**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

**Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	140	255	3,145	374	932	301	793	0	5,941	0.43	0	0	0	0	0	0	0.00	5,941	0.43

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wheelchair Lift Renewal	D1013 - Lifts	Lifecycle	6- Due within 6 Years of Inspection	2020	26,758
Freight Elev Renewal	D1010 - Elevators and Lifts	Lifecycle	1- Due within 1 Year of Inspection	2015	347,286
Subtotal					374,044

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	12,806
Door Assembly - 6 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	107,410
Aluminum Windows - Older Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	135,046
Subtotal					255,262

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Environmental Rooms Renewal	F1022 - Special Purpose Rooms	Lifecycle	1- Due within 1 Year of Inspection	2015	140,934
Pre-Fabricated Buildings - Greenhouse Renewal	G2049 - Miscellaneous Structures	Lifecycle	1- Due within 1 Year of Inspection	2015	38,067

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	32,348
Laboratory Equipment - Older Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	581,563
Subtotal					792,912

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	300,920
Subtotal					300,920

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 HM - Older Renewal	C1020 - Interior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	27,316
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	445,444
Restroom Accessories - Older Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	38,086
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	31,237
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	44,582
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	9,024
VCT - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	156,143
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	180,281
Subtotal					932,113

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Distribution - AHU # 1 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	164,574
Distribution - Constant Volume Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	422,835
Custodial/Utility Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	32,487
Distribution - AHU # 2 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	164,574
Distribution - AHU # 3 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	164,574
Water Heater - Elec - 50 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	1- Due within 1 Year of Inspection	2015	5,782
Exhaust System - Fume Hood - Ductwork/Fan - Older Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	194,488
Rooftop Unitary AC - Cooling w/Steam Heat - Auditorium Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	60,062
Laboratory Sinks - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	287,290
Restroom Fixtures - Urinals - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	7,726
Restroom Fixtures - Lavatories - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	20,229
Restroom Fixtures - Water Closets - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	27,121
Water Coolers - Older Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	12,494
Water Dist Complete Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	269,974
Sanitary Waste Renewal	D2030 - Sanitary Waste	Lifecycle	5- Due within 5 Years of Inspection	2019	200,641
Roof Drainage Renewal	D2040 - Rain Water Drainage	Lifecycle	5- Due within 5 Years of Inspection	2019	149,581
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	78,716
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	36,192
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	634,406
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	205,872
Water Heater - Elec - 50 Gal Renewal	D2020 - Domestic Water	Lifecycle	2- Due within 2 Years of Inspection	2016	5,782

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
	Distribution				
Subtotal					3,145,400

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	140,394
Subtotal					140,394
Overall					5,941,045

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Sudro Hall

Asset Number	052	Year Built	1959
Building GSF	62,294	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	School		



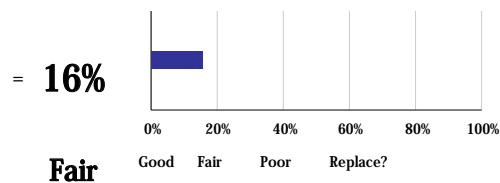
Sudro Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$2,635,704
Replacement Value	\$16,784,645

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	609	252	1,106	382	287	0	2,636	0.16	0	0	0	0	0	0	0.00	2,636	0.16

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Traction Geared Passenger Elev. Renewal	D1010 - Elevators and Lifts	Lifecycle	5- Due within 5 Years of Inspection	2019	251,911
Subtotal					251,911

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Older Renewal	E - Equipment and Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	91,651
Laboratory Equipment - Older Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	195,234
Subtotal					286,885

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	381,868
Subtotal					381,868

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 Wd - Older Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	246,262
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	201,627
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	35,944
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	89,855
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	215,676
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	4,853
VCT - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	138,254
VCT - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	31,840
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	66,772
Ceramic Tile - Older Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	25,796
Swinging Doors - Pair - 6 x 7 Wd - Older Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	48,669
Subtotal					1,105,548

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Distribution - AHU # 2 - 1968 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	164,574
Distribution - AHU # 1 - 1968 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	164,574
Distribution - AHU # 3 - 1968 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	99,705
Restroom Fixtures - Urinals - 1959 Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	7,726
Restroom Fixtures - Water Closets - 1959 Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	15,067
Roof Drainage - 1959 Renewal	D2040 - Rain Water Drainage	Lifecycle	5- Due within 5 Years of Inspection	2019	97,400
DX Condensing Unit - 18 Tons Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	60,445
Subtotal					609,491
Overall					2,635,703

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Van Es Hall

Asset Number	082	Year Built	1976
Building GSF	43,458	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	School		



Van Es Hall

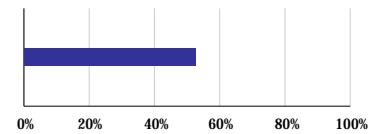
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$6,305,495**

Replacement Value **\$11,998,037**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **53%****Poor**

Good Fair Poor Replace?

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	229	218	3,641	0	325	270	1,623	0	6,305	0.53	0	0	0	0	0	0	0.00	6,305	0.53

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	36,590
Aluminum Windows - Older Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	111,085
Door Assembly - 3 x 7 HM - Older Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	12,806
Door Assembly - 6 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	57,221
Subtotal					217,702

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Lockers - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	110,550
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	40,974
Fixed Seating - Average Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	97,014
Laboratory Equipment - College Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	1,374,727
Subtotal					1,623,265

Fire Protection

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Suppression System - Renewal	D40 - Fire Protection	Lifecycle	5- Due within 5 Years of Inspection	2019	3,222
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	266,401
Subtotal					269,623

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Folding Partitions - Economy Renewal	C1010 - Partitions	Lifecycle	1- Due within 1 Year of Inspection	2015	24,963
Restroom Accessories - Average Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	24,237
Toilet Partitions - Average Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	16,661
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	25,246
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	34,921
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	31,111
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	15,670
VCT - Average Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	151,799
Subtotal					324,608

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Distribution - Constant Volume Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	374,331
Unit Heaters - Gas Fired Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	11,037
Rooftop Unitary AC - Elec. Heat/Cooling - 10 Ton Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	39,840
Custodial/Utility Sinks - Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	24,366
Kitchenette - Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	14,595
Laboratory Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	287,290
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	7,726
Restroom Fixtures - Lavatories Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	14,772
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	33,148
Water Coolers - Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	8,329
Water Dist Complete Renewal	D2020 - Domestic Water Distribution	Lifecycle	5- Due within 5 Years of Inspection	2019	239,005
Chiller - Absorption - Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	472,382
Cooling Tower - Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	65,464
Distribution - AHU # 1 - Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	78,286
Distribution - AHU # 2 - Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	181,565
Distribution - AHU # 3 - Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	181,565
Distribution - AHU # 4 - Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	129,066
Distribution - AHU # 5 - Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	129,066
Distribution - AHU # 6 - Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	78,286
Exhaust System - Fume Hood - Ductwork/Fan Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	556,768
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	69,687
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	32,040
Distribution Equipment, Panelboards, and Feeders - 2500A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	387,053
Main Electrical Service - 2500A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	225,769
Subtotal					3,641,436

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted - Older	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	228,862

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Renewal					
Subtotal					228,862
Overall					6,305,496

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Assessed

Walster Hall

Asset Number	053	Year Built	1959
Building GSF	48,393	Inspection Date	2014
Floors	3		
Ownership	Client Owned		
Current Use	School		



Walster Hall

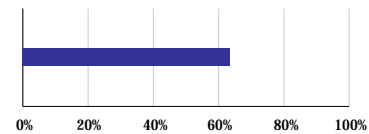
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$7,633,898**

Replacement Value **\$12,023,810**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **63%**

Replace? Good Fair Poor Replace?

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	201	579	4,272	252	1,036	0	1,294	0	7,634	0.63	0	0	0	0	0	0	0.00	7,634	0.63

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Traction Geared Passenger Elev Renewal	D1010 - Elevators and Lifts	Lifecycle	2- Due within 2 Years of Inspection	2016	251,911
Subtotal					251,911

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exterior Stairs - Concrete Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	1- Due within 1 Year of Inspection	2015	9,703
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	569,172
Subtotal					578,875

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Laboratory Equipment - Older Renewal	E - Equipment and Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	1,244,337
Environmental Rooms Renewal	F1022 - Special Purpose Rooms	Lifecycle	2- Due within 2 Years of Inspection	2016	50,054
Subtotal					1,294,391

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 Storefront Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	14,636
Swinging Doors - 3 x 7 HM Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	36,422
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	622,045
Restroom Accessories - Average Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	41,549
Toilet Partitions - Average Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	15,531
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	38,939
Ceramic Tile Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	5,709
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	21,946
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	3,353
YCT - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	189,390
ACT System - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	46,192
Subtotal					1,035,712

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Natural Gas Service to Bldg - 2" Feed Renewal	D3012 - Gas Supply System	Lifecycle	5- Due within 5 Years of Inspection	2019	4,765
Window AC Units Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	15,808
Distribution - Hydronic Piping Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	372,983
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	625,411
Sump Pump Renewal	D20 - Plumbing	Lifecycle	5- Due within 5 Years of Inspection	2019	2,463
Custodial/Utility Sinks Renewal	D2010 - Plumbing Fixtures	Lifecycle	2- Due within 2 Years of Inspection	2016	24,366
Restroom Fixtures - Urinals Renewal	D2010 - Plumbing Fixtures	Lifecycle	2- Due within 2 Years of Inspection	2016	7,726
Restroom Fixtures - Lavatories Renewal	D2010 - Plumbing Fixtures	Lifecycle	2- Due within 2 Years of Inspection	2016	29,543
Restroom Fixtures - Water Closets Renewal	D2010 - Plumbing Fixtures	Lifecycle	2- Due within 2 Years of Inspection	2016	27,121
Water Coolers Renewal	D2010 - Plumbing Fixtures	Lifecycle	4- Due within 4 Years of Inspection	2018	12,494
Water Dist Complete Renewal	D2020 - Domestic Water Distribution	Lifecycle	2- Due within 2 Years of Inspection	2016	266,146
Sanitary Waste - Gravity Disch Renewal	D2030 - Sanitary Waste	Lifecycle	2- Due within 2 Years of Inspection	2016	197,796
Roof Drainage Renewal	D2040 - Rain Water Drainage	Lifecycle	5- Due within 5 Years of Inspection	2019	147,461
Natural Gas Distribution for Lab Renewal	D2090 - Other Plumbing Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	86,845
Distribution - AHU # 1 Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	244,347
Distribution - Variable Volume Ductwork Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	863,075
Exhaust System - Fume Hood - Ductwork/Fan - Older Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	291,731
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	77,600
Exhaust System - Restroom Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	35,679
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	2- Due within 2 Years of Inspection	2016	202,953
Distribution - AHU # 2 Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	244,347
Main Electrical Service - 1200A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	2- Due within 2 Years of Inspection	2016	194,380
Distribution Equipment, Panelboards, and Feeders - 1200A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	2- Due within 2 Years of Inspection	2016	296,706
Subtotal					4,271,746

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	201,266
Subtotal					201,266
Overall					7,633,901

111 - BUILDING EXECUTIVE SUMMARY REPORT

University of North Dakota

Appropriated - Assessed

Babcock Hall

Asset Number	5	Year Built	1908
Building GSF	23,869	Inspection Date	2014
Floors	4		
Ownership	Client Owned		
Current Use	Classroom / Training		



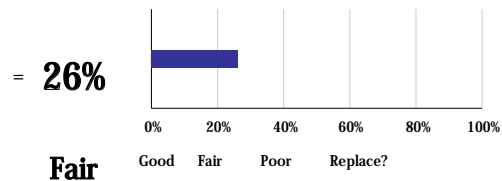
Babcock Hall

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$1,142,312
Replacement Value	\$4,350,881

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	73	97	404	0	485	83	0	0	1,142	0.26	0	0	0	0	0	0	0.00	1,142	0.26

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	4- Due within 4 Years of Inspection	2018	89,018
Exterior Fire Escape - Steel Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	5- Due within 5 Years of Inspection	2019	8,037
Subtotal					97,055

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	83,267
Subtotal					83,267

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plaster Walls - 3 Coats Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	122,683
Stairs - Wood Renewal	C20 - Stairs	Lifecycle	3- Due within 3 Years of Inspection	2017	16,945
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	21,849

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	1999	9,488
Swinging Doors - 3 x 7 Wd - NR - 1950 Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	138,374
Carpeting - Broadloom - 1980 Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	129,074
Carpeting - Broadloom - 2010 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	16,926
Carpeting - Tile - 2010 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	8,551
VT - 9 x 9 Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	7,924
ACT System - 12 x 24 Renewal	C3030 - Ceiling Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	13,017
Subtotal					484,831

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Plumbing Fixtures - Drinking Fountains Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	3,021
Exit Signs Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	23,457
Perimeter Heat System - Steam CI Radiators Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	361,952
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	15,286
Subtotal					403,716

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Asphalt Shingled Roofing Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	39,845
BUR (Built-Up Roofing) Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	33,596
Subtotal					73,441
Overall					1,142,310

111 - BUILDING EXECUTIVE SUMMARY REPORT

University of North Dakota

Appropriated - Assessed

Bryce Streibel Hall/Skybridge

Asset Number	49	Year Built	1985
Building GSF	29,496	Inspection Date	2014
Floors	2		
Ownership	Client Owned		
Current Use	Classroom / Training		



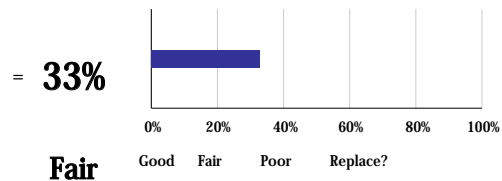
Bryce Streibel Hall/Skybridge

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$2,116,671
Replacement Value	\$6,424,254

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	210	787	426	118	450	103	23	0	2,117	0.33	0	0	0	0	0	0	0.00	2,117	0.33

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Hydraulic Passenger Elevator Renewal	D1010 - Elevators and Lifts	Lifecycle	6- Due within 6 Years of Inspection	2020	117,849
Subtotal					117,849

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	50,443
Brick Masonry Veneer - Deteriorated Masonry	B2010 - Exterior Walls	Reliability	2- Due within 2 Years of Inspection	2016	736,544
Subtotal					786,987

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Pedestrian Pavement - Concrete Renewal	G2030 - Pedestrian Paving	Lifecycle	4- Due within 4 Years of Inspection	2018	3,122
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	16,682
Fixed Casework - Vanities Renewal	E - Equipment and Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	3,107
Subtotal					22,911

111 - BUILDING EXECUTIVE SUMMARY REPORT

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	102,897
Subtotal					102,897

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	4- Due within 4 Years of Inspection	2018	27,000
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	75,161
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	317,159
Concrete - Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,586
VCT Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	20,299
GWB Taped and Finished Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	9,193
Subtotal					450,398

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Condensing Unit - Air Cooled - 26 Ton Rooftop Renewal	D3030 - Cooling Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	47,067
Plumbing Fixtures - Drinking Fountains Renewal	D2010 - Plumbing Fixtures	Lifecycle	4- Due within 4 Years of Inspection	2018	6,042
Heat Pumps - Water Source Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	256,733
Exit Signs Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	28,986
DDC System - Basic Renewal	D3060 - Controls and Instrumentation	Lifecycle	4- Due within 4 Years of Inspection	2018	56,098
Pumps - Heat Pump Loop - Base Mounted - 10 H.P. - Room 118 Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	23,407
Pump - P-3 - Heating Loop Distribution - In-Line Mounted - 1.5 H.P. Renewal	D3040 - Distribution Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	7,556
Subtotal					425,889

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	4- Due within 4 Years of Inspection	2018	209,740
Subtotal					209,740
Overall					2,116,671

111 - BUILDING EXECUTIVE SUMMARY REPORT

University of North Dakota

Appropriated - Assessed

O'Kelly Hall

Asset Number	2	Year Built	1947
Building GSF	132,706	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



O'Kelly Hall

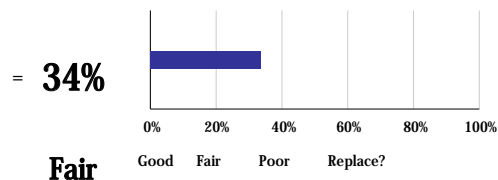
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$8,127,063**

Replacement Value **\$24,168,380**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

**Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	195	479	4,587	0	2,468	396	3	0	8,127	0.34	0	0	0	0	0	0	0.00	8,127	0.34

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wood Windows - 1947 Renewal	B2020 - Exterior Windows	Lifecycle	3- Due within 3 Years of Inspection	2017	387,536
Wood Windows - 1962 Renewal	B2020 - Exterior Windows	Lifecycle	3- Due within 3 Years of Inspection	2017	91,022
Subtotal					478,558

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Access Ladder Renewal	E10 - Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	2,865
Subtotal					2,865

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	395,703
Subtotal					395,703

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 HM - Rated - 1947 Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	25,922
Painted Finish Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	167,655
Carpeting - Broadloom - 2004 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,164,246
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	50,226
ACT System - 12 x 12 Renewal	C3030 - Ceiling Finishes	Lifecycle	4- Due within 4 Years of Inspection	2018	33,880
Swinging Doors - 3 x 7 HM - Rated - 1970 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	25,922
VT - 9 x 9 Renewal	C3020 - Floor Finishes	Lifecycle	2- Due within 2 Years of Inspection	2016	5,516
Carpeting - Broadloom - 1995 Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	739,255
ACT System - 24 x 48 - 1980 Renewal	C3030 - Ceiling Finishes	Lifecycle	4- Due within 4 Years of Inspection	2018	255,762
Subtotal					2,468,384

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	387,775
Perimeter Heat System - Fin Tube - O'Kelly Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,075,699
Heat Exchanger - Steam/HW - Shell and Tube - Rm. 351 Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	68,497
Plumbing Fixtures - Drinking Fountains Renewal	D2010 - Plumbing Fixtures	Lifecycle	5- Due within 5 Years of Inspection	2019	15,105
Exhaust System - O'Kelly Renewal	D3040 - Distribution Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	69,351
Air Distribution - AHUs - Ireland Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	268,720
Air Distribution - Constant Volume Ductwork - O'Kelly Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	559,237
Pneumatic Controls - O'Kelly and Ireland AHUs Renewal	D3060 - Controls and Instrumentation	Lifecycle	5- Due within 5 Years of Inspection	2019	373,281
Condensing Units - Carrier - 10 Ton - Water Cooled Renewal	D3030 - Cooling Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	114,753
Distribution Equipment, Panelboards, and Feeders - 2500A 480Y/277V & 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	4- Due within 4 Years of Inspection	2018	468,911
Exit Signs - Ireland - 4th Flr Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	4,914
Emergency Battery Pack Lights - O'Kelly & Ireland 4th Flr Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	121,675
Main Electrical Service - 600A 4KV - 208Y/120V - Ireland Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	170,431
Branch Wiring - Equipment & Devices - O'Kelly Renewal	D5021 - Branch Wiring Devices	Lifecycle	4- Due within 4 Years of Inspection	2018	740,916
Exit Signs - O'Kelly Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	105,845
Distribution Piping - Aged HVAC Heating System Piping Insulation - O'Kelly Hydronic Piping	D3040 - Distribution Systems	Reliability	2- Due within 2 Years of Inspection	2016	41,735
Subtotal					4,586,845

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
BUR (Built-Up Roofing) Renewal	B30 - Roofing	Lifecycle	3- Due within 3 Years of Inspection	2017	194,707
Subtotal					194,707
Overall					8,127,062

111 - BUILDING EXECUTIVE SUMMARY REPORT

University of North Dakota

Appropriated - Assessed

School of Medicine Health Sciences

Asset Number	12	Year Built	1950
Building GSF	277,293	Inspection Date	2014
Floors	6		
Ownership	Client Owned		
Current Use	Medical - Other		



School of Medicine Health Sciences

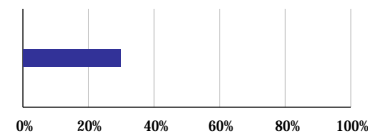
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$15,119,851**

Replacement Value **\$50,661,368**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **30%****Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	1,172	501	5,935	905	5,814	789	5	0	15,120	0.30	0	0	0	0	0	0	0.00	15,120	0.30

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Traction Geared Passenger Elevators Nos. 1 & 2 - 1950 Section Renewal	D1010 - Elevators and Lifts	Lifecycle	3- Due within 3 Years of Inspection	2017	904,577
Subtotal					904,577

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 HM - 1950 - Wings 0, 1, 5 and 9 Renewal	B2030 - Exterior Doors	Lifecycle	4- Due within 4 Years of Inspection	2018	16,814
Aluminum Windows - Wings 0, 1, 5 and 9 Renewal	B2020 - Exterior Windows	Lifecycle	3- Due within 3 Years of Inspection	2017	484,241
Subtotal					501,055

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Access Ladder Renewal	E10 - Equipment	Lifecycle	4- Due within 4 Years of Inspection	2018	4,858
Subtotal					4,858

111 - BUILDING EXECUTIVE SUMMARY REPORT

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	789,004
Subtotal					789,004

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Wings 3 and 7 Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	155,670
Windows/Storefront Partitions - Average Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	6,118
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	195,010
ACT System - 12 x 12 - 1980 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	341,186
GWB Taped and Finished - Wing 3 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	16,280
Structural Terra Cotta Masonry - Plaster Facing 2 Sides - Wings 0, 1, 5 and 9 Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	1,128,828
Swinging Doors - 3-6 x 7 Wd - Wings 0, 1, 5 and 9 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	391,581
Swinging Doors - Pair - 6 x 7 Wd - 2004 - Wing 9 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	12,870
Restroom Accessories Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	332,233
Toilet Partitions - Phenolic Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	82,811
Stairs - Main Stairways - Wings 0, 1, 5 and 9 Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	95,151
Carpeting - Broadloom - Wings 0, 1 and 9 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	234,203
VCT - Wings 1, 3, 5, 7 and 9 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	236,266
Stairs - Stairways - Wings 3 and 7 Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	33,080
Swinging Doors - 2-4 x 7-0 Wd - Wings 0, 1, 5 and 9 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	345,746
Swinging Doors - 3-0 x 7 Wd - Wings 0, 1, 3, 5, 7 and 9 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	1,213,865
Swinging Doors - 3-0 x 7 Wd - 2004 - Wings 1 and 9 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	106,289
Swinging Doors - 3 x 7 HM - NR - Wings 0, 1, 5 and 9 Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	140,392
Swinging Doors - Pair - 4-6 x 7 Wd - Wing 7 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	216,796
Swinging Doors - Pair - 6 x 7 Wd - 1993 - Wings 1, 3, 5, 7 and 9 Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	169,107
GWB Walls - 2000 - Wings 1, 5 and 9 Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	20,712
Vinyl Sheet Goods - Wing 7 Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	19,923
GWB Walls - 1993 - Wings 1, 5 and 9 Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	42,444
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	208,126
VCT - 1980 - Wings 1, 5, and 9 Renewal	C3020 - Floor Finishes	Lifecycle	4- Due within 4 Years of Inspection	2018	69,093
Subtotal					5,813,780

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exhaust System - General Building - 1950 Section Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	142,330
Exhaust System - Restroom - 1950 Section Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	167,574
Steam Piping and Condensate Return - 1950 Section Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	413,559
Perimeter Heat System - Fin Tube - 1950 Section Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,413,512

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Heat Pumps - Water Source - Research-Library-Wing 1 Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	1,081,331
Air Distribution - AHU - Room 6100 Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	62,877
Pneumatic Controls - 1950 Section Renewal	D3060 - Controls and Instrumentation	Lifecycle	5- Due within 5 Years of Inspection	2019	468,064
Water Heater - Steam Semi-Instantaneous - Aerco - Room 1767 Renewal	D2020 - Domestic Water Distribution	Lifecycle	2- Due within 2 Years of Inspection	2016	97,446
Water Heater - Elec - Comm - 120 Gal - Room B560 Renewal	D2020 - Domestic Water Distribution	Lifecycle	2- Due within 2 Years of Inspection	2016	28,193
Pump P-1B - Secondary Chiller Distribution - In-Line Mounted - 50 H.P. Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	39,300
Branch Wiring - Equipment & Devices - Wings 1 and 5 - Floors 1 to 7 Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	696,856
Distribution Equipment, Panelboards, and Feeders 08 - 1200A 208Y/120V - Wings 1 and 5 Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	231,777
Clock System - Research and Library Renewal	D5036 - Clock and Program Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	859,786
Exit Signs - 1950 Section Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	130,537
Cooling Generating Systems - Chiller - McQuay - 400 Ton Centrifugal - Overhaul	D3030 - Cooling Generating Systems	Reliability	2- Due within 2 Years of Inspection	2016	70,725
Condensing Units - Air Cooled - 10 Ton Rooftop Renewal	D3030 - Cooling Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	31,148
Subtotal					5,935,015

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted - Wings 0, 1 and 9 - 2011 Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	202,914
Single-Ply Membrane - Fully Adhered - Cyclotron - 2005 Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	169,524
Single-Ply Membrane - Ballasted - Wings 3 and 7 - 1993 Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	432,675
Translucent Insulating Roof Panels - Wing 7 - 1993 Renewal	B30 - Roofing	Lifecycle	6- Due within 6 Years of Inspection	2020	272,548
BUR (Built-Up Roofing) - Wing 5 Renewal	B30 - Roofing	Lifecycle	4- Due within 4 Years of Inspection	2018	93,901
Subtotal					1,171,562
Overall					15,119,851

111 - BUILDING EXECUTIVE SUMMARY REPORT

Valley City State University

Appropriated - Assessed

Graichen Gym

Asset Number	6	Year Built	1923
Building GSF	19,240	Inspection Date	2014
Floors	2		
Ownership	Client Owned		
Current Use	Athletic Facility / Gymnasium		



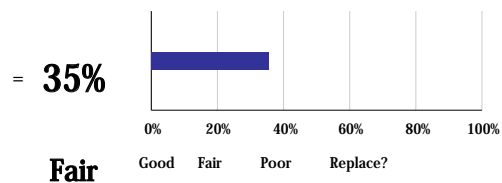
Graichen Gym

What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$1,744,278
Replacement Value	\$4,915,887

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	210	913	0	387	130	105	0	1,744	0.35	0	0	0	0	0	0	0.00	1,744	0.35

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows - 1981 Renewal	B2020 - Exterior Windows	Lifecycle	6- Due within 6 Years of Inspection	2020	209,916
Subtotal					209,916

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Bleachers - Gymnasium - Wood Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	105,320
Subtotal					105,320

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System - Average Density Renewal	D5037 - Fire Alarm Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	129,506
Subtotal					129,506

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Concrete - Painted or Sealed Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	5,234
Stairs - Steel - Spiral Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	22,715
Plaster - Aged Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	6,511
Swinging Doors - 3 x 7 and 6 x 7 HM & Wood - Older Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	37,624
Toilet Partitions - 1923 Renewal	C1030 - Fittings	Lifecycle	1- Due within 1 Year of Inspection	2015	4,674
Fittings - Signage (Room Numbering and Identification) - Older Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	2,567
Paint - Newer Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	72,495
Paint - Older Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	8,055
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	155,290
Varnish and Line Painting Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	49,930
Paint - Newer Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	6,874
Paint - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	687
Plaster Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	13,928
Subtotal					386,584

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Water Dist Complete - Average Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	116,188
Pneumatic Controls - Average Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	165,166
Branch Wiring - Equipment & Devices - Average Density (2003) Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	12,757
Central AHU - Const Volume w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	156,347
D5039 - LAN System - Average Density Renewal	D5039 - Local Area Networks	Lifecycle	4- Due within 4 Years of Inspection	2018	16,986
Emergency Battery Pack Lights Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	24,801
Exit Signs - High Density Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	31,104
Return air Duct and Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	197,042
Sanitary Waste - Gravity Disch - Average Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	83,788
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	32,679
Sump Pump - Submersible - 1/2 HP Renewal	D20 - Plumbing	Lifecycle	3- Due within 3 Years of Inspection	2017	2,463
Switchgear - Average Duty Renewal	D5010 - Electrical Service and Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	61,688
Telephone System - Average Density Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	11,942
Subtotal					912,951
Overall					1,744,277

111 - BUILDING EXECUTIVE SUMMARY REPORT

Valley City State University

Appropriated - Assessed

McCarthy Hall

Asset Number	1	Year Built	1930
Building GSF	25,564	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



McCarthy Hall

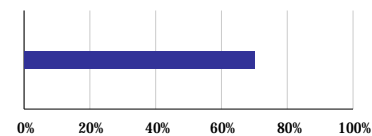
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$5,585,744**

Replacement Value **\$7,984,185**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **70%****Replace?**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	150	729	2,738	0	1,374	259	336	0	5,586	0.70	0	0	0	0	0	0	0.00	5,586	0.70

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	31,261
Paint Renewal	B2010 - Exterior Walls	Lifecycle	1- Due within 1 Year of Inspection	2015	6,578
Precast Concrete Renewal	B2010 - Exterior Walls	Lifecycle	1- Due within 1 Year of Inspection	2015	6,564
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	6- Due within 6 Years of Inspection	2020	669,523
Door Assembly - 3 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	14,895
Subtotal					728,821

FFE and Site

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous - Pre 1989 Renewal	E2010 - Fixed Furnishings	Lifecycle	1- Due within 1 Year of Inspection	2015	95,996
Millwork - Architectural Finishes - Miscellaneous Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	59,213
Cabinets - Miscellaneous - 1989 Renewal	E2010 - Fixed Furnishings	Lifecycle	6- Due within 6 Years of Inspection	2020	8,170
Student Lockers Renewal	E1020 - Institutional Equipment	Lifecycle	1- Due within 1 Year of Inspection	2015	172,449
Subtotal					335,828

Fire Protection

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System - Average Density Renewal	D5037 - Fire Alarm Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	172,073
Fire Protection - Dry Standpipe Renewal	D40 - Fire Protection	Lifecycle	3- Due within 3 Years of Inspection	2017	86,458
Subtotal					258,531

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 and 6 x 7 Wood - Aged Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	37,624
Paint - Newer Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	36,659
Carpeting - Broadloom - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	266,883
ACT System - Pre 2000 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	29,727
Floor Finishes - Unknown Tile Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	8,291
Paint - Older Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	16,110
ACT System - Concealed Spline Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	29,965
Swinging Doors - 3 x 7 and 6 x 7 Wood Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	197,745
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	11,125
Carpeting - Broadloom - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	34,693
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	15,744
Wood Strip Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	489,960
Paint - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	4,582
ACT System - 2000 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	16,007
Paint - Newer Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	140,963
Folding - Wood Renewal	C1013 - Retractable Partitions	Lifecycle	1- Due within 1 Year of Inspection	2015	14,141
Varnish Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	24,120
Subtotal					1,374,339

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exhaust System - General Building Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	28,150
Perimeter Heat System - Steam CI Radiators Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	86,515
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	292,046
Branch Wiring - Equipment & Devices - Average Density Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	117,722
Central AHU - Const Volume w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	534,379
Cooling - DX w/Air Cooled Remote Condenser Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	22,153
D5039 - LAN System - Average Density Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	156,745
Distribution Equipment, Panelboards, and Feeders 04 - 400A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	133,105
Exit Signs - Average Density Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	41,328
Fan Coil System - Cabinet - Heating Only - 2 Pipe Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	13,797
Lighting - Exterior - HID Wall Packs Renewal	D5020 - Lighting and Branch Wiring	Lifecycle	3- Due within 3 Years of Inspection	2017	3,971
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	292,046
Perimeter Heat System - Steam CI Radiators Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	86,515
Pneumatic Controls - Average Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	199,860

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Return Air Ductwork and Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	275,688
Sanitary Waste - Gravity Disch - Average Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	111,329
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	3,397
Switchgear - Average Duty Renewal	D5010 - Electrical Service and Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	23,522
Telephone System - Average Density Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	110,201
Water Coolers - Wall-Mounted Dual-Height (Each) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	11,980
Water Dist Complete - Average Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	154,377
Water Heater - Electric - Tankless Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	14,110
Window AC Units (Each) Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	25,293
Subtotal					2,738,229

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single Ply Membrane - Fully Adhered - Roof Section B Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	105,535
Single Ply Membrane - Ballasted - Roof Section A Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	29,469
Single Ply Membrane - Fully Adhered - Roof Section C Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	4,284
Single Ply Membrane - Fully Adhered - Roof Section G Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	1,963
Single Ply Membrane - Fully Adhered - Roof Section H Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	8,746
Subtotal					149,997
Overall					5,585,745

111 - BUILDING EXECUTIVE SUMMARY REPORT

Valley City State University

Appropriated - Assessed

McFarland Hall

Asset Number 3 Year Built 1892
 Building GSF 65,122 Inspection Date 2014
 Floors 4
 Ownership Client Owned
 Current Use Classroom / Training



McFarland Hall

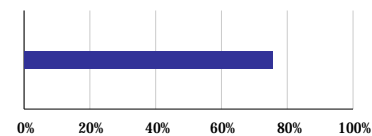
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$13,358,556**

Replacement Value **\$17,650,496**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **76%****Replace?**

Good Fair Poor Replace?

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	597	1,100	5,394	0	5,023	1,150	96	0	13,359	0.76	0	0	0	0	0	0	0.00	13,359	0.76

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Stone and Back-up Renewal	B2010 - Exterior Walls	Lifecycle	1- Due within 1 Year of Inspection	2015	48,083
Multi-Story - Wood Floors Renewal	B10 - Superstructure	Lifecycle	1- Due within 1 Year of Inspection	2015	25,919
Sloping and Gabled Roof Structure Renewal	B10 - Superstructure	Lifecycle	1- Due within 1 Year of Inspection	2015	9,368
Exterior Stairs - Steel - Straight Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	1- Due within 1 Year of Inspection	2015	18,112
Glass Block Renewal	B2010 - Exterior Walls	Lifecycle	6- Due within 6 Years of Inspection	2020	584
Exterior Stairs - Concrete Renewal	B1015 - Exterior Stairs and Fire Escapes	Lifecycle	1- Due within 1 Year of Inspection	2015	17,727
Door Assembly - 6 X 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	7,497
Brick with Tile and Brick Back-Up Renewal	B2010 - Exterior Walls	Lifecycle	1- Due within 1 Year of Inspection	2015	116,713
Steel Windows Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	780,237
Wood Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	34,735
Door Assembly - 3 X 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	27,126
Door Assembly - Power Assist Door Openers Renewal	B2030 - Exterior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	13,578
Subtotal					1,099,679

FFE and Site

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Cabinets - Miscellaneous - Aged Renewal	E2010 - Fixed Furnishings	Lifecycle	5- Due within 5 Years of Inspection	2019	26,552
Millwork - Architectural Finishes - Miscellaneous - Aged Renewal	E2010 - Fixed Furnishings	Lifecycle	5- Due within 5 Years of Inspection	2019	69,461
Subtotal					96,013

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Protection - Dry Standpipe Renewal	D40 - Fire Protection	Lifecycle	3- Due within 3 Years of Inspection	2017	543,908
Fire Alarm System - Average Density Renewal	D5037 - Fire Alarm Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	399,204
Standpipe System - Light Hazard Renewal	D40 - Fire Protection	Lifecycle	3- Due within 3 Years of Inspection	2017	206,709
Subtotal					1,149,821

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Paint - Older Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	9,165
Pressed Metal Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	143,220
Wood Ceiling Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	77,306
Plaster - Aged Renewal	C3030 - Ceiling Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	30,178
Sound Absorbing Panels Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	4,779
ACT System - Concealed Spline Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	33,294
Wood Strip Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	1,349,338
Structural Slab on Grade - Non-Industrial Renewal	A - Substructure	Lifecycle	1- Due within 1 Year of Inspection	2015	9,708
ACT System - 2000 Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	195,458
Brick, Clay Tile, GWB and CMU Renewal	C1010 - Partitions	Lifecycle	1- Due within 1 Year of Inspection	2015	842,962
Stair - Roof Ladders Renewal	C20 - Stairs	Lifecycle	1- Due within 1 Year of Inspection	2015	5,580
Swinging Doors - 3 x 7 and 6 x 7 Wood - Aged Renewal	C1020 - Interior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	60,198
Foundation Wall and Footings - Perimeter Renewal	A - Substructure	Lifecycle	1- Due within 1 Year of Inspection	2015	564,964
Swinging Doors - 3 x 7 and 6 x 7 Wood Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	463,086
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	1- Due within 1 Year of Inspection	2015	27,813
Paint - Newer Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	36,248
Paint - Older Renewal	C3010 - Wall Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	40,275
Plaster - Aged Renewal	C3010 - Wall Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	43,408
Carpeting - Broadloom - Newer Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	740,074
Carpeting - Broadloom - Older Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	101,410
Varnish Renewal	C3020 - Floor Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	56,463
Wood Strip - Aged Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	149,577
ACT System - Aged Renewal	C3030 - Ceiling Finishes	Lifecycle	1- Due within 1 Year of Inspection	2015	34,301
Sound Absorbing Panels Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	3,983
Subtotal					5,022,788

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Central AHU - Const Volume w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	262,870
Sump Pump - Submersible - 1/2 HP Renewal	D20 - Plumbing	Lifecycle	3- Due within 3 Years of Inspection	2017	2,463
Water Heater - Electric - 40 Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	5,549
Branch Wiring - Equipment & Devices -	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	273,112

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Average Density Renewal					
Central AHU - Const Volume w/Distribution Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,268,045
D5039 - LAN System - Average Density Renewal	D5039 - Local Area Networks	Lifecycle	3- Due within 3 Years of Inspection	2017	363,643
Exit Signs - High Density Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	105,280
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	776,991
Perimeter Heat System - Steam CI Radiators Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	108,144
Pneumatic Controls - Average Renewal	D3060 - Controls and Instrumentation	Lifecycle	3- Due within 3 Years of Inspection	2017	485,832
Return Air Ductwork and Fan Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	670,159
Sanitary Waste - Gravity Disch - Average Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	242,407
Security System - CCTV Renewal	D5038 - Security and Detection Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	103,813
Switchgear - Average Duty Renewal	D5010 - Electrical Service and Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	68,479
Telephone System - Average Density Renewal	D5033 - Telephone Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	255,661
Water Coolers - Wall-Mounted Dual-Height (Each) Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	23,960
Water Dist Complete - Average Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	358,150
Window AC Units (Each) Renewal	D3050 - Terminal and Package Units	Lifecycle	6- Due within 6 Years of Inspection	2020	18,969
Subtotal					5,393,527

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Roof Insulation - Attic Space Renewal	B3013 - Roof Insulation and Fill	Lifecycle	6- Due within 6 Years of Inspection	2020	10,740
Downspouts Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	52,644
Single Ply Membrane - Ballasted - Roof Section C1 Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	1,801
Single Ply Membrane - Fully Adhered - Roof Section B Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	1,785
Single Ply Membrane - Fully Adhered - Roof Section A1 Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	22,132
Cornice and Gutters Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	141,580
Wood Shingles - Sloped Roof Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	328,926
Single Ply Membrane - Fully Adhered - Roof Section A Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	9,995
Single Ply Membrane - Fully Adhered - Roof Section B1 Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	20,526
Single Ply Membrane - Fully Adhered - Roof Section C Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	6,604
Subtotal					596,733
Overall					13,358,561

111 - BUILDING EXECUTIVE SUMMARY REPORT

Williston State College

Appropriated - Assessed

Crighton Hall

Asset Number	5	Year Built	1976
Building GSF	21,000	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Classroom / Training		



Crighton Hall

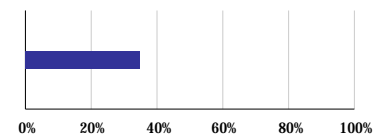
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$1,812,919**

Replacement Value **\$5,202,417**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **35%****Fair**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	163	1,001	0	458	191	0	0	1,813	0.35	0	0	0	0	0	0	0.00	1,813	0.35

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Door Assembly - 3 x 7 HM - 1983 Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	12,457
Overhead Sectional Doors - Electric Operation - 1976 Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	18,854
Vinyl Clad Metal Windows - 1983 Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	23,136
Vinyl Clad Metal Windows - 1976 Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	17,994
Door Assembly - 3 x 7 HM - 1976 Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	18,685
Overhead Sectional Doors - Electric Operation - 1983 Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	9,427
Door Assembly - 6 x 7 Storefront - 1983 Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	62,707
Subtotal					163,260

Fire Protection

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	190,666
Subtotal					190,666

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	169,973
Concrete - Painted Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	23,700
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	29,024
Restroom Accessories - Economy Renewal	C1030 - Fittings	Lifecycle	5- Due within 5 Years of Inspection	2019	22,785
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	168,319
Ceramic Tile - 1983 Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	17,060
Wall Covering - Vinyl Renewal	C3010 - Wall Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	17,297
VCT - Average Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	9,919
Subtotal					458,077

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Water Heater - Gas Fired - 1976 Section - 50-Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	4,113
Furnace - Gas Fired w/ AC- 1976 Section Renewal	D3050 - Terminal and Package Units	Lifecycle	2- Due within 2 Years of Inspection	2016	40,573
Radiant Heaters - Gas Fired - 1976 Bay Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	38,965
Radiant Heaters - Gas Fired - 1983 Bay Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	5,195
Distribution Equipment, Panelboards, and Feeders - 600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	6- Due within 6 Years of Inspection	2020	207,890
Main Electrical Service - 600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	4- Due within 4 Years of Inspection	2018	126,304
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	338,356
Telephone System - Wiring Renewal	D5033 - Telephone Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	118,088
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	36,357
Furnace - Gas Fired w/ AC- 1983 Section Renewal	D3050 - Terminal and Package Units	Lifecycle	5- Due within 5 Years of Inspection	2019	81,146
Water Heater - Gas Fired - 1983 Section - 40-Gal Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	3,929
Subtotal					1,000,916
Overall					1,812,919

111 - BUILDING EXECUTIVE SUMMARY REPORT

Williston State College

Appropriated - Assessed

Stevens Hall Addition

Asset Number	2	Year Built	1975
Building GSF	15,257	Inspection Date	2014
Floors	2		
Ownership	Client Owned		
Current Use	Athletic Facility / Gymnasium		



Stevens Hall Addition

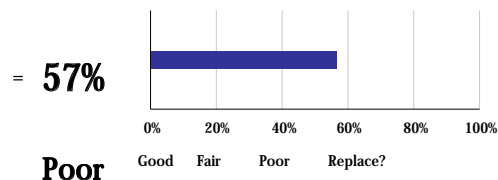
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$4,951,130**

Replacement Value **\$8,760,097**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

**Poor**What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	22	171	197	3,342	175	899	146	0	0	4,951	0.57	0	0	0	0	0	0	0.00	4,951	0.57

Five Year Needs by Major System Group

Requirements List

Building Code

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Electrical Distribution - Obstructed Access	D5012 - Low Tension Service and Dist.	Building Code	1- Due within 1 Year of Inspection	2015	21,603
Subtotal					21,603

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Elevator - Passenger Renewal	D1010 - Elevators and Lifts	Lifecycle	3- Due within 3 Years of Inspection	2017	175,036
Subtotal					175,036

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Aluminum Windows Renewal	B2020 - Exterior Windows	Lifecycle	5- Due within 5 Years of Inspection	2019	81,213
Door Assembly - 3 x 7 HM Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	6,228
Door Assembly - 6 x 7 Storefront Renewal	B2030 - Exterior Doors	Lifecycle	5- Due within 5 Years of Inspection	2019	109,738
Subtotal					197,179

Fire Protection

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fire Alarm System Renewal	D5037 - Fire Alarm Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	146,070
Subtotal					146,070

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
GWB Walls - Standard (Non-Painted) Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	110,719
Windows/Storefront Partitions Renewal	C1010 - Partitions	Lifecycle	6- Due within 6 Years of Inspection	2020	57,890
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	85,389
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	52,693
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	143,681
Swinging Doors - 3 x 7 Wd Renewal	C1020 - Interior Doors	Lifecycle	6- Due within 6 Years of Inspection	2020	167,827
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	32,384
Toilet Partitions - Painted Metal Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	21,968
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	56,448
VCT - Quality Renewal	C3020 - Floor Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	45,090
Ceramic Tile Renewal	C3010 - Wall Finishes	Lifecycle	5- Due within 5 Years of Inspection	2019	10,711
Fittings - Signage (Room Numbering and Identification) Renewal	C1035 - Identifying Devices	Lifecycle	5- Due within 5 Years of Inspection	2019	21,154
Folding Partitions - Band Room Renewal	C1010 - Partitions	Lifecycle	5- Due within 5 Years of Inspection	2019	33,358
Carpeting - Tile Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	48,882
Toilet Partitions - Plastic Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	10,362
Subtotal					898,556

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Distribution - Hydronic Piping Renewal	D3040 - Distribution Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	193,771
Heat Exchanger - Steam/HW - Shell and Tube Renewal	D3040 - Distribution Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	109,859
Steam Piping and Condensate Return Renewal	D3040 - Distribution Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	45,647
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	6- Due within 6 Years of Inspection	2020	267,698
Exit & Emergency Lighting - Battery Pack Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	26,414
Distribution Equipment, Panelboards, and Feeders - 1200A 480Y/277V & 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	2- Due within 2 Years of Inspection	2016	107,797
Main Electrical Service - 1200A 480Y/277V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	2- Due within 2 Years of Inspection	2016	310,291
Scoreboard - Single Sided Renewal	D5031 - Public Address and Music Systems	Lifecycle	6- Due within 6 Years of Inspection	2020	29,389
Controls - Hybrid DDC Renewal	D3060 - Controls and Instrumentation	Lifecycle	2- Due within 2 Years of Inspection	2016	1,434,922
Central Air Handler - Dual Duct Renewal	D3040 - Distribution Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	287,809
Distribution - Dual Duct Renewal	D3040 - Distribution Systems	Lifecycle	4- Due within 4 Years of Inspection	2018	528,402
Subtotal					3,341,999

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	5- Due within 5 Years of Inspection	2019	161,477
Roof Hatch with Skylight Renewal	B3022 - Roof Hatches	Lifecycle	5- Due within 5 Years of Inspection	2019	9,209
Subtotal					170,686
Overall					4,951,129

111 - BUILDING EXECUTIVE SUMMARY REPORT

Williston State College

Appropriated - Assessed

Western Star Career and Technology Center

Asset Number 15 Year Built 2011
 Building GSF 34,000 Inspection Date 2014
 Floors 1
 Ownership Client Owned
 Current Use Classroom / Training



Western Star Career and Technology Center

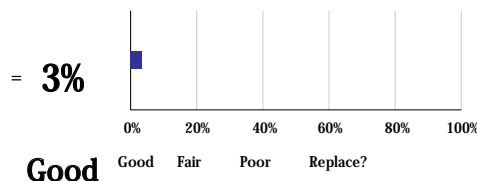
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$404,971**

Replacement Value **\$12,118,964**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

What are potential projects?

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	0	0	405	0	0	0	405	0.03	0	0	0	0	0	0	0.00	405	0.03

Five Year Needs by Major System Group

Requirements List

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Stairs - Welded Steel Renewal	C20 - Stairs	Lifecycle	6- Due within 6 Years of Inspection	2020	11,255
Painted Finish - Average (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	117,479
ACT System - Standard Renewal	C3030 - Ceiling Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	166,075
Restroom Accessories - Standard Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	72,168
Toilet Partitions - HPL Renewal	C1030 - Fittings	Lifecycle	6- Due within 6 Years of Inspection	2020	37,994
Subtotal					404,971
Overall					404,971

APPENDIX - HEATING PLANT NEEDS

Report 101: NDUS Heating Plan Summary

Report 111: Heating Plant Summaries for 11 Schools, by School

101 North Dakota University System Integrated Facility Condition Report

all \$\$\$ values in thousands

Bismarck State College - Appropriated - Heating Plant

6TR Deferred Maintenance Requirements (count towards FCI)														Program Requirements (non FCI)										Total		
Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Heating Plant	1	788	1	2014	0	0	0	0	0	985	0	0	0	0	0	985	1.25	0	0	0	0	0	0	0.00	985	1.25
Appropriated - Heating Plant	1	788			0	0	0	0	985	0	0	0	0	0	0	985	1.25	0	0	0	0	0	0	0.00	985	1.25

Dakota College at Bottineau - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	6YR Deferred Maintenance Requirements (count towards FCI)										Program Requirements (non FCI)							Total		
					Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost
Central Heating Plant	2,117	2,021	1	2014	0	0	20	15	493	0	17	0	0	0	545	0.27	0	0	0	0	0	0.00	545	0.27
Appropriated - Heating Plant	2,117	2,021			0	0	20	15	493	0	17	0	0	0	545	0.27	0	0	0	0	0	0.00	545	0.27

Dickinson State University - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	6YR Deferred Maintenance Requirements (count towards FCI)										Program Requirements (non FCI)					Total
																	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI							
Heating Plant	7,030	4,969	1	2014	0	0	0	34	2,561	0	66	0	0	0	0	2,661	0.54	0	0	0	0	0	0	0	0.00	2,661	0.54					
Appropriated - Heating Plant	7,030	4,969			0	0	0	34	2,561	0	66	0	0	0	0	2,661	0.54	0	0	0	0	0	0	0	0.00	2,661	0.54					

Mayville State University - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	6TR Deferred Maintenance Requirements (count towards FCI)										Program Requirements (non FCI)										Total	
					Life Safety	Building Code	Roof	Ext Envelope	MP	Elevator	Int Constr + Structr	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Central Heating Plant	7,000	4,956	1	2014	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0.00	7	0.00			
Appropriated - Heating Plant	7,000	4,956			0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0.00	7	0.00			

Minot State University - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	6TR Deferred Maintenance Requirements (count towards FCI)										Program Requirements (non FCI)										Total	
					Life Safety	Building Code	Roof	Ext Envelope	MIP	Elevator	Int Constr + Structur	Fire Protection	PFE and Site	Other DM	TOTAL CR/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI	
Plant Services	13,618	6,863	2	2014	0	0	0	3	848	124	20	0	0	0	0	995	0.14	0	0	0	0	0	0	0.00	995	0.14
Appropriated - Heating Plant	13,618	6,863			0	0	0	3	848	124	20	0	0	0	0	995	0.14	0	0	0	0	0	0	0.00	995	0.14

ND State College of Science - Appropriated - Heating Plant

101 North Dakota University System Integrated Facility Condition Report

all \$\$\$ values in thousands

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CE/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Program Requirements (non FCI)				Total	
Central Heating Plant	20,756	9,894	1	2014	0	0	129	107	6,974	0	39	0	0	0	7,250	0.73	0	0	0	0	0	0	0	0	0	7,250	0.73
Appropriated - Heating Plant	20,756	9,894			0	0	129	107	6,974	0	39	0	0	0	7,250	0.73	0	0	0	0	0	0	0	0	0	7,250	0.73

North Dakota State University - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CE/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Program Requirements (non FCI)				Total	
Central Heating Plant	23,002	15,221	1	2014	0	0	112	416	8,258	106	27	0	0	0	8,919	0.59	0	0	0	0	0	0	0	0	0	8,919	0.59
Appropriated - Heating Plant	23,002	15,221			0	0	112	416	8,258	106	27	0	0	0	8,919	0.59	0	0	0	0	0	0	0	0	0	8,919	0.59

University of North Dakota - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CE/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Program Requirements (non FCI)				Total	
Central Heating Plant	40,000	21,624	1	2014	0	0	98	61	5,636	124	99	0	0	0	6,037	0.28	0	0	0	0	0	0	0	0	0	6,037	0.28
Appropriated - Heating Plant	40,000	21,624			0	0	98	61	5,636	124	99	0	0	0	6,037	0.28	0	0	0	0	0	0	0	0	0	6,037	0.28

Valley City State University - Appropriated - Heating Plant

Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CE/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Program Requirements (non FCI)				Total	
Heating Plant	8,601	4,519	1	2014	0	0	0	68	12,281	0	64	0	13	0	12,427	2.75	0	0	0	0	0	0	0	0	0	12,427	2.75
Appropriated - Heating Plant	8,601	4,519			0	0	0	68	12,281	0	64	0	13	0	12,427	2.75	0	0	0	0	0	0	0	0	0	12,427	2.75

Williston State College - Appropriated - Heating Plant

6TR Deferred Maintenance Requirements (count towards FCI)																	Program Requirements (non FCI)							Total	
Asset Name	GSF	CRV	# Floors	INSP DATE	Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	TOTAL CE/DM	FCI	ADA	HAZMAT	SECURITY	PROGRAM	Other	Subtotal Program Cost	PI	Cost	FCNI
Heating Plant - Stevens Hall	800	2,000	1	2014	0	0	0	0	215	0	0	0	0	0	215	0.11	0	0	0	0	0	376	0.19	591	0.30
Appropriated - Heating Plant	800	2,000			0	0	0	0	215	0	0	0	0	0	215	0.11	0	0	0	0	0	376	0.19	591	0.30
Overall	122,925	72,854			0	0	359	705	38,271	354	339	0	13	0	40,040	0.55	0	0	0	0	0	376	0.01	40,416	0.55

Notes: GSF: Gross Square Footage of the building. CRV: Current Replacement Value in dollars. Insp. Date: Date of last 3rd party condition assessment.

111 - BUILDING EXECUTIVE SUMMARY REPORT

Bismarck State College

Appropriated - Heating Plant

Heating Plant

Asset Number 0 Year Built 1900
 Building GSF 1 Inspection Date 2014
 Floors 1
 Ownership
 Current Use



Heating Plant

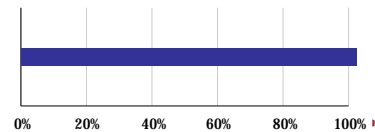
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$984,550**

Replacement Value **\$787,640**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **125%**

Replace?

Good Fair Poor Replace?

What are potential projects?

BSC's heat generation is provided by 2 gas-fired boilers located in the Armory Building. Both are approaching the end of their useful life. Renewal recommended within 3 years.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	985	0	0	0	0	0	985	1.25	0	0	0	0	0	0	0.00	985	1.25

Five Year Needs by Major System Group

Requirements List

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Underground Fuel Tank - 4000 Gal Renewal	D3011 - Oil Supply System	Lifecycle	3- Due within 3 Years of Inspection	2017	67,701
Boiler Hot Water - Gas-Fired Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	440,594
Boiler Steam - Gas-Fired Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	476,255
Subtotal					984,550
Overall					984,550

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dakota College at Bottineau

Appropriated - Heating Plant

Central Heating Plant

Asset Number 10 Year Built 1949
 Building GSF 2,117 Inspection Date
 Floors 1
 Ownership
 Current Use



Central Heating Plant

What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) \$545,266

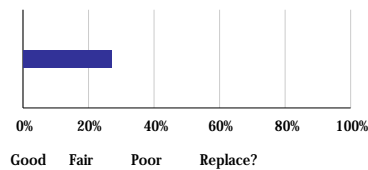
Replacement Value \$2,020,991

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= 27%

Fair



What are potential projects?

DCB installed a new main coal boiler in 2010. The original oil-fired boiler was 50 years old and undersized and now serves as the back-up. The back-up is in need of renewal. Natural gas is not available at their site.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	20	15	493	0	17	0	0	0	545	0.27	0	0	0	0	0	0	0.00	545	0.27

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Steel Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	6,615
Door Assembly - 3 x 7 HM - 1986 Renewal	B2030 - Exterior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	8,407
Subtotal					15,022

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Swinging Doors - 3 x 7 HM - Rated Renewal	C1020 - Interior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	8,428
Stairs - CIP Concrete Renewal	C20 - Stairs	Lifecycle	3- Due within 3 Years of Inspection	2017	6,751
Concrete - Painted - 1998 Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	2,092
Subtotal					17,271

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Boiler - Steam - Oil-Fired - 6.300 MBH	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	292,552

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Renewal					
Deaerator Renewal	D3023 - Auxiliary Equipment	Lifecycle	2- Due within 2 Years of Inspection	2016	143,204
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	7,389
Water Softeners Renewal	D2020 - Domestic Water Distribution	Lifecycle	6- Due within 6 Years of Inspection	2020	3,487
Water Heater - Steam - Storage Tank (Thatcher Hall) Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	43,377
Water Coolers - Wall-Mounted Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	3,310
Subtotal					493,319

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	19,653
Subtotal					19,653
Overall					545,285

111 - BUILDING EXECUTIVE SUMMARY REPORT

Dickinson State University

Appropriated - Heating Plant

Heating Plant

Asset Number 13 Year Built 1935
 Building GSF 7,030 Inspection Date
 Floors 1
 Ownership
 Current Use



Heating Plant

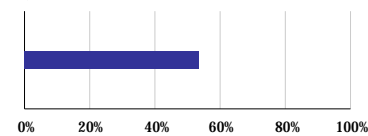
What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$2,661,395
Replacement Value	\$4,968,837

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= 54%



Poor

Good Fair Poor Replace?

What are potential projects?

DSU's heat is provided by (3) gas/oil combination boilers, all original to 1965 installation and in need of major renewal. DSU has received bid estimates for renewal for approximately \$1.02m. DSU has a secondary project for consideration to improve heating efficiency by reducing the number of boilers from 3 to 2, while upgrading heat exchangers and heat pumps in various locations, mostly in May Hall. Cost for second project estimated at \$750k.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	34	2,561	0	66	0	0	0	2,661	0.54	0	0	0	0	0	0	0.00	2,661	0.54

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Story - Steel Framed Roof on Bearing Walls - 1935 Renewal	B10 - Superstructure	Lifecycle	3- Due within 3 Years of Inspection	2017	1,261
Steel Windows Renewal	B2020 - Exterior Windows	Lifecycle	1- Due within 1 Year of Inspection	2015	27,009
Door Assembly - 3 x 7 Wood Renewal	B2030 - Exterior Doors	Lifecycle	1- Due within 1 Year of Inspection	2015	5,894
Subtotal					34,164

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Structural Slab on Grade - Light Industrial - 1935 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	2,605
Swinging Doors - 3 x 7 HM - Rated Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	16,575
Painted Finish - (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	2,349
Wood Paneling Renewal	C3010 - Wall Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	851

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Name	Prime System	Category	Priority	Action Year	Requirement Cost
Carpeting - Broadloom Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	27,186
Vinyl Sheet Goods Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	2,798
ACT System - 1x1 Renewal	C3030 - Ceiling Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	1,477
Painted Plaster Renewal	C3030 - Ceiling Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	12,058
Subtotal					65,899

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Restroom Fixtures Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	21,683
Water Coolers - Wall-Mounted Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	3,378
Water Heater - Gas - 199 MBH - 1995 Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	29,510
Water Heater - Steam - Semi-Instantaneous Renewal	D2020 - Domestic Water Distribution	Lifecycle	2- Due within 2 Years of Inspection	2016	87,266
Sanitary Waste - Gravity Discharge Renewal	D2030 - Sanitary Waste	Lifecycle	3- Due within 3 Years of Inspection	2017	29,548
Fuel Oil Pumps Renewal	D3011 - Oil Supply System	Lifecycle	3- Due within 3 Years of Inspection	2017	9,791
Boiler - Steam - Gas/Oil-Fired - Boiler B1 - 20,920 MBH Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	671,395
Boiler - Steam - Gas/Oil-Fired - Boiler B2 - 20,920 MBH Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	671,395
Boiler - Steam - Gas/Oil-Fired - Boiler B3 - 22,500 MBH Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	712,793
Deaerator Renewal	D3023 - Auxiliary Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	153,706
Perimeter Heat System - Steam Radiators Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	39,163
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	12,378
Window AC Units Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	6,300
Distribution Equipment, Panelboards, and Feeders - 400A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	41,803
Main Electrical Service - 400A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	32,687
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	38,538
Subtotal					2,561,334
Overall					2,661,397

111 - BUILDING EXECUTIVE SUMMARY REPORT

Mayville State University

Appropriated - Heating Plant

Central Heating Plant

Asset Number 32 Year Built 2009
 Building GSF 7,000 Inspection Date 2014
 Floors 1
 Ownership Client Owned
 Current Use



Central Heating Plant

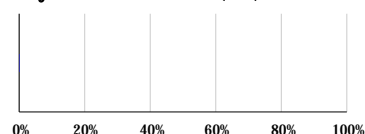
What is our condition?

Deferred Maintenance Needs (incl.
 next 5 YR, in current \$, rounded) **\$6,841**

Replacement Value **\$4,955,939**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **0%**

Good Good Fair Poor Replace?

What are potential projects?

Mayville's coal-fired plant was built in 2009, and is in good operating condition.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	0	0	7	0	0	0	7	0.00	0	0	0	0	0	0	0.00	7	0.00

Five Year Needs by Major System Group

Requirements List

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Painted Finish - (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	4,028
VCT Renewal	C3020 - Floor Finishes	Lifecycle	6- Due within 6 Years of Inspection	2020	2,813
Subtotal					6,841
Overall					6,841

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Minot State University

Appropriated - Heating Plant

Plant Services

Asset Number	1	Year Built	1913
Building GSF	13,618	Inspection Date	
Floors	2		
Ownership	Client Owned		
Current Use	Site Utility		



Plant Services

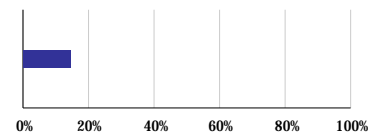
What is our condition?

Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) **\$994,788**

Replacement Value **\$6,863,490**

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **14%****Fair**

Good Fair Poor Replace?

What are potential projects?

Minot's heating is provided by a geo-thermal system installed in 2008-'09, which is operating well. Peak winter capacity is met by adding 2 gas/oil boilers. One smaller gas boiler is used for hot water in the summer. Boiler #4 is a high pressure steam coal-fired boiler that is no longer in use and has been decommissioned. Renewal cost (\$150k) is to remove boiler #4. Other needs listed include mainly supplementary distribution systems.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	3	848	124	20	0	0	0	995	0.14	0	0	0	0	0	0	0.00	995	0.14

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Ash Bucket Elevator (Decommissioned) Renewal	D1090 - Other Conveying Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	84,201
Coal Loading Conveyor (Decommissioned) Renewal	D1090 - Other Conveying Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	39,939
Subtotal					124,140

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Story - Steel Framed Roof on Bearing Walls - 1913 Renewal	B10 - Superstructure	Lifecycle	3- Due within 3 Years of Inspection	2017	2,784
Subtotal					2,784

Int Constr + Structr

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Structural Slab on Grade - Light Industrial - 1913 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	4,362
Concrete - Painted Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	8,528
Foundation Wall and Footings 8-Ft - Full Basement - 1913 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	7,396
Subtotal					20,286

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Boiler #4 - Steam - Stoker Fired (Coal) - 20,000 lb/h (Decommissioned) Renewal	D3020 - Heat Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	148,082
Kitchenette - Cabinet, Counter and Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	8,707
Water Coolers - Wall-Mounted Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	6,908
Water Softeners Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	21,859
Air Compressor Renewal	D2090 - Other Plumbing Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	91,892
Deaerator Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	112,623
Condensate Pumps Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	29,965
Exhaust System Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	41,016
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	18,768
Lighting - Interior - High Bay Renewal	D5022 - Lighting Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	138,659
Underground Fuel Tank - Steel - 20,000 Gal - 1978 Renewal	D3011 - Oil Supply System	Lifecycle	3- Due within 3 Years of Inspection	2017	217,193
Packaged AC Unit - 4 Ton Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	11,908
Subtotal					847,580
Overall					994,790

111 - BUILDING EXECUTIVE SUMMARY REPORT

ND State College of Science

Appropriated - Heating Plant

Central Heating Plant

Asset Number 020 Year Built 1951
 Building GSF 20,756 Inspection Date 2014
 Floors 1
 Ownership Client Owned
 Current Use School



Central Heating Plant

What is our condition?

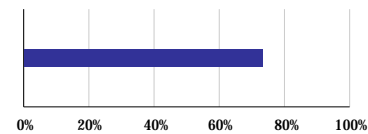
Deferred Maintenance Needs (incl.
next 5 YR, in current \$, rounded) \$7,249,700

Replacement Value \$9,893,543

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= 73%



Replace?

Good Fair Poor Replace?

What are potential projects?

NDSCS' main boiler is a coal-fired boiler that is too big to run except for January and February each winter. This boiler is similar in design and manufacture to UND and NDSU's main boilers, providing each campus with a source of similar parts and expertise. NDSCS turns off the coal-fired boiler in other months and scales heat generation with gas/oil combination boilers #2, #3 and #4. All four boilers have been very well maintained, but it is recommended to plan for replacement as replacement parts are harder and more expensive to locate, tube thickness/ condition is largely unknown, and a newer unit would operate more efficiently. Many systems in the plant building -- including the roof and windows -- are also in need of renewal.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	129	107	6,974	0	39	0	0	0	7,250	0.73	0	0	0	0	0	0	0.00	7,250	0.73

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Exterior Windows - Steel Windows Worn	B2020 - Exterior Windows	Reliability	2- Due within 2 Years of Inspection	2016	32,729
Steel Windows - 1978 Renewal	B2020 - Exterior Windows	Lifecycle	3- Due within 3 Years of Inspection	2017	30,126
Steel Windows - 1951 Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	44,184
Subtotal					107,039

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
VAT Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	1,697
Concrete - Painted Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	31,014
Swinging Doors - Pair - 6 x 7 Wd - Rated Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	4,656
Toilet Partitions - Painted Metal Renewal	C1030 - Fittings	Lifecycle	3- Due within 3 Years of Inspection	2017	1,726

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Name	Prime System	Category	Priority	Action Year	Requirement Cost
Subtotal					39,093

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Water Coolers - Wall-Mounted Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	7,052
Water Dist Complete - 1978 Renewal	D2020 - Domestic Water Distribution	Lifecycle	1- Due within 1 Year of Inspection	2015	18,085
Fuel Oil Pumps Renewal	D3011 - Oil Supply System	Lifecycle	3- Due within 3 Years of Inspection	2017	51,325
Boiler #1 - Over-fire Air Fan Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	64,142
Boiler #1 - Steam - Stoker Fired (Coal) - 80,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	2,411,774
Boiler #2 - Steam - Gas/Oil-Fired - 30,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,042,679
Boiler #3 - Steam - Gas/Oil-Fired - 30,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,042,679
Boiler #4 - Steam - Gas/Oil-Fired - 30,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,042,679
Deaerator Renewal	D3020 - Heat Generating Systems	Lifecycle	5- Due within 5 Years of Inspection	2019	243,040
Condensate Pumps Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	62,624
Exhaust System Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	27,534
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	25,257
Boiler Control System Renewal	D3060 - Controls and Instrumentation	Lifecycle	2- Due within 2 Years of Inspection	2016	527,245
Distribution Equipment, Panelboards, and Feeders - 800A 480Y/277V & 208Y/120V - 1978 Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	187,831
Main Electrical Service - 800A 480Y/277V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	103,732
Branch Wiring - Equipment & Devices - 1978 Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	94,867
Split System AC Unit - 4 Ton Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	21,819
Subtotal					6,974,364

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Roofing - Built-Up Roof System	B30 - Roofing	Reliability	1- Due within 1 Year of Inspection	2015	114,761
Single-Ply Membrane - Ballasted - 1988 Renewal	B30 - Roofing	Lifecycle	1- Due within 1 Year of Inspection	2015	14,446
Subtotal					129,207
Overall					7,249,703

111 - BUILDING EXECUTIVE SUMMARY REPORT

North Dakota State University

Appropriated - Heating Plant

Central Heating Plant

Asset Number	001	Year Built	1904
Building GSF	23,002	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Utility Plant		



Central Heating Plant

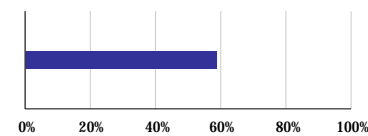
What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$8,919,353
Replacement Value	\$15,220,943

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= 59%



Poor

Good Fair Poor Replace?

What are potential projects?

Heat is provided by four large boilers, three of which were installed between 1972-'78 (now approximately 40 years old), and one in 1992.

Boiler #1 is a 100,000 lb/h (125,000 MBH) high pressure water tube steam boiler with dual-fuel capability (oil and natural gas). It had a replacement burner installed in 1994, now 20 years old. It has been experiencing various problems with tubes. A study is scheduled to determine tube thickness. Many repairs have been conducted to allow this boiler to operate as long as it has. Further tube failure will greatly increase maintenance/repair costs. Facility staff indicated when this boiler goes down, they do not have enough capacity to meet demands.

Boiler #2 (1978) is coal-fired, 80,000 lb/h. Replacement parts are reportedly very hard and expensive to obtain.

Boiler #4 (1978) is coal-fired, 70,000 lb/h. NDSU cannot easily obtain stokers, or grate drive, which are in need of replacement. These components will have to be custom fabricated at a significant markup. A study is scheduled to determine tube thickness. Many repairs have been conducted to allow this boiler to operate as long as it has. Tube failure will further reduce capacity, putting NDSU in a critical condition, as they are already at capacity.

Various building systems in the Central Plant building are also in need of renewal.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	112	416	8,258	106	27	0	0	0	8,919	0.59	0	0	0	0	0	0	0.00	8,919	0.59

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Air Washer - Steam Driven Renewal	D1090 - Other Conveying Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	105,897
Subtotal					105,897

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Story - Steel Framed Roof on Bearing Walls - 1904 Renewal	B10 - Superstructure	Lifecycle	3- Due within 3 Years of Inspection	2017	3,115
Steel Windows - 1978 Renewal	B2020 - Exterior Windows	Lifecycle	3- Due within 3 Years of Inspection	2017	180,754

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Steel Windows - 1972 Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	203,348
Single-Story - Wood Renewal	B10 - Superstructure	Lifecycle	1- Due within 1 Year of Inspection	2015	28,844
Subtotal					416,061

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Foundation Wall and Footings 8-Ft - Full Basement - 1904 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	5,831
Structural Slab on Grade - Light Industrial - 1904 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	3,721
Painted Finish - (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	12,050
VCT Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	5,775
Subtotal					27,377

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Kitchenette - Cabinet, Counter and Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	8,785
Air Compressor Renewal	D2090 - Other Plumbing Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	215,567
Boiler #1 - Steam - Gas/Oil-Fired - 100,000 lb/h - 1972 Renewal	D3020 - Heat Generating Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	2,154,311
Deaerator Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	186,308
Condensate Pumps Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	128,915
Exhaust System Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	27,534
Steam Piping - Header Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	106,227
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	18,943
Lighting - Interior - High Bay Renewal	D5022 - Lighting Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	207,949
Distribution Equipment, Panelboards, and Feeders - 1200A 480Y/277V & 208Y/120V - 1962 Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	58,899
Water Heater - Steam - Storage Tank - Comm - 45 GPM Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	46,374
Boiler Control System Renewal	D3060 - Controls and Instrumentation	Lifecycle	2- Due within 2 Years of Inspection	2016	527,245
Boiler #2 - Steam - Stoker Fired (Coal) - 80,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	2,411,774
Boiler #4 - Steam - Stoker Fired (Coal) - 70,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	2,158,788
Subtotal					8,257,619

Roof

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Metal Roofing - Corrugated Steel Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	28,077
Single-Ply Membrane - Ballasted - 1978 Renewal	B30 - Roofing	Lifecycle	2- Due within 2 Years of Inspection	2016	84,320
Subtotal					112,397
Overall					8,919,351

111 - BUILDING EXECUTIVE SUMMARY REPORT

University of North Dakota

Appropriated - Heating Plant

Central Heating Plant

Asset Number	01	Year Built	1909
Building GSF	40,000	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Utility Plant		



Central Heating Plant

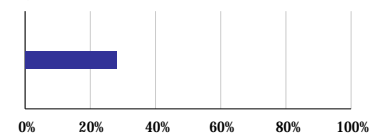
What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$6,037,190
Replacement Value	\$21,623,829

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= 28%



Fair

What are potential projects?

UND's campus central heating is generated with seven boilers, some more than 60 years old. Three of the seven boilers are recommended for renewal within the next 4-5 years:

Boiler #3 was installed in 1953 as a 100,000 lb/h boiler, but has since been reduced by adding more passes before the ID fan. The boiler was re-tubed in 2012 and has had VFDs installed on IDF, FD, and OFA fans. This boiler has a stoker drive and refractory project scheduled for this summer. Although well maintained, this boiler is beyond its expected rated life and it is very hard and expensive to obtain replacement parts as they have to be custom-fabricated. Replacement should be considered within 5 years.

Boiler #4, installed in 1964 (50 years old), is a 30,000 lb/h high pressure water tube steam boiler with dual-fuel capability (oil and gas). This boiler is beyond its expected rated life and has been very problematic with multiple tube failures and various unexpected shutdowns over the years.

Boiler #6, installed in 1966 (48 years old), is a 60,000 lb/h high pressure water tube steam boiler with dual-fuel capability (oil and natural gas). This boiler is beyond its expected rated life and has been very problematic with multiple tube failures and various unexpected shutdowns over the years.

Various building systems in the Central Plant Building, including the coal elevator, the roof and windows, also require renewal within the next 4-6 years.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	98	61	5,656	124	99	0	0	0	6,037	0.28	0	0	0	0	0	0	0.00	6,037	0.28

Five Year Needs by Major System Group

Requirements List

Elevator

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Air Washer - Steam Driven Renewal	D1090 - Other Conveying Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	99,643
Coal Loading Conveyor Renewal	D1090 - Other Conveying Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	24,252
Subtotal					123,895

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Story - Steel Framed Roof on Bearing	B10 - Superstructure	Lifecycle	3- Due within 3 Years of Inspection	2017	4,984

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Walls - 1909 Renewal					
Steel Windows - 1964 Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	22,679
Multi-Story - Wood Renewal	B10 - Superstructure	Lifecycle	1- Due within 1 Year of Inspection	2015	33,613
Subtotal					61,276

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
ACT System - 2x4 - 1986 Renewal	C3030 - Ceiling Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	17,056
Foundation Wall and Footings - No Basement - 1909 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	5,746
Foundation Wall and Footings 8-Ft - Full Basement - 1909 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	4,476
Structural Slab on Grade - Light Industrial - 1909 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	7,301
Stairs - CIP Renewal	C20 - Stairs	Lifecycle	3- Due within 3 Years of Inspection	2017	2,730
Ceramic Tile Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	52,824
GWB Walls - Standard (Non-Painted) - 1964 Renewal	C1010 - Partitions	Lifecycle	3- Due within 3 Years of Inspection	2017	8,458
Subtotal					98,591

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Main Electrical Service - 800A 480Y/277V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	115,896
Boiler #4 - Steam - Gas/Oil-Fired - 30,000 lb/h - 1964 Renewal	D3020 - Heat Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	994,612
Water Heater - Elec - 50 Gal - 1989 Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	5,010
Air Compressor #3 - 1978 Renewal	D2090 - Other Plumbing Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	59,118
Kitchenette - Cabinet, Counter and Sink Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	18,991
Restroom Fixtures Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	26,323
Sanitary Waste - Gravity Discharge - 1964 Renewal	D2030 - Sanitary Waste	Lifecycle	1- Due within 1 Year of Inspection	2015	55,408
Boiler #6 - Steam - Gas/Oil-Fired - 60,000 lb/h - 1966 Renewal	D3020 - Heat Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	1,504,480
Boiler Feedwater Pumps - 1978 Renewal	D3020 - Heat Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	107,381
Vacuum Pumps Renewal	D3040 - Distribution Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	80,734
Exhaust System Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	35,071
Unit Heaters - Steam Renewal	D3050 - Terminal and Package Units	Lifecycle	3- Due within 3 Years of Inspection	2017	20,817
Distribution Equipment, Panelboards, and Feeders - 1978 Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	333,577
Main Electrical Service - 1200A 480Y/277V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	1- Due within 1 Year of Inspection	2015	242,146
Boiler #3 - Steam - Stoker Fired (Coal) - 65,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	1,932,226
Custodial/Utility Sinks - Wall Mtd Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	7,322
Outside Air - Steam Preheat Coils Renewal	D3040 - Distribution Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	31,456
Emergency Battery Pack Lights Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	46,011
Exit Signs Renewal	D5092 - Emergency Light and Power Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	39,309
Subtotal					5,655,888

Roof

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Ply Membrane - Ballasted - 1964 Renewal	B30 - Roofing	Lifecycle	3- Due within 3 Years of Inspection	2017	62,109
Single-Ply EPDM with Pavers on Roof Renewal	B30 - Roofing	Lifecycle	3- Due within 3 Years of Inspection	2017	35,431
Subtotal					97,540
Overall					6,037,190

111 - BUILDING EXECUTIVE SUMMARY REPORT

Valley City State University

Appropriated - Heating Plant

Heating Plant

Asset Number	2	Year Built	1910
Building GSF	8,601	Inspection Date	2014
Floors	1		
Ownership			
Current Use			



Heating Plant

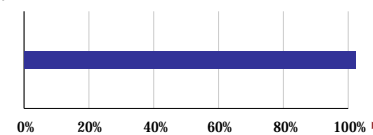
What is our condition?

Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$12,426,504
Replacement Value	\$4,518,785

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= **275%**



Replace?

Good Fair Poor Replace?

What are potential projects?

VCSC had a central heating plant failure during an extremely cold weekend in January 2014. The failure jeopardized opening the school for classes the following week, and repairs were very difficult, expensive, and probably short-lived. The school needs a whole new heating plant.

Boiler #1 provides high pressure steam from a 20,000 lb/hr stoker fired (coal) steam boiler. Replacement parts are harder and more expensive to obtain, and a newer unit would be more efficient and have cleaner emissions.

Boiler #2 is a 17,028MBH high pressure water tube steam boiler with dual-fuel capability (oil and gas), and was re-tubed in 2003. It is recommended to plan for replacement as replacement parts are harder and more expensive to obtain and a newer unit would operate more efficiently.

Boiler #3 is a 8,396 MBH oil fired steam boiler. This boiler was not being utilized at the time of assessment due to it having 5 failed tubes. This boiler is reportedly undersized to handle existing demands and has proven to be very unreliable, reducing the years remaining.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	68	12,281	0	64	0	13	0	12,427	2.75	0	0	0	0	0	0	0.00	12,427	2.75

Five Year Needs by Major System Group

Requirements List

Ext Envelope

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Single-Story - Steel Framed Roof on Bearing Walls - 1910 Renewal	B10 - Superstructure	Lifecycle	3- Due within 3 Years of Inspection	2017	1,690
Solid Brick Walls - 1910 Renewal	B2010 - Exterior Walls	Lifecycle	3- Due within 3 Years of Inspection	2017	19,234
Steel Windows - 1950 Renewal	B2020 - Exterior Windows	Lifecycle	2- Due within 2 Years of Inspection	2016	29,373
Steel Windows - 1980 Renewal	B2020 - Exterior Windows	Lifecycle	3- Due within 3 Years of Inspection	2017	6,276
Door Assembly - 6 x 7 Wood Renewal	B2030 - Exterior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	5,496
Door Assembly - 3 x 7 Wood Renewal	B2030 - Exterior Doors	Lifecycle	2- Due within 2 Years of Inspection	2016	6,231
Subtotal					68,300

FFE and Site

111 - BUILDING EXECUTIVE SUMMARY REPORT

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Fixed Casework - Average Renewal	E - Equipment and Furnishings	Lifecycle	3- Due within 3 Years of Inspection	2017	12,887
Subtotal					12,887

Int Constr + Structr

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Structural Slab on Grade - Light Industrial - 1910 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	3,700
Foundation Wall and Footings - No Basement - 1910 Renewal	A - Substructure	Lifecycle	3- Due within 3 Years of Inspection	2017	3,246
Swinging Doors - 3 x 7 Wd - NR - 1960 Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	8,734
Swinging Doors - Pair - 6 x 7 Wd - Rated Renewal	C1020 - Interior Doors	Lifecycle	3- Due within 3 Years of Inspection	2017	4,656
Toilet Partitions - Painted Metal Renewal	C1030 - Fittings	Lifecycle	3- Due within 3 Years of Inspection	2017	1,726
Painted Finish - (1 Coat Prime - 2 Coats Finish) Renewal	C3010 - Wall Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	8,820
Wood Flooring Renewal	C3020 - Floor Finishes	Lifecycle	3- Due within 3 Years of Inspection	2017	32,947
Subtotal					63,829

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
New Coal Boilers and Building	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	8,846,961
Boiler Control System Renewal	D3060 - Controls and Instrumentation	Lifecycle	2- Due within 2 Years of Inspection	2016	0
Fuel Oil Pumps Renewal	D3011 - Oil Supply System	Lifecycle	2- Due within 2 Years of Inspection	2016	10,266
Underground Fuel Tank - Steel - 10,000 Gal Renewal	D3011 - Oil Supply System	Lifecycle	1- Due within 1 Year of Inspection	2015	0
Boiler #3 - Steam - Oil-Fired - 8,396 MBH Renewal	D3020 - Heat Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	0
Boiler #2 - Steam - Gas/Oil-Fired - 17,028 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	0
Boiler #1 - Steam - Stoker Fired (Coal) - 20,000 lb/h Renewal	D3020 - Heat Generating Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	0
Deaerator Renewal	D3023 - Auxiliary Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	0
Distribution Equipment, Panelboards, and Feeders - 600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	0
Main Electrical Service - 600A 208Y/120V Renewal	D5012 - Low Tension Service and Dist.	Lifecycle	3- Due within 3 Years of Inspection	2017	0
Emergency Eyewash Units Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	1,468
Restroom Fixtures Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	8,826
Water Coolers - Wall-Mounted Renewal	D2010 - Plumbing Fixtures	Lifecycle	3- Due within 3 Years of Inspection	2017	7,052
Water Dist Complete - 1978 Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	12,057
Air Compressors Renewal	D2090 - Other Plumbing Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	19,572
Exhaust System Renewal	D3040 - Distribution Systems	Lifecycle	3- Due within 3 Years of Inspection	2017	14,375
Branch Wiring - Equipment & Devices Renewal	D5021 - Branch Wiring Devices	Lifecycle	3- Due within 3 Years of Inspection	2017	43,878
Lighting - Interior - 1980 Renewal	D5022 - Lighting Equipment	Lifecycle	3- Due within 3 Years of Inspection	2017	14,580
Water Softeners Renewal	D2020 - Domestic Water Distribution	Lifecycle	3- Due within 3 Years of Inspection	2017	12,139
Replace Current Gas/Oil Boilers	D3020 - Heat Generating Systems	Lifecycle	1- Due within 1 Year of Inspection	2015	3,290,314
Subtotal					12,281,488
Overall					12,426,504

111 - BUILDING EXECUTIVE SUMMARY REPORT

Williston State College

Appropriated - Heating Plant

Heating Plant - Stevens Hall

Asset Number	1A	Year Built	1968
Building GSF	800	Inspection Date	2014
Floors	1		
Ownership	Client Owned		
Current Use	Utility Plant		



Heating Plant - Stevens Hall

What is our condition?

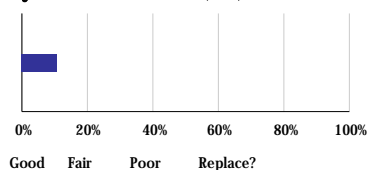
Deferred Maintenance Needs (incl. next 5 YR, in current \$, rounded)	\$214,795
Replacement Value	\$2,000,000

The Facility Condition Index (FCI) is a ratio of the building's needs to its replacement value. FCI is calculated by dividing the sum of the near term (5 years) Requirement Costs by the current replacement value of the asset(s).

5 Year Facility Condition Index (FCI)

= 11%

Fair

What are potential projects?

The gas fired boilers are original to the 1968 Stevens Hall construction, although upgraded with new burners in 1999 the boilers are beyond the typical service life 35 to 40 years. Replacement should be scheduled.

The requirement includes allowances for changes in Stevens Hall with the replacement of existing steam piping and equipment with hot water piping and pumps is estimated.

Hazardous material abatement is not included.

Costs are in thousands

Life Safety	Building Code	Roof	Ext Envelope	MEP	Elevator	Int Constr + Structr	Fire Protection	FFE and Site	Other DM	SUBTOTAL DEFERRED MAINT.	FCI	ADA	HAZMAT	SECURITY	Program	Other	Subtotal Program Cost	PI	Subtotal DM + Progr Cost	FCNI
0	0	0	0	215	0	0	0	0	0	215	0.11	0	0	0	0	376	376	0.19	591	0.30

Five Year Needs by Major System Group

Requirements List

MEP

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Boilers - Approching End of Service Life	D3020 - Heat Generating Systems	Lifecycle	2- Due within 2 Years of Inspection	2016	214,795
Subtotal					214,795

Other

Name	Prime System	Category	Priority	Action Year	Requirement Cost
Conversion to Hot Water	D3020 - Heat Generating Systems	Technological Improvements	1- Due within 1 Year of Inspection	2015	376,000
Subtotal					376,000
Overall					590,795

APPENDIX - VFA SITE VISIT NOTES

1. North Dakota State University

VFA met with representatives from NDSU on March 3, 2013 to discuss the capital project planning process at NDSU. With regard to the general University processes, VFA met with Dr. J. Bruce Rafert, Provost; Bruce A. Bollinger, Vice President for Finance and Administration; Prakash Mathew, Vice President for Student Affairs; and Michael Ellingson, Director of Facilities Management. VFA also met with Larry A. Kotchman, State Forester to discuss the North Dakota Forest Service; Ken Grafton, VP for Agricultural Affairs and David Ruhland, Director of Agriculture Budget Office to discuss the North Dakota Agricultural Experiment Station and Val Kettner, Associate Vice President for Sponsored Programs Administration and Laura Slicer, Budget & Research Administrator to discuss the NDSU Research and Technology Park.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

NDSU is one of the two largest universities in North Dakota with a total enrollment over 14,000 (12,000 undergrad) and over 6,000 employees. The campus has over 100 buildings.

Recent Capital projects submitted by NDSU are:

- STEM (Science-Technology-Engineering-Mathematics) Classroom/Laboratory Building
- Ladd Hall/Dunbar Hall Complex Renovation
- Crop Quality and Food Science Facility (Harris Hall Replacement)

Many projects are being driven by accreditation. Due to existing facility conditions and adequate space accreditation groups have expressed concerns to NDSU.

Projects can stay on the list for a long time before they are funded.

Provost Rafert is part of a Governor's team for Economic Development. They are working on the "2020 Plan" plan which will be focused on:

- Education
- Workforce
- Image

In 2011, the campus commissioned a Risk Assessment by Larson Allen.

Deferred Maintenance/Extraordinary Repairs

Based on the State formula and a 14.4% factor, NDSU receives approximately \$2.7 million in extraordinary repairs (deferred maintenance) funding each biennium.

Facilities Management uses data from a 2008 assessment to track the list of deferred maintenance items. The amount of deferred maintenance on this list greatly exceeds the amount carried by the State as deferred maintenance at NDSU. The DM list is tracked on a spreadsheet. They update the costs as necessary. NDSU uses outside consultants to estimate project costs for major projects.

Review process by the State funding agency

The projects for the \$2.7M (Extraordinary Repairs) go through a relatively easy process of review. If projects don't fall into that funding category, the review process is quite rigorous. During the review, there are numerous questions on project specifics in addition to the general numbers.

Meeting with representatives from NDSU Research and Technology Park

Located on 55 acres, the NDSU Research and Technology Park consists of three properties:

- Research 1 - constructed in 2002, 35,000 square feet, bond funded with 20 year lease , An 30,000 square foot addition to Research 1 was built with a grant from the US Department of Commerce
- Research 2 – constructed in 2004, 76,000 square feet, bond funded with 20 year lease
- Appareo Systems Building – leased building for Appareo Systems

Research 1 & 2 are under the Tech Parks’ 20 year lease. The buildings include the administrative offices of research functions as well as the CPM academic department.

The university is responsible for the operations and maintenance and also for any capital needs that arise at the properties but are only able to use indirect or local funds. The only cost savings that the university was able to take advantage from was on the original construction, otherwise the properties are run like an “owned” property.

Meeting with representatives from North Dakota Forest Service

The North Dakota Forest Service is administered by the state forester and provides technical, financial and educational forestry assistance across the state. The agency owns 41 buildings valued at approximately \$3 million, plus infrastructure worth an additional \$1.9 million. Their last project from the state was a new facility, valued at \$750k.

The extraordinary repairs budget for the Forestry Service, as calculated by the State formula, is approximately \$44,000 per biennium. This is generally sufficient for their needs. Recently they have received a one-time injection of funding from the state for the amount of \$30,000.

The Forest Service tracks facilities based on a condition index, a numerical ranking of the relative condition of the buildings based on a two year window of needs.

Project needs are identified by staff and advanced to their leadership council. Projects are evaluated project by project which is possible due to the limited number of projects to be considered. Project priorities are:

- Public Safety
- ADA
- Support for Field Personnel

The Forest Service works to keep the list current on a yearly basis, adding new needs as they develop.

Meeting with representatives from Agricultural Experimentation Station

The North Dakota Agricultural Experiment Station has a main station on the NDSU campus (west of 18th Street) and 7 other research extension centers throughout the state. They have approximately 200 buildings worth \$40 million. They have many new buildings having spent \$7.7 million on new construction in recent years, including a new research greenhouse complex.

The agency is affiliated with NDSU like the Forestry group, but gets its funding through other means. Legislature specifically states that they may not co-mingle money with NDSU.

State Board of Agricultural Research and Education is responsible for identifying needs and prioritization. They work with the Legislature to determine the final list of projects to be executed.

Deferred maintenance funding has been constant for the last 3 years at \$1.3M. They estimate to have about \$7.7M in deferred maintenance. This has been determined based on the knowledge of the

individuals managing the facilities and was not included in the assessment performed for NDSU. Deferred maintenance is not getting addressed with new facilities included in Master Plan. Cost estimates cannot keep pace with construction cost increases.

Directors of stations send their projects centrally where the list is compiled. Projects are then sent to the leadership team which may adjust the amount of funding requested for each project. Accreditation issues have been a top priority in recent years.

The Ag Experiment Station has gone through a heavy growth mode and refurbishment of the Research Extension Centers.

Process improvement suggestions discussed with NSDU

The following process improvement suggestions were raised in the discussions with NDSU:

There is approximately a 2 year window from request of funding to actual approval. This long lag time results in a situation where the original estimate for the project may no longer be valid due to the current labor market. The oil industry has raised the costs of construction across the state, but most severely in the northwest. Provisions for modifying the original estimates due to cost increases are difficult. As a result, the scope of the project must often be reduced to meet the original estimates.

The formula used for determination of extraordinary repairs budget greatly underestimates the level of funding needed to maintain the facilities at an appropriate level. As the facilities deteriorate, it becomes more difficult to recruit students, faculty and researchers.

The amount of deferred maintenance acknowledged by the state underestimates the level considerably. The amount was determined in an assessment years ago and has not been increased to account for lifecycle deterioration over time. As a result, the gap continues to widen.

2. Dickinson State University

VFA met with staff from Dickinson State University (DSU) on March 4, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

Dickinson State University (DSU) is a four-year public university located in Dickinson, North Dakota, United States, and is a part of the North Dakota University System. It was founded in 1918 as Dickinson State College and granted full university status in 1987.

Organizationally, D. C. Coston is the president of the college and decisions are made through the President's council, through the facilities group knows the site very well.

Request Funding

Master Plan Process

For Dickinson State University, they are allowed to submit two projects every two year cycle. They did not submit any needs last time and the previous time, they submitted one project for a library expansion which was rejected. The explanation was that library space is becoming less and less required due to the fact that documents were more readily accessible electronically. However, libraries are used also as study areas and with a returning student population, these areas will once again be necessary.

Outside Money (Donors)

There is no significant outside source of money right now but they are looking to find a way to house the Theodore Roosevelt National Library which would require significant donor funds. On April 30, 2013, both chambers of the North Dakota Legislative Assembly passed a bill appropriating \$6 million to Dickinson State University to award a grant to the Theodore Roosevelt Center for construction of a building to be named the Theodore Roosevelt Presidential Library. To access these funds, the Theodore Roosevelt Center must first raise \$3 million from non-state sources. However, the University is currently re-evaluating the cost of the project which could be substantially more than the current funding identified.

List of Projects

For major projects, it is noted that there is a group within the university that includes the President's Counsel, The Deans of the programs, The VP of Facilities and the Facility Managers that identify all the needs of the facilities. The VP of Facilities and the FM Managers then form the core of the group which decides what to do for the facilities.

For Extraordinary Repairs, the VP of Facilities and the Facility Managers have a good understanding of the needs of the facilities. While they will review what they want to do to the facilities with the President, they are ultimately responsible for coming up with the approved list of extraordinary repairs. The VP of Facilities and the FM Managers decide what to do for the facilities.

For PM Tasks, they use the statewide application FAMIS to help them with the allocation of limited resources to PM needs.

Leases

They have one building that this leased out to commercial interests.

Project Management

Project Management is provided based on the size of the project. For smaller projects, there may be the ability to use in-house resources but it is generally very tight. If it is larger, then the university will not have the in-house resources and will hire that resource within the structure of the project. If this were the case, then one of two arrangements are requested for:

- GC or agent and contract through them
- Construction Manager-at-Risk arrangement

The controller tracks all budgets and completion. DSC has been forced to reduce the scope of projects due to the higher costs. One of the means to getting this done was focus only on academic oriented projects. This has resulted in frustration with the funding process.

Executing Projects

Depending on the size of the contract, they either use a GC or have adopted the Construction Manager at Risk concept.

They track project costs in excel sheets and report to the state 2 times a year.

Energy Savings (ESCOs)

There were no known ESCO's that was discussed at Dickinson State University.

Estimating

For small projects, estimates were provided in-house, with the benefit of recently completed projects as guidance. For most other projects, professional assistance in the form of cost engineers and architectural firms are used to provide project pre-plan level estimate.

DSU did note that they were seeing some impact of the cost of the work due to competition with the oil industry for funds and staffing. This has not been a major impact due to the limited number of projects, but could become so if the volume of projects increases.

Funding

DSU noted that, like all other institutions, their extraordinary repairs are funded by a process that occurs once every two years (with the legislature cycle). Many years ago, each of the institutions had provided a list of all of the deferred maintenance of the campus. A formula was written to determine how much money they would get. Dickinson receives about \$410k every year.

Dickinson State University noted that there was a onetime funding but only a small number of institutions received funding from that, not including them.

Prioritization

The master list of needs for the facilities resides with the Facilities Management group, but is reviewed with the President's Council, the Deans of the programs, the VP of Facilities and the Facility Managers. There is clarity and agreement throughout the organization of the needs and their prioritization.

The extraordinary repairs list for the facilities also resides with the Facilities Management group. There is also agreement throughout the organization of the needs and their prioritization and as such no formal prioritization process is used. Low levels of funding also create an unintended dynamic in the way the funds are spent, but it only results in further delaying the critical capital projects.

There have been regional cost increases for projects in the ND system as they compete directly for the same resources as the oil industry that other areas of the country do not experience. Also these increases

can be significant on a monthly basis. If projects are delayed later in the year, the costs could increase significantly to the point where the original projections no longer are adequate.

Another area of consideration resides in the current fiscal year to calendar year funding setup which inherently hurts the institutions. They would like to do the work in May-July when the schools are closed but the fiscal calendar starts in July. This makes most major works to be delayed for almost a year when again the original projections for the costs no longer are adequate.

Process improvement suggestions discussed with DSU:

- Work with the system to centralize some function such as:
 - Costing / Estimating
 - Procurement
 - Shared Resource
- Work with the legislature to help them determine what the current funding level for the system should be with some benchmarking, what a more reasonable level of funding should be.
- Review the Master Plan Process. Help the legislature come up with a process that allows the systems to properly communicate their real needs. Also change the allowed maximum submissions to a different, perhaps need based system.
- Review and change the funding of and the tracking of the Extraordinary Repairs List. Allow the current list of DM to change to match the actual current needs of the facility. Right now the funds available are so small compared to the needs that prioritization is almost not necessary. The magnitude of the needs so far exceed the funding levels that prioritization almost does not mean anything.
- The current structure where a foundation covers the initial cost of the construction and leases the buildings back to the institution in a lease to own structure, results in the understatement of the deferred maintenance needs of the institution. The SF and deferred maintenance needs for these properties are not reported into the state as there is no requirement to supply this information.
- SB2323 form is now submitted once every six months. This is an improvement over once every month.

3. Bismarck State College

VFA met with Tamara Barber and Don Roethler from Bismarck State College (BSC) on March 6, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

BSC, located in Bismarck, the capital city of North Dakota, is the third largest college in the North Dakota University System with approximately 4200 students. Established in 1939, it is a comprehensive community college that offers two-year and four-year degree plans. BSC offers the first two years of education toward a bachelor's degree in most fields. It offers 20+ bachelor's degree and several graduate programs in conjunction with other university system institutions. Approximately 35 technical programs are offered, and more than 150 courses are offered online. Unique to the institution are degrees in energy education, including power and process plant technology, ethanol training, nuclear power technology, electric power technology, and renewable energy. Bismarck State College also offers technical degrees in areas ranging from network/system administration to web design.

Organizationally, David L. Clark is the president of the college and the all decisions for facilities work are made through the President's Council, but with strong representation from the facilities group.

Request Funding

BSC is allowed to submit two projects every two year cycle. They have submitted for funds but it was not approved for the entire amount.

Outside Money (Donors)

There is no significant outside source of money right now.

Money from donors have to go through the Legislative Budget Section which meets quarterly for amounts greater than \$250k and it has to be applied that year.

Donor → Board of Education → Budget Section

Any amount greater than \$385k has to go to Legislature

However, there is another potential source of additional funds for BSC. Their current enrollment is more than originally intended and most of the additional tuition dollars are put in a general fund that is allocate each department based on need.

List of Projects

For both major projects and extraordinary repairs, the VP of Facilities and the Facility Managers have a good understanding of the needs of the facilities. While they will review what they want to do to the facilities with the President, they are responsible for coming up with the approved list of potential projects. The VP of Facilities and the FM Managers decides what to do for the facilities.

Leases

BSC has several buildings that are leased back through a foundation in a lease-to-own arrangement. They are responsible for all maintenance and capital cost on these as well but these buildings are not included in the OB formula. Some of their buildings have standard commercial leases and one building has a lease in but sublet out.

The campus has a new National Energy Center of Excellence building and site. This building received some federal grants for the construction but has also cause further assessments from the City.

Project Management

Project Management is provided based on the size of the project. For smaller projects, there may be the ability to use in-house resources but it is generally very tight. If it is larger, then the university will not have the in-house resources and will hire that resource within the structure of the project. If this were the case, then one of two arrangements are requested for:

- GC or agent and contract through them
- Construction Manager-at-Risk arrangement

The controller tracks all budgets and completion. They have been forced to reduce the scope of projects due to the higher costs. One of the means to getting this done was to reduce the area of projects. This has resulted in frustration with the funding process.

Energy Savings (ESCOs)

There were no known ESCO's that was discussed at Bismarck State College.

Estimating

For small projects, estimates were provided in-house, sometime with the benefit of recently completed projects as guidance. For most other projects, professional assistance in the form of cost engineers and architectural firms are used to provide project pre-plan level estimate.

Bismarck State College did note that they were seeing some impact of the cost of the work due to competition with the oil industry for funds and staffing.

Funding

Bismarck State College noted that like all other institutions, their extraordinary repairs would be funded by a process that occurred once every two years (with the legislature cycle). Each of the institutions had provided many years ago a list of all of the deferred maintenance of the campus. A formula was written to determine how much money they would get. Bismarck receives about \$480k every year.

Bismarck State College noted that there was a onetime funding but only a small number of institutions received funding from that, not including them.

Bismarck State College is also impacted by the local city assessments. For the past few years, they have been extensive, accounting for \$250k of the \$480k that they get allocated. This means that they are able to use less than half of the already low funds. This low level of funding also creates an unintended dynamic in the say the funds are spent, but it only results in further delaying the critical capital projects. When an institution like Bismarck State College gets only \$230k to work on their repairs, this fund is first applied to the most critical emergency repairs and that will consume a significant portion of the fund. The remaining funds are then insufficient to fund critical large projects such as the replacement of switchboards (potentially \$100k plus) and HVAC projects and these systems get deferred for yet another year. This cycle has been going on for some time and consequently these major systems have just gotten older and older without the ability to be able to fund their replacement. All they have been able to do are small projects.

Like many of the more western colleges, there is a regional cost increase for projects in the BSC that other areas of the country do not experience as it competes directly for the same resources as the oil industry. Also these increases can be significant on a monthly basis. If projects are delayed to later in the year, the costs could increase significantly to the point where the original projections are no longer adequate.

Another area of consideration resides in the current fiscal year to calendar year funding setup which inherently hurts the institutions. They would like to do the work in May-July when the schools are closed but the fiscal calendar starts in July. This makes most major works to be delayed for almost a year when again the original projections for the costs no longer are adequate.

Prioritization

The master list of needs for the facilities and the extraordinary repairs list reside with the Facilities Management group, but are reviewed with the President's Council, the Deans of the programs, the VP of Facilities and the Facility Managers. There is clarity and agreement throughout the organization of the needs and their prioritization and as such no formal prioritization process is use.

Process improvement suggestions discussed with BSC:

1. Work with the system to centralize some function such as:
 - a. Costing / Estimating
 - b. Procurement
 - c. Shared Resource
2. Work with the legislature to help them determine what the current funding level for the system should be with some benchmarking, what a more reasonable level of funding should be.
3. Review the Master Plan Process. Help the legislature come up with a process that allows the systems to properly communicate their real needs. Also change the allowed maximum submissions to a different, perhaps need based system.
4. Review and change the funding of and the tracking of the Extraordinary Repairs List. Allow the current list of DM to change to match the actual current needs of the facility. Right now the funds available are so small compared to the needs that prioritization is almost not necessary. The magnitude of the needs so far exceed the funding levels that prioritization almost does not mean anything.
5. The current structure where a foundation covers the initial cost of the construction and leases the buildings back to the institution in a lease to own structure, results in the understatement of the deferred maintenance needs of the institution. The SF and deferred maintenance needs for these properties are not reported into the state as there is no requirement to supply this information.
6. SB2323 form is now submitted once every six months. This is an improvement over once every month.

7. Williston State College

VFA met with James Foertsch, Vice President for Business Services and Travis Rohrer, Director of Facilities on March 5, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

The campus of consists of approximately 350,000 sf.

Organizationally, Travis is in charge of the facilities staff of 5 ½. Facilities' responsibilities include custodial, maintenance, security, snow removal and conference setup.

The most pressing current need at WSC is an updating of the heating plant. The boilers in the heating plant are over 45 years old and in poor condition. Deferred Maintenance has been allocated by the State Board starting in FY14, based on a similar methodology as the extraordinary repairs funding.

Based on the OMB formula at 15%, WSC receives approximately \$100,000/year for extraordinary repairs.

WSC is allowed to submit 2 master plan projects per biennium. WSC is currently in construction on a full renovation of its largest academic building, Stevens Hall. This project was requested in the last two biennia and was approved for the current biennium. This project will greatly increase the overall condition of the facilities. Within the last 5 years, WSC has executed the following projects:

- New residence hall – this project was funded by a combination of local funds and federal bonds to be paid back by dorm fees.
- Addition to Stevens Hall – this project, completed in Fall 2012, was funded with State dollars with a 1/6 local match.
- Career and Technical Building – this academic building was funded with State dollars and was completed in Fall 2011.
- Sitework – This \$3.3 million project primarily focused on parking lots was funded with mostly State dollars

In planning is a new project to build a connector road to the recently built Williston Area Rec Center, a 250,000 square foot facility open to the Williston community. Currently, access to the facility is through the campus putting a strain on the campus vehicular circulation.

Identify a Need

Capital

The identification of new capital projects is mostly program driven, although some condition based projects have been submitted in recent years. Currently, there is no real backlog of program driven projects.

Because of the submittal process, often the sequence of projects is not optimal. Projects are executed in the order they are approved, sometimes requiring rework to completed projects.

DM/Extraordinary Repairs

Last year, WSC did a building condition assessment with in-house staff to identify the existing deferred maintenance on the campus. It identified that the main building HVAC system is antiquated, which is being addressed in the current renovation of 47,000 square feet of Stevens Hall. Travis maintains the list of deferred maintenance items on a spreadsheet.

WSC uses School Dude as its CMMS for work orders and other maintenance. Travis tries to keep up with maintenance tasks, but with such a small staff, they are often diverted for other tasks such as event setup and take down.

Quantify Costs

Capital

WSC currently has no funding source to develop and estimate project costs. As such, they try to get reduced price/pro bono estimating from architects hoping to get follow on work. Unfortunately, in some cases you get what you pay for – the estimates tend to be at a very high level and can be off by quite a bit. This was compounded in the past by using an architectural firm without local presence who did not understand local estimating climate. Construction costs in Williston have risen dramatically, even as other parts of the country were flat or declined due to the energy industry. Estimating has improved recently for a couple of reasons – the architectural firm that WSC uses has developed a local presence and there has been some increase in predictability of the costs, albeit still high.

If a project is underestimated, this usually means a reduction in scope for the project, since local funds are usually not available to make up the difference. It is conceivably possible to apply for a project budget increase with the State board, but these are typically difficult meetings and do not have a high likelihood of success.

The perception at WSC is that decisions made at the State as to which projects to fund do not follow a prescribed process.

DM/Extraordinary Repairs

For deferred maintenance projects, Travis typically provides the estimates based on his experience in construction. He can also get quotes from local vendors and local contractors although Travis will often do product sourcing online since the local vendors are often considerably higher. This has allowed him to reduce cost for materials and parts.

For projects under \$100,000 WSC will get 3 estimates, for over \$100,000, they will contract through an open bid. They are strongly discouraged from breaking up a larger project into smaller projects to simplify the approval and bidding processes. There is an annual review to monitor this activity.

Prioritize Needs

Capital

WSC uses the AQIP and accreditation process to advise the strategic plan which generates the need. There is unofficial vetting by the Leadership Team (President, CFO, Provost). The potential projects are then debated in a meeting. This process works because the number of projects is not great. Ultimately, the Leadership Team determines which projects will be submitted.

DM/Extraordinary Repairs

When Travis took over the facilities group recently, he initially addressed the low hanging fruit. The budget is such that not much more can be accomplished in a given year.

Each potential project is evaluated based on outcome, i.e. will the projects prevent damage or keep the problem from becoming more expensive? For most projects, the decision of which projects to do rests with Travis and James. Larger projects would be submitted to the executive cabinet, but there have not been many of those in recent years.

WSC does not use any software to track or prioritize projects. They use spreadsheets and PM schedule in School Dude to schedule work.

Formulate Proposed Capital Plans**Capital**

Per the standard Master Plan process updated every two years, WSC is allowed to submit two projects. Neither James nor Travis has been with WSC through a full rewrite of the Master Plan due every six years. They have only worked on the updates. James is responsible for the submissions for new construction or major renovation greater than \$250,000.

DM/Extraordinary Repairs

Travis does not see the scope of repair projects escalating. After the current renovation of Stevens Hall, there are no major repairs projects planned.

Approving Capital Plans**Capital**

There is no formal approval process for approving capital plans at WSC except the submittal process required by the State. James is responsible for liaising with the State. They noted that approval of projects with local funds is more lenient than for those applying for State funds.

DM/Extraordinary Repairs

There is also formal approval process for deferred maintenance or extraordinary repair projects at WSC, except for State review of projects over \$250,000, and there are not many of those.

Request Funding**Capital**

Capital projects are funded through either State funding or local funding. The funding source is largely predetermined before the project is submitted. WSC will initially submit for State funding first and then look for local funding if State funding is not approved. Noted that level of reporting does not give adequate picture of how the money is spent.

DM/ Extraordinary Repairs

Extraordinary Repairs are funded each biennium based on standard State funding formula. There can be additional funding for deferred maintenance in some years, but the funding here is less consistent. We discussed the concept of completing all projects state wide rather than using the formula for funding. James and Travis had different perspectives on the subject. James feels the State Board does not have the expertise to evaluate potential projects, although there may be the opportunity for review at the system level. Although in the end he feels this may be more fair to taxpayers by funding only the most deserving projects, below a certain size of project, this approach would only create an added level of bureaucracy. Travis feels that this would not be a good idea. It may encourage bad behavior, i.e. schools will be encouraged to let their facilities deteriorate to be able to make a case for more funding. Alternatively, schools should be required to report what they are doing to maintain the condition of their facilities.

Execute Projects**Capital**

James is responsible for overseeing the major capital projects. He has regular meetings with the architects and engineers during design and the contractors during construction. Overall, the project costs are

managed in PeopleSoft. James also maintains spreadsheets which track the projects in more detail. WSC must report to the State every six months with a SB2323 form. This form is generated from the data kept in James' spreadsheets.

DM/Extraordinary Repairs

James is responsible for tracking costs on deferred maintenance projects. WSC tries to do as much in-house as possible, but for larger projects, the work is subcontracted and Travis manages the contractors. There is really no state tracking on repair projects unless they meet the \$250,000 threshold.

Close Out a Completed Project

Capital

James is responsible for project closeout. He uses standard construction procedures - punch lists with contractors. There is no formal process to inform the State or Master Plan other than marking the project as closed on the SB2323 form.

DM/Extraordinary Repairs

Travis tracks project process and closes projects on the deferred maintenance spreadsheet that he maintains. Projects are marked with the date complete but stay on the list for reference.

Process improvement suggestions discussed with WSC

In general, they suggested that there is not enough central control on the capital project process. Specifically, they mentioned that often the logical flow of projects in the master plan is lost in the process. Sometimes projects are executed and then projects are executed that would be better to occur before the first project. This is the result of the current process which allows for only two projects per biennium.

8. Dakota College at Bottineau

VFA met with staff from this institution on March 5, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

Dakota College at Bottineau (DCB) is a two-year public college located in Bottineau. Founded in 1906 as a forestry school, Dakota College's 35-acre campus is home to the North Dakota Forest Service Headquarters. DCB offers programs in areas such as horticulture, forestry, wildlife, natural resources, nursing and medical. The majority of the campus was built from the 50s to the 70s and the college has been "chipping along" at the deferred maintenance through the years, specifically their electrical systems.

Organizationally, Dr. Ken Grosz is the Dean of the college and through his council (consisting of the colleges' Associate Deans and Directors); they make determination of what is eligible for the Master Plan as well the Extraordinary Repair lists.

Request Funding

For DCB, they are allowed to submit two projects every two year cycle. They have submitted for funds but it was not approved for the entire amount.

The most recent state appropriations for 2013-2015:

- Campus Backup Generator - This project will provide a generator for critical campus infrastructure preventing building internal systems from freezing during extended power outages during the winter. The project includes \$375,820 from the general fund. No net increase in operating and maintenance funds is anticipated.
- Thatcher Hall Heating System Upgrade - This project will replace all steam and condensate piping, hot water heating piping, valves, traps, insulation and associated pumps in Thatcher Hall which was constructed in 1949. The project includes \$769,500 from the general fund. No increase in operating and maintenance funds is anticipated.
- Gross Hall Update - This project will renovate 39 dorm rooms and 2 central restrooms. Renovations include new furniture, fixtures, ceiling tiles, carpeting, lighting, windows and doors. The project includes \$732,460 of special funds. No net increase in operating and maintenance funds is anticipated.
- Mead Hall Update - This project will renovate the dorm rooms and central restrooms. Renovations include new furniture, fixtures, ceiling tiles, carpeting, lighting, windows and doors. In addition, this project will include installation of an elevator and an overhaul of the mechanical and electrical systems. The project includes \$1.2 million of special funds. No net increase in operating and maintenance funds is anticipated.
- Milligan Hall Remodel/Update - This project will renovate the existing 600 square foot single rooms into double suite units. Renovations include new furniture, fixtures, ceiling tiles, carpeting, lighting, windows and doors. This project also includes an overhaul of the mechanical and electrical systems. The project includes \$896,743 of special funds. No net increase in operating and maintenance funds is anticipated.
- Old Main Remodel - This project will renovate the existing Old Main building and repurpose it as the Old Main Conference Center. The building will house large and small meeting rooms, a kitchen, a coffee shop, and a theatre/ballroom. The project includes \$4.8 million of special funds.

The project will result in additional special fund operating and maintenance costs of \$286,000 per biennium.

Outside Money (Donors)

The college has made a significant effort to seek outside dollars from donors to assist in funding additional projects such as the renovation of its “Old Main” building which is a significant symbol for the college. To date the effort has not been as fruitful as planned.

List of Projects

For both major (Master Plan) projects and extraordinary repairs, the Dean and his council have a good understanding of the needs of the facilities. The group is ultimately responsible for coming up with the approved list of projects. Dean’s Council meets weekly and projects are allowed to be discussed at that time.

The Master Plan looks over the next 10 projects – in essence the next 5 years’ worth of projects and these get re-evaluated every year.

The last projects were “capital deferred maintenance” in nature, not programmatic. The council’s list as traditionally been “conservative” in their requests and focused on what they could get “the low hanging fruit vs shooting high”.

Leases

The college leases space at the Tech Center for “Community Outreach” workshops. They also lease out space for a Child Care Center which is not a burden on maintenance.

Project Management

Project Management is provided based on the size of the project. For smaller projects, there may be the ability to use in-house resources but it is generally very tight. For larger projects, the college generally seeks out outside assistance through the following arrangements:

- GC or agent and contract through them
- Construction manager-at-Risk arrangement

Project Tracking

Work supervision is done by local field personnel. Project closeout is local and then gets reported to the state.

Energy Savings (ESCOs)

There were no known ESCO’s that were discussed at DCB.

Estimating

The college relies on bids or gathering “ball park” figures from local contractors for their estimating needs. Dakota College is experiencing some significant cost increases in project costs due to the labor pool focusing on the oil industry projects on the western area of the project.

Funding

The level for “Extraordinary Repairs” is \$125k biennium and the school does not keep a list for it (need as an improvement step). They want to move towards using FAMIS (state has implemented system wide for CMMS). They currently work items off excel.

9. North Dakota State College of Science

VFA met with Dallas Fossum, Mark Eklund and Kari Hasbargen from North Dakota State College of Science (NDSCS) on March 7, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

NDSCS is a 2-year public college in Wahpeton, North Dakota and part of the North Dakota University System. Founded in 1903 by provision of the state constitution, the State College of Science offers degrees, certificates and diplomas in more than 80 academic options in traditional career and technical studies as well as the liberal arts. The college also offers a variety of distance education and online courses. Approximately 98% of graduates are employed or pursuing additional college education.

Unlike most two-year colleges, NDSCS in Wahpeton boasts a university atmosphere for its students, complete with residence halls, 35 affiliated clubs and organizations, music groups, theater productions, intercollegiate athletics, intramural athletics and numerous social activities.

Organizationally, John Richman, Ph.D. is the president of the college and through his President's Council makes the determination of what is eligible for the Master Plan as well the Extraordinary Repair lists.

Request Funding

Master Plan Process

NDSCS is allowed to submit two projects every two year cycle. They have submitted for funds but have never been funded for more than one. That means in a 35 building campus, the buildings will be completely refreshed once every 70 years.

The current project funded is to modernize the main campus building which was built in the 1800's and is centrally located on campus.

Outside Money (Donors)

There is no significant donor source of money right now. However, there is a significant bond fund that was raised a few years ago. Also, there is some industry specific money that goes to fund specific buildings and programs for the oil industry (such as John Deere). A new John Deere motor facility was constructed from this fund and the course being taught is critical to the needs of the oil industry. Most graduates from this program will already have offers for positions prior to graduation.

Money from donors have to go through the Legislative Budget Section which meets Quarterly for amounts greater than \$250k and it has to be applied that year.

Donor → Board of Education → Budget Section

Any amount greater than \$385k has to go to Legislature.

List of Projects

For major projects, the Facilities team meets once a month. This group includes the President, the VP's, Program Deans, Dallas, Mark and safety directors. As a group, they have a very good understanding of the needs of the facilities and decide what to do for the facilities.

For extraordinary repairs, the VP of Facilities and the Facility Managers decide what to do for the facilities. While they will review what they want to do to the facilities with the President, they are responsible for coming up with the approved list of extraordinary repairs.

For PM Tasks, they use the statewide CMMS application (FAMIS) to help them with the allocation of limited resources to PM needs. One of the benefits of using FAMIS is that if the NDSCS facilities staff is not available, then other institutions that also used FAMIS can lend support. NDSCS is proactive in the procuring of common equipment or limited manufacturers for the benefit of reduced inventory and available staff from other institutions.

Leases

NDSCS has several buildings that are leased back through a foundation in a lease-to-own arrangement. They are responsible for all maintenance and capital cost on these as well but the area is not included in the State extraordinary repairs budget formula. NDSCS shares a football stadium and field with a local high school.

Project Management

Project Management is provided based on the size of the project. For smaller projects, there may be the ability to use in-house resources but it is generally very tight. If it is larger, then the university will not have the in-house resources and will hire that resource within the structure of the project. If this were the case, then one of two arrangements are requested for:

- GC or agent and contract through them
- Construction Manager-at-Risk arrangement

The controller tracks all budgets and completion. They have been forced to reduce the scope of projects due to the higher costs. This has resulted in frustration with the funding process.

Energy Savings (ESCOs)

There were no known ESCO's that was discussed at NDSCS.

Estimating

For small projects, estimates were provided in-house with the benefit of recently completed projects as guidance. For most other projects, professional assistance in the form of cost engineers and architectural firms are used to provide project pre-plan level estimate.

NDSCS did note that they were seeing some impact of the cost of the work due to competition with the oil industry for funds and staffing. There are sometimes significant cost increases that other areas of the country do not experience and these increases can be significant on a monthly basis. If projects are delayed to being in later in the year, the costs could increase significantly to the point where the original projections no longer are adequate.

Funding

NDSCS noted that like all other institutions, their extraordinary repairs budget is funded by a process that occurs once every two years (with the legislature cycle). Each of the institutions provided many years ago a list of all of the deferred maintenance of the campus. A formula was written to determine how much money they would get. NDSCS receives about \$500k every year.

NDSCS noted that there was a one-time funding but only a small number of institutions received funding from that, not including them.

NDSCS is also impacted by the local city assessments, accounting for \$30k of the \$500k that they get allocated.

Low levels of funding not only create an unintended dynamic in the way the funds are spent, but it only resulted in further delaying the critical capital projects. This cycle has been going on for some time and major systems have just gotten older and older without the ability to be able to fund their replacement.

NDSCS also noted that the size for of the NDSCS site is much larger than standard for a university of its student population. This means that the per average student area is much larger at this college than normal, leading to much higher site costs per student. This is not recognized in the State extraordinary repairs budget formula. The university needs more than the average funding per student to manage this campus.

Prioritization

The Master List of needs for the facilities resides with the Facilities Management group, but is reviewed with the President, The Deans of the programs, The VP of Facilities and the Facility Managers. There is clarity and agreement throughout the organization of the needs and their prioritization.

The extraordinary repairs list for the facilities resides with the Facilities Management group and they decide which projects will be executed. No formal prioritization process is used.

The current structure where a foundation covers the initial cost of the construction and leases the buildings back to the institution in a lease-to-own structure, results in the understatement of the deferred maintenance needs of the institution. The area and deferred maintenance needs for these properties are not reported into the state as there is no requirement to supply this information.

Process improvement suggestions discussed with BSC:

1. Work with the system to centralize some function such as:
 - a. Costing / Estimating
 - b. Procurement
 - c. Shared Resource
2. Work with the legislature to help them determine what the current funding level for the system should be with some benchmarking, what a more reasonable level of funding should be.
3. Review the Master Plan Process. Help the legislature come up with a process that allows the systems to properly communicate their real needs. Also change the allowed maximum submissions to a different, perhaps need based system.
4. Review and change the funding of and the tracking of the Extraordinary Repairs List. Allow the current list of DM to change to match the actual current needs of the facility. Right now the funds available are so small compared to the needs that prioritization is almost not necessary. The magnitude of the needs so far exceed the funding levels that prioritization almost does not mean anything.
5. The current structure where a foundation covers the initial cost of the construction and leases the buildings back to the institution in a lease to own structure, results in the understatement of the deferred maintenance needs of the institution. The SF and deferred maintenance needs for these properties are not reported into the state as there is no requirement to supply this information.
6. SB2323 form is now submitted once every six months. This is an improvement over once every month.

7. Minot State University

VFA met with Brian Foisy, Vice President for Administration and Finance and Roger Kluck, Project Manager with EAPC on March 6, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

Minot State University is on roughly 100 Acres, although much of the property is a former landfill which is undeveloped and currently undevelopable. The development of the campus is mostly at southern end of the property.

Organizationally, Roger is employed with EAPC, an architecture and engineering firm contracted by Minot State University. Roger is the Project Manager for several projects on Minot State University campus. The maintenance staff consists of 2 carpenters, 2 plumbers and 1 electrician. Some maintenance work is executed through third party contracts including elevators, simplex and IT. Some designs are done with in-house staff, although projects over \$100,000 must be done by professional.

Recent capital projects executed by the university using state funds or bonds include:

- Swain Hall –was a State funded gut rehab of a 1950's gym/classroom building. It was originally submitted in 2001, approved in 2008
- Geothermal Plant – This utility project was partially state funded (\$7.35 million out of total \$10 million). The remainder was from Federal ARRA funds.
- New physical plant - \$2.3 million approved 2 years ago – currently in construction
- Wellness Center – new building - \$13 million construction budget funded by \$10 million in revenue bonds to be paid back in fees from wellness center operations and \$3 million from institutional cash
- Crane Hall – residence hall – funded by revenue bonds paid by rents
- Based on two projects above, bonding capacity maxed out for a while.

Recent capital projects executed by the university using university funds include:

- Turf Field – used \$1 million in university funds
- Stadium Seating - \$1.5 million in university funds
- Press Box - \$4 million – funded by the City of Minot
- Reconstruction of 11th Avenue - \$1million in university funds used to reopen road
- Landscaping – \$400K from university funds
- Flood recovery - \$2 million in university funds

In recent years, the budget for extraordinary repairs at MiSU is approximately \$900,000 per biennium. In some biennia, this can be increased by one time allocations, but this is not guaranteed.

Identify a Need

Master Plan Projects

Anyone within the University can identify a potential master plan project and submit to University administration and currently there is not a tool or a deliberate process to differentiate projects which are a definite “need” from those that are merely “wants”. As a result, often “the squeaky wheel gets the grease” and projects can be put forward that do not promote workforce initiatives. The requests go to Brian who triages and meets with president.

DM/Extraordinary Repairs

Currently, there is no campus wide assessment to determine the deferred maintenance within the University. As such, the needs are identified based on staff knowledge of the building systems and their condition. Roger defines the work to be done based on the budget allocated by formula by the state and reviews with Brian. Together, they make the final decisions. With the budget allocated, they only have money to put out fires and do not address much long term lifecycle replacements. They use their operating budget to deal with small issues in the \$1K to \$5K range and this part of the process works pretty well. They have been able to find some money for discretionary spends in recent years.

Classify a Need

Capital

Cathy and Laura (and now Rick Tonder) from the University System inspect and validate proposed projects.

DM/Extraordinary Repairs

The only classification made for DM/Extraordinary repairs is: “Does it need to be done – and can we afford it?”

Quantify Costs

Capital

Unlike the DOT where project estimating is more formal and defined by set standards, the methods used to quantify the costs for capital projects include local experience with projects along with contractor quotes. Generally, this works pretty well, as long as there is not a change in the building. However, with limited resources, the need to estimate projects with University funds limits the number of projects that can be developed, so MiSU is selective about which projects are fully developed, choosing only projects with a good chance of being approved. It would be better to have a centralized function or funds available to develop prospective projects.

DM/Extraordinary Repairs

In 1983, a statewide assessment of deferred maintenance was conducted and the level of deferred maintenance at each university was established at that time. This number is escalated for inflation by year. No growth in the deferred maintenance due to system lifecycle is accounted for year by year. Additionally, the extent of deferred maintenance is reduced by the value of projects accomplished without regard to the amount of non-deferred-maintenance-reducing or programmatic work completed as part of the project. The combination of these factors accounts for a wide discrepancy between the reported figures and actual deferred maintenance liability at the University. This discrepancy grows every year.

To manage the deferred maintenance, MiSU has a deferred maintenance list developed and maintained based on staff knowledge of the campus. Methods for estimating the cost of DM/extraordinary repair items is also based on staff’s local experience. This method of estimating used to be fairly accurate – construction in Minot ran at about 80% of the national average. However, with the increase in construction costs in the area due to the energy industry, these costs rose dramatically in recent years. Now construction in Minot is closer to 150% of national averages, but appears to have stabilized at that level and they are not experiencing the rapid unpredictable increase of the last few years. They do appear to have stabilized more recently.

MiSU is extremely conservative in estimation, using a 20% contingency in addition to the “Minot Factor” described above. This can create some problems when seeking approval for projects, but does mean that

they have limited surprises where a project is over budget and have some projects that come in under budget where the funds can be allocated elsewhere.

Prioritize Needs**Capital**

Projects are ranked at the University level. Prioritization starts with Brian and Roger. Projects then get sent to the University president. They then get sent through the standard process to the State, the Governor and the Legislature.

Officially, the State Board has a policy and a healthy list of criteria on which it prioritizes and selects projects; however it is not always clear how these are applied to arrive at the list of projects each year. No scoring matrix is released that relates the decision to the official criteria. The decisions can appear arbitrary from the University perspective.

DM/Extraordinary Repairs

Brian and Roger review potential projects at the beginning of the biennium and then reevaluate a year in. University could use a more formal prioritization process to differentiate between needs and wants. However, there is not a strong impetus to formalize prioritization given the low level of funding. If only a small number of projects can be executed in a given year, it is of little value to determine whether a project is number 20 or number 40 on the list.

Approving Capital Projects**Capital**

MiSU follows the standard procedure for submittal and approval of Master Plans. The Governor and Legislature have ultimate flexibility to approve projects.

DM/Extraordinary Repairs

There is an Internal parsing out of the annual budget by accounting and this may change in course of year. Larger projects have their own budget established. Smaller projects may be grouped into one budget. Funds must be used appropriately by departments to avoid audits. For example, state funds cannot be used to fund projects for Auxiliary buildings. Auxiliaries determine the projects they can fund using their revenue directly or through bonding.

Heads of departments can be very influential in approval of projects. Feedback from the service staff can also influence the projects.

Larger projects (>\$250,000) need state approval regardless of funding source.

Execute Projects

Capital and DM Extraordinary repair projects are managed similarly. The difference is based on project size. Project status is tracked by the MiSU accounting system and monitored by Brian. For projects over \$250,000, they are required to submit the standard State submittal on a SB2323 every six months. For projects under \$250,000, Roger manages informally – there are no formal reporting requirements.

Roger does some engineering on smaller projects to save project costs. For larger projects they go through selection process for most qualified professional. During the design phase, Roger will typically have weekly meetings with the design team and similar meetings with the contractors during construction.

Close Out a Completed Project**Capital**

There is typically a post project review at the completion of construction. The extent of the review is based on typically based on the project size, although if there has been a problem with the project, the review may be more extensive. For larger projects (> \$385,000), there is an additional Budget Section review if the funding involved gifts, grants, or donations.

DM/Extraordinary Repairs

MiSU follows AIA process for project closeout. This includes punch lists with contractors. Included in the punch list review are department people who will use the space and custodians. In addition, Roger provides post mortem on all projects to Brian.

Process improvement suggestions discussed with MiSU

The following suggestions for process improvement were discussed with MiSU:

- Since the consent calendar is essentially bulk approval for projects which are funded by other than State sources, it seems to be wasted effort to require the same level of documentation for approval as State funded projects.
- In the current Master Plan process it appears that the driver for project development is not to submit the most wanting projects but rather to be better than the other projects submitted
- The current process is timed such that the approvals can extend through the construction season, effectively delaying the project to the following year. Not only does this add time to project completion, it can make a project more expensive.
- It was suggested that State Board should establish the priorities for program and project development based on data and analysis such as workforce objectives and share these with the institutions who could then submit their needs targeted toward these priorities.
- MiSU feels there is limited predictability in the decisions that the State makes and would prefer a more transparent and structured prioritization methodology.

8. Lake Region State College

VFA met with staff from this institution on March 4, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

Lake Region State College (LRSC) is a two-year public college in Devils Lake. It was founded in 1941 as an extension of the public school system and first known as Devils Lake Junior College and Business School. This campus is about 250,000 Square Feet in size distributed mainly into two buildings (Main Building and Erlandson Technical Center).

Organizationally, Dr. Doug Darling is the president of the college and through his president's council (consisting of the colleges Vice Presidents); they make determination of what is eligible for the Master Plan as well the Extraordinary Repair lists.

Request Funding

For LRSC, they are allowed to submit two projects every two year cycle. They have submitted for funds but it was not approved for the entire amount.

Outside Money (Donors)

There is no significant outside source of money right now, although in the past they had success with community funding to get smaller projects done.

List of Projects

For both major (Master Plan) projects and Extraordinary Repairs, there is a council at the Vice President level that gathers requests from the college's staff from the various functional groups. The VP Council then along with the college's President will review what they want to do to the facilities and become responsible for coming up with the approved list of projects.

The last two Master Plan projects that LRSC requested were:

- Roof project (partially funded) - Originally \$1.2M, the roof project's cost was questioned by the State Architect and the funds were reduced to \$850K a shortage of about \$350K that the college had to fund out of its budget.
- Erlandson Technical Center Addition and Renovation - This project includes an addition of approximately 24,000 square feet to the Erlandson Technical Center, as well as renovation of about 9,000 square feet of existing space and improvements to the building's exterior. The new space will be used for expansion of the nursing program and to enhance training facilities for the Simulator Technology, Wind Energy Technician and Automotive Technology programs. The project includes \$5.7 million from the general fund. The addition will result in additional general fund operating and maintenance costs of \$57,400 per biennium.

Through the last Master Plan process the college reported approximately \$3.1 Million in deferred maintenance.

As a good practice to gather list items the VP Council performs a yearly walk thru of the facilities, as a group, to look for issues.

Leases

LRSC has some locations that are leased such as the School of Deaf, Precision Ag where they lease space for instruction, and apartments in town for residence purposes.

Location	Purpose	Funding / Maintenance
School of Deaf	Offices	(used funds to renovate the space)
Precision Ag	Students	Not maintained nor funded by LRSC
Apartments for housing	Students	Not maintained nor funded by LRSC

Project Management

Project Management is provided based on the size of the project. For smaller projects, there may be the ability to use in-house resources but it is generally very tight. If it is larger, then the university will not have the in-house resources and will hire that resource within the structure of the project. If this were the case, then one of two arrangements are requested for:

- Hire an Architect
- Construction manager-at-Risk arrangement

The controller tracks all budgets and completion.

Energy Savings (ESCOs)

They have taken advantage of ESCOs and when possible created the projects out of cost savings for replacement of inefficient systems. This process still needs to go through the approval process.

Estimating

For small projects, estimates were provided in-house using RS Means as well contractor’s estimates. For most other projects, professional assistance in the form of professional bids and architectural firms are used to provide project pre-plan level estimate.

LRSC did note that they were seeing some impact of the cost of the work due to competition with the oil industry for funds and staffing. This affect has also resulted in the college not receiving bids or having them delayed by months due to the workforce being focused on the oil industry on the western side of the state.

Funding

LRSC noted that like all other institutions, their extraordinary repairs would be funded by a process that occurred once every two years (with the legislature cycle). Each of the institutions had provided many years ago a list of all of the deferred maintenance of the campus. A formula was written to determine how much money they would get. LRSC receives about \$155,367 biennium, which equates to the 15% on the OMB formula.

LRSC noted that there was a onetime Funding but only a small number of institutions received funding from that, not including them.

Prioritization

The master list of needs for the facilities resides with the Facilities Management group, but is reviewed with the President’s Council which includes the Deans of the programs, The VP of Facilities and the Facility Managers. There is agreement throughout the organization of the needs and their prioritization.

The Extraordinary Repairs List for the facilities resides with the Facilities Management group. There is agreement throughout the organization of the needs and their prioritization and as such no formal prioritization process is used.

9. Valley City State University

VFA met with Doug Dawes, VP for Business Affairs; Margaret Dahlberg, VP for Academic Affairs; Vitaliano Figueroa, VP of Student Affairs; and Ron Pommerer, Director of Facilities Services on March 5, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

VCSU is one of the oldest campus in the state, established in 1890 as a teacher's college. VCSU still has a strong education focus – it currently has the largest elementary education program in the state.

VCSU has approximately 560,000 sf, including academic and auxiliary facilities. VCSU's buildings are on average 47% older than the NDUS average. Some buildings were constructed in late 1800's. Organizationally, VCSU has 29 in facility staff, including security and custodial.

After remaining relatively stable from 1973 to the early 2000's, VCSU experienced a 40% student population growth since 2008. This is a result of new programs including a new graduate program. Some of the growth in online and distance learning programs, which require space for more faculty but not new classroom space, but there is still significant growth in on campus students. This rapid growth puts a strain on campus facilities. As one consequence of the growth, VCSU has to reopen dormitories that had previously been closed.

Recent Projects have included:

- Rhoades Science Building - renovation and addition due to condition, additional space needs and obsolescence - first new building since 1973. Received \$10.4 million in State funds approved in last biennium, currently completing construction.

In the recent past, VCSU has been approved for approximately one project every three biennia. Most of their recent requests have been renovations of existing buildings. Currently on their list is replacement of their coal fired heating plant. The boilers in their plant are greater than 50 years old. During this past winter the University was not able to produce steam for 12 hours due to tube failures within the coal boiler and the fuel cleaver not working in the gas boiler. There have been a handful of times this winter where boiler tubes have failed and have taken the coal boiler off-line; which does not bode well for a backup boiler. The facilities group had to bring in temporary heat sources at significant cost.

VCSU typically gets \$400,000 per biennium in extraordinary repairs funding. In some years, they have received extra funding (up to \$600,000), but this is unpredictable.

Identify a Need

Capital

New capital projects are brought forward by the cabinet (VPs for Business Affairs, Academic Affairs, and Student Affairs) with input from departments and building users.

DM/Extraordinary Repairs

Facilities hired an outside consultant to do an independent evaluation as required every 6 years to be included in the last rewrite of the master plan. Ron maintains the list of deferred maintenance items in a spreadsheet and it is a long list of potential projects. There is a large discrepancy between the list and the calculation of deferred maintenance by the State which was done years ago and is decreased for projects completed by not added to.

Quantify Costs

The methodology for quantifying project costs is based on project size. If the project is greater than \$100,000, VSCU will typically get an architect to do preliminary work. The funds do the preliminary work comes from facilities budget which reduces the amount of construction work they can do within the budget. It is the hope that they can roll development fees into project once approved since the architects should have reduced costs due to familiarity with project, but this is not always the case. Therefore, they are selective about which projects they develop. It would be better to have a central function to assist with the development of projects.

For projects less than \$100,000, Ron typically does the estimating based on his experience. He may also get quotes from contractors. They use experience from previous projects to improve their estimates. VCSU is generally conservative in estimating in order to avoid going over budget. The estimates are confirmed every 6 years when the architect does the independent evaluation for the master plan.

VCSU has been indirectly impacted by the oil and gas rush. They have seen higher prices as contractors have headed west. Contractors will do work in their area if the price is right, which has resulted in higher prices. When costs exceed budgets, the university will typically have to reduce scope.

Prioritize Needs**Capital**

VCSU generally prioritizes campus life and safety first, then they look to the programmatic side of things and then to the deferred maintenance list. They can get some “pie in the sky” requests that are filtered out. Their submitted projects stay on the list for years before funded. For example, the boiler and steam project has been on the books for 12 years and has not yet been approved. Generally, projects move up from the bottom. As projects are closed, new ones are added to list at bottom. Sometimes, projects leap frog. If that happens, the cabinet will socialize the issue with the campus community to get their support for the change.

DM/Extraordinary Repairs

Because of the limited funding and the advanced age of the facilities, emergency repairs can take up a large portion of the budget. VCSU will prioritize moves to address programmatic needs first, then they will deal with items that are completely falling apart. They may also get additional requests from departments, these are accommodated if possible.

Ron sends his recommended list of projects for the year to Doug. They review this list together and decide on the recommended actions. The areas of concentration are sent to the cabinet at budget time. As things crop up in the middle of the year, the list may need to be revisited.

There is a campus beautification committee that gets \$10,000 per year for campus beautification projects. The committee is responsible for which projects are accomplished with this budget.

For Auxiliary facilities, they deal with issues as they come up. Auxiliary facilities on campus generally have a lower level of deferred maintenance liability than the academic buildings. VCSU has a total of 5 dorms, two dorms representing about 50% of area were renovated in 2003 and 2010 with bonded funds. Those dorms are at 100 % capacity. Ron assesses housing at turnover to determine what needs to be done.

At VSCU, 30% of the students are athletes, so this is a focus of the university. Major athletic functions are housed in Osmond Field House which is a mixed use facility. VCSU may approach the booster board for major projects involving athletics. For example, when there was a flood in the field house, the university

paid to replace rubber matting which was damaged and the boosters paid to upgrade the rubber matting to better material.

Formulate Proposed Capital Plans**Capital**

As noted above, VCSU hires an independent architect to create the master plan every 6 years. In the interim years, the master plan is updated internally with President, the cabinet and Ron with input from focus groups with staff and faculty.

DM/Extraordinary Repairs

Ron has white board where he plans his projects.

Approving Capital Plans**Capital**

There is no formal approval process except the submittal process required by the State.

DM/Extraordinary Repairs

There is also no formal approval process, except State review of projects over \$250,000. Projects greater than \$380,000 must be approved by Budget Section. VCSU does not have many of those, although there would be more if the budget was more in line with needs.

Request Funding**Capital**

VCSU applies for State funding using the standard process. VCSU does have access to donated funds for special projects like the president's house and the artificial turf project. Since research is not a primary function at the University, it is not a major source of revenue. VCSU does have a foundation, but most of the foundation money goes to scholarship programs and not facilities.

DM/Extraordinary Repairs

Extraordinary Repairs are funded each biennium based on funding formula. There can be additional funding for deferred maintenance, but the funding here is less consistent. Minor funding for technology projects can come from the technology fee paid by students.

Execute Projects**Capital**

Doug is responsible for overseeing the major capital projects. He has regular meetings with the architects and engineers during design and the contractors during construction. Overall, the project costs are managed in PeopleSoft. Doug also maintains spreadsheets which track the projects in more detail. VCSU must report to the State every six months with a SB2323 form. Doug reconciles projects with the architect.

DM/Extraordinary Repairs

Project spending tracked in PeopleSoft. Major projects get their own project number; minor projects can be bundled together in one number. Ron also keeps folder on each project and a spreadsheet to track them.

Close Out a Completed Project

Capital

Doug is responsible for project closeout. He uses standard construction procedures - punch lists with contractors. There is no formal process to inform the State or Master Plan other than marking the project as closed on the SB2323 form.

DM/Extraordinary Repairs

Ron tracks project process and removes them from DM list when complete

Process improvement suggestions discussed with VCSU

- Age should be taken into account when calculating extraordinary repairs budget. Because of the age of the VCSU buildings, they need more in lifecycle replacements and repairs, plus those projects are more expensive because of the construction methods of the older buildings.
- The replacement values established by the State are not consistent with the complexity and construction methods of the buildings. For example, the replacement value for Rhoades Hall is \$10.4 million and that for McFarland Hall, an 1890's building of roughly equal size is only \$6 million.
- It appears to the staff at VCSU that life safety used to be a priority in selection of projects by the State but that these projects are no longer selected.

10. University of North Dakota

VFA met with staff from this institution on March 6, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

University of North Dakota (UND), founded in 1883, is a four-year public university in Grand Forks. The main campus of the University of North Dakota consists of 240 buildings (6.4 million square feet) on 550 acres.

Organizationally, Alice Brekke, the Vice President for Finance and Operations, and the University's President and Provost determine what projects will be part of the Master Plan. The project list for Extraordinary Repair is determined by the various stakeholders of the university system and vetted out by Alice and her team of Associate Vice Presidents, as well Larry Zitzow the Director of Facilities Management at the UND.

Request Funding

UND, like NDSU, has multiple requests because of their structure (Main, Medical School, Aerospace, Housing). The following are the most recent state appropriations for 2013-2015.

- School of Medicine and Health Science (SoMHS) Renovation/Addition - This authorization will allow for construction of a new School of Medicine and Health Sciences building of approximately 377,000 square feet. The \$122.5 million project includes \$60.5 million from the general fund and \$62.0 million in BND borrowing authority. UND anticipates removing eight older buildings as a result of this project, which will save approximately \$450,000 in operating and maintenance costs annually. These dollars will be reassigned to support operational costs of the new building.
- Renovation and Addition of Law School - This project includes a complete remodel of the existing 21,000 square foot Law School and about a 4,000 square foot addition. The project will complete the code required improvements to the mechanical, electrical and fire protection systems. The project includes \$11.4 million from the general fund. The project will result in increased operating and maintenance costs of \$166,000 per biennium to be paid within the agency's budget.
- SoMHS Bismarck Family Practice Center Skywalk - This project authorizes \$750,000 from the general fund to construct a skywalk between the SoMHS Bismarck Family Practice Center building and Sanford Medical Health. A dollar for-dollar match is required from non-state resources.
- Student Housing Facility - This project would remove existing older housing units and build 250 beds on the same site. The project is Phase 3 of the Campus Housing Master Plan and provides 95,000 square feet. The project includes \$19.2 million in special funds. Equipment and furnishings are included in the cost. The project will not result in additional special fund operating and maintenance costs.
- Resident Apartment Building – Currently Leased - This authorization will allow UND to purchase an existing student-occupied apartment building. The project includes \$8.3 million of special funds. The project will not result in additional special fund operating and maintenance costs.
- College of Business and Public Administration Renovation/Addition - This is a reauthorization from the 2009-11 biennium. This project includes a complete renovation of the existing building exterior including the masonry and window systems. The project includes \$20.5 million of special

funds. The project will result in additional special fund operating and maintenance costs of \$90,000 per biennium.

- Indoor Track and Football Practice Field - This is a reauthorization from the 2009-11 biennium. The UND Athletic Department currently has no indoor multi-purpose space of sufficient size and arrangement to accommodate all-weather practice for track, football and baseball. UND has retained a sports facility consultant to develop this \$19.5 million special fund project. The project will result in increased operating and maintenance costs of \$330,750 per biennium to be paid with special funds.
- Wilkerson Dining Hall Reauthorization - This is a reauthorization of a 2011-13 biennium project. The facility is the largest UND food service center and is also a 24- hour service center for students. The project includes both a renovation of and addition to the existing facility. \$29.0 million in special funds will be generated through the issuance of revenue bonds. Operating costs are estimated to increase by \$400,000 per biennium as a result of the project and will be paid with special funds.

Outside Money (Donors)

As a larger university in the system the possibility of pursuing donor funds is more realistic than the smaller colleges and universities in the system. In the last biennium, UND successfully received outside funding for a High Performance Athletic Complex.

List of Projects

Arriving at a list of projects is very much silo driven at UND. The following is a list of the functional organizations that take part in this process:

Auxiliary (Residences)	Only needs authorization, not funding from state.
Athletics	Only needs authorization, not funding from state.
Energy Environmental Research Center	Only needs authorization, not funding from state.
Aerospace	
Medical School	
Main - University	

The last three functional areas have their own version of coming up with projects. The Deans of the areas nominate projects to the Provost and then those projects are presented to a deciding Committee.

Within UND’s campus there is as designated Historical Preservation area. Proposed projects in this area of the campus inherently create additional costs as well complexity in the approval process.

Leases

There is a Hangar facility at the local airport that was built with outside funding with the terms that the university leases and is responsible for the O&M and Capital investments.

Project Management

Project Management is run using the University’s Capital Projects group or going through the option of using a Construction Manager at Risk.

Energy Savings (ESCOs)

UND has used the same methods that other institutions to implement energy opportunity projects to get renewals accomplished. The approvals for these projects are not necessary from the state depending if the funding comes through other means such as other funding programs.

Estimating

UND has an internal Capital Planning Group that handles the cost estimating of projects. The methods to date have been using “ballpark figures” which result in understated costs that do not meet all of the project requirements because they are not properly scoped out. The Housing group uses RS Means and Architects for estimating their projects.

Funding

The OMB’s formula for UND results in 14.9% of the appropriation formulas that equates to just over \$4.5M for the 2013-2015 biennium. The university also received a one-time funding of \$1.7M.

Operations Budget

The Auxiliary properties have a constant budget because it is derived from their fees. The Main campus is based on a formula that takes account the Credits and Enrollment numbers.

NDU has two separate appropriation methods for funding; the Medical School is a program appropriation and the rest of the campus is through the University System.

Prioritization

The Master List of needs comes is determined from a committee that consists of the University’s President, the Provost, the VP of Finance and a representative from the Capital Planning Group. This committee determines the final list that gets submitted to the Board of Education.

For “Extraordinary Repairs” the university arrives at a list of projects from the data in FAMIS as well input from various stakeholders. Strategically the university has been working on using the funds to replace aging systems.

11. Mayville State University

VFA met with staff from this institution on March 7, 2014.

The Master Plan submittal and approval process is common to all Universities and Colleges. Refer to Master Plan Submittal and Approval Process section of this report for more details.

General Notes

Mayville State University (MSU) is a four-year public college in Mayville. It was founded in 1889 as one of the original “Normal Schools” in North Dakota, set in a rural area; its campus size is 55 acres.

Organizationally, Dr. Gary Hagen is the president of the college and through his president’s council (consisting of the colleges Vice Presidents); they make determination of what is eligible for the Master Plan as well the Extraordinary Repair lists.

Request Funding

For MSU, they are allowed to submit two projects every two year cycle.

The most recent state appropriations for 2013-2015:

- Old Gymnasium / Health Education Facility - This project will demolish the existing 14,000 square foot gymnasium and replace it with about 37,000 square feet of new multi-purpose educational space. The project includes \$5.5 million from the general fund. The addition will result in additional general fund operating and maintenance costs of \$80,000 per biennium.
- Campus-wide Drainage Improvements - This project will install a water conveyance system, expand the drainage ditch, provide a storm water pump lift station, relocate a primary road, and pave a gravel parking lot. The project includes \$2.2 million from the general fund. The project will not result in additional general fund operating and maintenance costs.

Outside Money (Donors)

They are prospecting it out. The state matches \$1M for every \$2M and this only applies to only Academic and Capital projects. They have some success stories with the renovations of Larson Hall, which received approximately \$900,000 in donations.

Money from donors have to go through the Legislative Budget Section which meets Quarterly for amounts greater than \$250k and it has to be applied that year.

Donor → Board of Education → Budget Section

Any amount greater than \$385K has to go to Legislature.

List of Projects

For both major (Master Plan) projects and Extraordinary Repairs, the President’s Cabinet, consisting of leaders from the multiple functions at the university decides the list of projects that may be candidates for either list.

The President’s Cabinets (meet every Monday afternoon)

Keith Academic Affairs / CIO / Child Development

Mike Athletic Director / Wellness

Don Physical Plant

Ray Student Affairs / Residences

Gary President

John Director of Development / Funding

Steve Finance / Budgeting / Food Services

Small Projects

Any need over \$1500 has to go through Cabinet Approval, and they get 2 estimates.

Don and his staff work on the smaller projects and buys the equipment directly. All of these projects get tracked through the Finance System.

List

Each functional area of the school informs the President's Cabinet about needs.

Updating the Master List through architectural services and that is how their costs get derived.

Extraordinary List

Don works on a capital list and presents to the President's Cabinet (mainly emergency repairs).

PM Tasks

Tour facilities every 2 weeks, and they just started working on it.

Leases

MSU has leased space for Head Start program, where it is maintain by them.

Project Management

Project Management is provided based on the size of the project. For smaller projects, there is the ability to use in-house resources. If it is larger, then the university does not have the in-house resources and depends on hiring within the structure of the project. If this were the case, then one of two arrangements are requested for:

- GC or agent and contract through them
- Construction manager-at-Risk arrangement

They have been forced to reduce the scope of projects due to the higher costs. One of the means to getting this done was to reduce the size (SF) of projects. This has resulted in frustration with the funding process.

Executing Projects

They have adopted the Construction Manager at Risk concept.

They track project costs in excel sheets and report to the state 2 times a year.

Energy Savings (ESCOs)

2001 Lights – couple of million

2010 Cooling plant – 6.4 Million (to get off Fuel Oil)

Estimating

To address this need, most other projects are done through professional assistance in the form of cost engineers and architectural firms are used to provide project pre-plan level estimate.

Like the other Institutions in the system, Mayville notes that they were seeing some impact of the cost of the work due to competition with the oil industry for funds and staffing.

Funding

MSU noted that like all other institutions, their extraordinary repairs would be funded by a process that occurred once every two years (with the legislature cycle). Each of the institutions had provided many years ago a list of all of the deferred maintenance of the campus. A formula was written to determine how much money they would get. Mayville receives about \$358,000 biennium that is based on OMB's formula of about 12.3%. Out of that fee about \$70,000 goes towards special assessment fees for the city.

In addition to the biennium, they received one-time funding for \$175,000.

Prioritization

The Master List of needs for the facilities resides with the Facilities Management group, but is reviewed with the President's Council which includes the Deans of the programs, The VP of Facilities and the Facility Managers. There is clarity and agreement throughout the organization of the needs and their prioritization.

The Extraordinary Repairs List for the facilities resides with the Facilities Management group. There is clarity and agreement throughout the organization of the needs and their prioritization and as such no formal prioritization process is use.

APPENDIX - CAPITAL REQUESTS

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Bismarck State College

Campus Name: Appropriated - Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Asbestos Abatement		2014	0	Armory	Asbestos Abatement		HazMat		0
Boiler Replacement		2014	0	Armory	Boiler HW - Gas-Fired - Average Renewal	Auto generated renewal for Boiler HW - Gas-Fired - Average. System Description: The building has heat generation provided by a pair of gas-fired hot water boilers.	Lifecycle	2017	220,770
Boiler Replacement #1	Remove existing steam boiler and replace with replace with hot water system. 1) Remove two existing boilers and associated boiler feed unit. 2) Remove two existing steam to water heat exchangers 3) install two 4,000 MDH high efficiency condensing hot water boilers and boiler pumps 4) Install new water to water heat exchanger to re-feed heat pump loop. 5) reroute how water piping to Mechanical Romm 202 (approx 400 feet) Cost to college in estimate by outside party does not include internal costs to complete work.	2014	361,000	Technical Center	Boilers - Steam - Gas/Oil-Fired Renewal	Auto generated renewal for Boiler #1 - Steam - Gas/Oil-Fired. System Description: The building has heating generation provided by a pair of gas/oil-fired steam boilers rated at 5,040-MBTU or 120-Boiler HP.	Lifecycle	2017	570,166
HVAC Replacement		2014	0	Armory	Rooftop Unitary AC - Cooling w/Gas Heat Renewal	Auto generated renewal for Rooftop Unitary AC - Cooling w/Gas Heat. System Description: The buildings HVAC systems includes a packaged rooftop unit with gas heating.	Lifecycle	2019	47,127

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Replace Carpet		2014	0	Armory	Carpeting - Broadloom Renewal	Auto generated renewal for Carpeting - Broadloom. System Description: Floor finishes include broadloom carpeting and base in classrooms, hallways, and offices.	Lifecycle	2019	595,817
Replace Roof		2014	0	Schafer Hall	Single-Ply Membrane - Fully Adhered Renewal	Auto generated renewal for Single-Ply Membrane - Fully Adhered. System Description: The roof covering includes a single-ply fully adhered membrane with insulation.	Lifecycle	2020	130,164
Replace Roofing		2014		Armory	Single-Ply Membrane - Ballasted Renewal	Auto generated renewal for Single-Ply Membrane - Ballasted. System Description: The roof covering includes a single-ply membrane covered with stone ballast and deck insulation.	Lifecycle	2019	470,390
Replace Suspended Ceiling		2014	0	Armory	ACT System - Standard Renewal	Auto generated renewal for ACT System - Standard. System Description: Standard suspended ACT ceiling system with 2 x 2 or 2 x 4 regular tiles in 15/16 or 9/16-in. grids.	Lifecycle	2020	334,879

Campus Name: Appropriated - Heating Plant

VFA Commentary									
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Boiler Replacement		2014	0	Heating Plant	Boiler Hot Water - Gas-Fired Renewal	Auto generated renewal for Boiler Hot Water - Gas-Fired. System Description: The building has heat generation provided by a gas-fired hot water boiler rated at 7,500-MBTU. The boiler includes a pair of primary pumps rated at 2-HP 100-GPM each.	Lifecycle	2017	440,594
Boiler Replacement		2014	0	Heating Plant	Boiler Steam - Gas-Fired Renewal	Auto generated renewal for Boiler Steam - Gas-Fired. System Description: The building has heat generation provided by a pair of gas-fired steam boilers rated at 4,800-MBTU or 100-Boiler HP.	Lifecycle	2017	476,255
Summary			361,000						3,286,162

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Dakota College at Bottineau

Campus Name: Appropriated - Assessed

Campus Capital Request				VFA Commentary						
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost	
No Submitted Capital Projects reported by DCB	DCB did not report any submitted Capital Projects to VFA during this study. The VFA team did assess 3 sample buildings on campus.		0	Old Main	Placeholder for Submitted Capital Request		PROGRAM		0	
Summary			0							0

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Dickinson State University

Campus Name: Appropriated - Assessed

Campus Capital Request					VFA Commentary				
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Heating and Cooling Upgrades		2014	0	May Hall	Heat Pump - Thru Wall - PTAC Renewal	Auto generated renewal for Heat Pump - Thru Wall - PTAC. System Description: The building HVAC system include thru-wall, stand-alone, heat pump units or PTAC with heating coils.	Lifecycle	2016	509,808
Heating and Cooling Upgrades		2014	0	May Hall	Heat Pump - Water Source Renewal	Auto generated renewal for Heat Pump - Water Source . System Description: The HVAC systems includes water source heat pumps, with ducted distribution on the 2nd and 3rd floors.	Lifecycle	2018	2,044,698
Heating and Cooling Upgrades		2014	0	May Hall	Split System - Ductless - Telephone Rm Renewal	Auto generated renewal for Split System - Ductless - Telephone Rm. System Description: The building has cooling provided by a ductless split system with remote condenser section for the telephone room.	Lifecycle	2020	5,208
Heating and Cooling Upgrades			0	May Hall	Controls - Hybrid DDC Renewal	Auto generated renewal for Controls - Hybrid DDC. System Description: The HVAC controls are being converted from a pneumatic system to electronic DDC currently the system is a hybrid with both electronic and pneumatic controls for the air handlers, fan coils, VAV boxes, and zone control thermostats The year installed is adjusted and years remaining increased since the facility has a steady renovation, maintenance and repair schedule.	Lifecycle	2018	916,194
Replace Roof on Original Footprint		2014	79,150	Murphy Hall	Single-Ply Membrane - Ballasted - 1994 Renewal	Auto generated renewal for Single-Ply Membrane - Ballasted - 1994. System Description: The roof covering includes a single-ply membrane covered with stone ballast and deck insulation.	Lifecycle	2019	81,777
Summary			79,150						3,557,685

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Lake Region State College

Campus Name: Appropriated - Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Doors	there are 15 doors in this area that need replacement at \$450,00* per door.	2014	6,750	Student Union	Swinging Doors - 3 x 7 - Aged Renewal	Auto generated renewal for Swinging Doors - 3 x 7 - Aged. System Description: The interior door assemblies include single doors in wood and/or steel frames and with standard operating hardware. Unit cost for the system is based on Fire-Rated hollow metal door and frame assemblies as the standard for overall cost purposes. Information provided by the client indicates that approximately 40% of all doors are aged and need to be replaced.	Lifecycle	2016	15,865
Electrical Service Replacement	Electrical – the main distribution panels in this area is in need of replacement. Parts are no longer available to these panels and the loads on these panels are at their capacity. There is no more room for expansion. The sub panels in this building are also becoming full with the increase of electric devises used on campus. Estimated costs are \$90,000.00 for the service and \$40,000 for the sub panels. The sub panels were thermo scanned and are showing hot spots that indicates possible failure in the future.	2014	40,000	Student Union	Switchgear - 400A 208Y/120V + Distribution Renewal	Auto generated renewal for Switchgear - 400A 208Y/120V + Distribution. System Description: The building has a 2000Amp/ 600V/3 phase/ 3wire electrical distribution switchgear which includes feeders, panel board and feed from Library. Note: -The system is original was installed in 1966.	Lifecycle	2017	45,789
Replace Electric Service as Part of Wind Turbine Project		2014	30,000	Main Building	Switchgear - 400A 208Y/120V + Distribution Renewal	Auto generated renewal for Switchgear - 400A 208Y/120V + Distribution. System Description: The building has a 800Amp/ 600V/3 phase/ 3wire electrical distribution switchgear which includes feeders, panel board and distribution located near room 131.	Lifecycle	2014	37,234

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Replace Electric Service as Part of Wind Turbine Project		2014	100,000	Main Building	Switchgear - 800A 208Y/120V + Distribution Renewal	Auto generated renewal for Switchgear - 800A 208Y/120V + Distribution. System Description: The building has a 800Amp/ 600V/3 phase/ 3wire electrical distribution switchgear which includes feeders, panel board and distribution located near room 131.	Lifecycle	2014	70,452
Replace Electric Service as Part of Wind Turbine Project			100,000	Main Building	Main Electrical Service - 800Amp / 208Y/120V / 3 Phase Renewal	Auto generated renewal for Main Electrical Service - 800Amp / 208Y/120V / 3 Phase. System Description: The building includes electrical service switch board located near room 136.	Lifecycle	2014	174,955
Replace Wood Windows			23,800	Library	Wood Windows Renewal	Auto generated renewal for Wood Windows. System Description: The building fenestration includes complex wood window assemblies that include glazing and painted wood paneling.	Lifecycle	2016	32,468
Switchgear Replacement	Electrical - the main distribution panels in this area is in need of replacement. Parts are no longer available to these panels and the loads on these panels are at their capacity. There is no more room for expansion. The sub panels in this building are also becoming full with the increase of electric devises used on campus. Estimated costs are \$90,000.00 for the service and \$40,000 for the sub panels. The sub panels were thermo scanned and are showing hot spots that indicates possible failure in the future.	2014	90,000	Student Union	Main Electrical Service - 400Amp / 240Y/120V / 3 Phase Renewal	Auto generated renewal for Main Electrical Service - 400Amp / 240Y/120V / 3 Phase. System Description: The building includes electrical service switch board feed from Library. Note: -The system is original was installed in 1986.	Lifecycle	2017	123,383
Window	Windows - this area is in need of window replacement. The north wall of the dining room	2014	74,874	Student Union	Wood Windows Renewal	Auto generated renewal for Wood Windows. System Description: The building fenestration includes complex wood window assemblies that include	Lifecycle	2016	77,475

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Replacement	and the south wall of the union have large windows. These windows are not energy efficient. Also the walls are in need of repair. When there was some remodeling done to the union it was found that the sill plate was rotten in several places. This makes the stability of the wall questionable. The cost for material to replace the north and south walls is \$74874.40*.					glazing and painted wood paneling.			

Campus Name: Appropriated - Not Assessed

VFA Commentary									
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Interior Doors	Doors - there are 5 interior doors that are damaged and should be replaced. Cost per door is \$450.00*.	2014	2,250	Academic Wing	Replace Exterior Doors	The Doors are beyond useful life and damaged due to heavy use.	Lifecycle	2015	3,663
Summary			467,674						581,284

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Mayville State University

Campus Name: Appropriated - Not Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Campus Center Elevator Installation				MaSU - 2012 Master Capital Plan - Three Items	Campus Center Elevator Installation	It was indicated to the assessment team that an elevator is planned for installation at the Campus Center building. The assessment team confirms that an elevator is required to satisfy accessibility needs in this facility. The photographs that are linked are intended to show that the elevator is required as well as to indicate the exterior location desired by the client for the installation.	Accessibility	2016	233,364
Emergency Power Generators				MaSU - 2012 Master Capital Plan - Three Items	Emergency Power Generators	During a site visit, operation and management expressed their concern for the age and condition of the existing power generators and the lack of availability of parts. The existing emergency power system includes 300, 400 and 334 kW's generators as well as ATS, battery charger, muffler, day tank, feeder, wiring, and panels.	Integrity	2017	512,488
Summary									745,852

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Minot State University

Campus Name: Appropriated - Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Carpeting			750,000	Old Main	Carpeting - Broadloom Renewal	Auto generated renewal for Carpeting - Broadloom. System Description: Floor finishes include medium priced carpeting and base in offices, classrooms, and hallways	Lifecycle	2014	816,732
Exterior Doors		2014	75,000	Dome	Door Assembly - 6 x 7 Storefront Renewal	Auto generated renewal for Door Assembly - 6 x 7 Storefront. System Description: The exterior doors include pairs of swinging glazed aluminum storefront leafs plus glazed transoms, aluminum frames, and hardware including closers.	Lifecycle	2019	167,281
Windows		2014	800,000	Old Main	Aluminum Windows - 1980 Renewal	Auto generated renewal for Aluminum Windows - 1980. System Description: The building includes aluminum framed exterior units with insulating glass.	Lifecycle	2019	1,166,894
Summary			1,625,000						2,150,907

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

School Name: ND State College of Science

Campus Name: Appropriated - Not Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Barnard Hall - None		2014	0	Barnard Hall	Ceiling Finishes - ACT System Aged	The acoustic ceiling tile (ACT) system located throughout the classrooms is aged and exhibits damage, rusting and staining. Removal and replacement of ceiling tile is warranted to maintain the visual appeal of the interior ceiling finish.	Reliability	2017	77,459
Barnard Hall - None		2016	0	Barnard Hall	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	302,799
Barnard Hall - None		2019	0	Barnard Hall	Exterior Walls - Exterior Walls Stained	Exterior facade elements are stained from environmental pollutants. Cleaning and resealing the brick and precast concrete facade is recommended as to prolong the useful life of the exterior wall assembly.	Reliability	2017	89,563
Mayme Green - None		2019	0	Mayme Green Allied Health Center	Floor Finishes - Carpet Broadloom Worn	The carpet located within the offices is worn and beyond their useful life expectancy of 10 years. Removal and replacement planning is warranted to maintain the visual appeal of the facility.	Reliability	2017	103,713
Mechanical Systems - None		2019	0	Mechanical Systems	Exterior Walls - Precast Concrete Panels Stained	Exterior pre-cast concrete wall panels facade elements are stained from environmental pollutants. Re-finishing of the exterior wall panels will rejuvenate the appearance of the building.	Maintenance	2017	63,650
Patterson Maintenance Center - None		2016	0	Patterson Maintenance Center	Roofing - Metal Roofing Caulking Deteriorated	The caulking around the metal roof fasteners is deteriorated with noticeable signs of wear and penetrations within the underside of the structure. Repairs of the roof is necessary as to maintain the building envelope.	Reliability	2016	13,213
Patterson Maintenance Center - Window replacement		2015	15,000	Patterson Maintenance Center	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	18,247

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Stern Cultural Center - None		2016	0	Stern Cultural Center	Exterior Windows - Aluminum Windows Aged	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	106,867
Student Center - Exterior Door and Window Replacement		2014	140,000	Student Center	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	192,422
Student Center - Exterior Door and Window Replacement		2016	30,000	Student Center	Exterior Doors - 3 x 7 Metal Doors	The exterior single metal doors exhibit deterioration, damaged and lack compliant hardware. Full replacement is warranted.	Reliability	2016	30,533
Student Center - Exterior Door and window replacement		2016	100,000	Student Center	Exterior Doors - 6 x 7 Storefront Worn	The exterior 6 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	106,172
Tech Center - Roof replacement		2014	500,000	Tech Center	Roofing - Single-Ply Membrane Ballasted Worn	The ballasted roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	483,466
Trade Tech II - None		2019	0	Trade Tech II	Ceiling Finishes - ACT Lacking	Classroom 149 lacks an acoustical ceiling tile (ACT) system. Installation of an ACT system is warranted to improve the acoustical and visual appeal of the interior ceiling finish.	Mission	2017	4,640
Trade Tech II - Roof replacement		2015	225,000	Trade Tech II	Roofing - Single-Ply Membrane Ballasted Worn	The ballasted roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	302,715

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Window Replacement		2016	225,000	Mildred Johnson Library	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	466,075
carpeting in library part of building (18 rooms)		2017	82,000	Mildred Johnson Library	Floor Finishes - Carpet Broadloom Worn	The carpet located within the library and offices are worn and beyond their useful life expectancy of 10 years. Removal and replacement planning is warranted to maintain the visual appeal of the facility.	Reliability	2017	142,157

Campus Name: Appropriated - Site - Not Assessed

Campus Capital Request					VFA Commentary				
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Site Infrastructure Renewal	Condition of below grade site systems such as sewer, storm sewer, water distribution (incl hydrants) are based on interviews with NDSCS staff. Parking and walkways would need to be redone after repair work on below grade systems.	2014	12,000,000	Site Infrastructure	Site Sewer, Storm, Water, etc Renewal	Renewal for Site Sewer, Storm, Water, and related paved parking and walkways. Cost based on 2009 engineering proposal to NDSCS, updated to 2014 for inflation and scope adjustment.	Lifecycle	1990	12,000,000

Campus Name: Appropriated - Heating Plant

Campus Capital Request					VFA Commentary				
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Central Heating Plant - None		2015	0	Central Heating Plant	Roofing - Built-Up Roof System	The Built-Up Roof System (BUR) is beyond its useful life expectancy and exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement will be warranted to maintain the integrity of the building	Reliability	2015	114,761

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Central Heating Plant - None		2016	0	Central Heating Plant	Exterior Windows - Steel Windows Worn	envelope. The steel framed windows are worn, failed and aged beyond their useful rated life expectancy. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	32,729
Summary			13,317,000						14,651,181

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

School Name: ND State College of Science

Campus Name: Appropriated - Not Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Barnard Hall - None		2014	0	Barnard Hall	Ceiling Finishes - ACT System Aged	The acoustic ceiling tile (ACT) system located throughout the classrooms is aged and exhibits damage, rusting and staining. Removal and replacement of ceiling tile is warranted to maintain the visual appeal of the interior ceiling finish.	Reliability	2017	77,459
Barnard Hall - None		2016	0	Barnard Hall	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	302,799
Barnard Hall - None		2019	0	Barnard Hall	Exterior Walls - Exterior Walls Stained	Exterior facade elements are stained from environmental pollutants. Cleaning and resealing the brick and precast concrete facade is recommended as to prolong the useful life of the exterior wall assembly.	Reliability	2017	89,563
Mayme Green - None		2019	0	Mayme Green Allied Health Center	Floor Finishes - Carpet Broadloom Worn	The carpet located within the offices is worn and beyond their useful life expectancy of 10 years. Removal and replacement planning is warranted to maintain the visual appeal of the facility.	Reliability	2017	103,713
Mechanical Systems - None		2019	0	Mechanical Systems	Exterior Walls - Precast Concrete Panels Stained	Exterior pre-cast concrete wall panels facade elements are stained from environmental pollutants. Re-finishing of the exterior wall panels will rejuvenate the appearance of the building.	Maintenance	2017	63,650
Patterson Maintenance Center - None		2016	0	Patterson Maintenance Center	Roofing - Metal Roofing Caulking Deteriorated	The caulking around the metal roof fasteners is deteriorated with noticeable signs of wear and penetrations within the underside of the structure. Repairs of the roof is necessary as to maintain the building envelope.	Reliability	2016	13,213
Patterson Maintenance Center - Window replacement		2015	15,000	Patterson Maintenance Center	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	18,247

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Stern Cultural Center - None		2016	0	Stern Cultural Center	Exterior Windows - Aluminum Windows Aged	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	106,867
Student Center - Exterior Door and Window Replacement		2014	140,000	Student Center	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	192,422
Student Center - Exterior Door and Window Replacement		2016	30,000	Student Center	Exterior Doors - 3 x 7 Metal Doors	The exterior single metal doors exhibit deterioration, damaged and lack compliant hardware. Full replacement is warranted.	Reliability	2016	30,533
Student Center - Exterior Door and window replacement		2016	100,000	Student Center	Exterior Doors - 6 x 7 Storefront Worn	The exterior 6 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	106,172
Tech Center - Roof replacement		2014	500,000	Tech Center	Roofing - Single-Ply Membrane Ballasted Worn	The ballasted roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	483,466
Trade Tech II - None		2019	0	Trade Tech II	Ceiling Finishes - ACT Lacking	Classroom 149 lacks an acoustical ceiling tile (ACT) system. Installation of an ACT system is warranted to improve the acoustical and visual appeal of the interior ceiling finish.	Mission	2017	4,640
Trade Tech II - Roof replacement		2015	225,000	Trade Tech II	Roofing - Single-Ply Membrane Ballasted Worn	The ballasted roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	302,715

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Window Replacement		2016	225,000	Mildred Johnson Library	Exterior Windows - Aluminum Windows	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	466,075
carpeting in library part of building (18 rooms)		2017	82,000	Mildred Johnson Library	Floor Finishes - Carpet Broadloom Worn	The carpet located within the library and offices are worn and beyond their useful life expectancy of 10 years. Removal and replacement planning is warranted to maintain the visual appeal of the facility.	Reliability	2017	142,157

Campus Name: Appropriated - Site - Not Assessed

Campus Capital Request					VFA Commentary				
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Site Infrastructure Renewal	Condition of below grade site systems such as sewer, storm sewer, water distribution (incl hydrants) are based on interviews with NDSCS staff. Parking and walkways would need to be redone after repair work on below grade systems.	2014	12,000,000	Site Infrastructure	Site Sewer, Storm, Water, etc Renewal	Renewal for Site Sewer, Storm, Water, and related paved parking and walkways. Cost based on 2009 engineering proposal to NDSCS, updated to 2014 for inflation and scope adjustment.	Lifecycle	1990	12,000,000

Campus Name: Appropriated - Heating Plant

Campus Capital Request					VFA Commentary				
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Central Heating Plant - None		2015	0	Central Heating Plant	Roofing - Built-Up Roof System	The Built-Up Roof System (BUR) is beyond its useful life expectancy and exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement will be warranted to maintain the integrity of the building	Reliability	2015	114,761

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Central Heating Plant - None		2016	0	Central Heating Plant	Exterior Windows - Steel Windows Worn	envelope. The steel framed windows are worn, failed and aged beyond their useful rated life expectancy. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	32,729
Summary			13,317,000						14,651,181

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

School Name: North Dakota State University

Campus Name: Appropriated - Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Ceres - Complete Installation of the Rest of the Windows		2014	384,000	Ceres Hall	Aluminum Windows - Older Renewal	Auto generated renewal for Aluminum Windows - Older. System Description: The building includes aluminum framed exterior units with insulating glass.	Lifecycle	2014	477,297
Ceres - Drantile		2014	0	Ceres Hall	Substructure - Defective Foundation Waterproofing	There is evidence of water infiltration throughout the foundation walls. An invasive investigation and repairs are warranted as to maintain the integrity of the building envelope.	Reliability	2016	163,511
Ceres - Tuckpointing		2014	75,000	Ceres Hall	Exterior Walls - Brick Walls - Mortar Joints Aged and Deteriorated	Some of the exterior brick walls have areas of deteriorated mortar joints that require re-pointing as to maintain the integrity of the building envelope.	Reliability	2016	116,830
EML - Windows - Def Maintenance		2014	250,000	E. Morrow Lebedeff Hall	Aluminum Windows - Older Renewal	Auto generated renewal for Aluminum Windows - Older. System Description: The building includes aluminum framed exterior units with insulating glass.	Lifecycle	2014	464,552
Stevens - Entrance Doors		2014	6,000	Stevens Hall	Door Assembly - 3 x 7 HM Renewal	Auto generated renewal for Door Assembly - 3 x 7 HM. System Description: Exterior doors include 3 x 7 steel door and steel frame with hinges, lockset (lever), exit hardware and closer. Includes painted door and painted frame.	Lifecycle	2014	12,806
Stevens - Gate City Entrance		2014	0	Stevens Hall	Door Assembly - 6 x 7 Storefront Renewal	Auto generated renewal for Door Assembly - 6 x 7 Storefront. System Description: The exterior doors include pr. swinging glazed aluminum storefront leads plus glazed transom, aluminum frame, hardware including closers. Includes vestibule doors.	Lifecycle	2014	107,410
Stevens - Windows		2014	70,000	Stevens Hall	Aluminum Windows - Older Renewal	Auto generated renewal for Aluminum Windows - Older. System Description: The building includes aluminum framed exterior units with insulating glass. Located along the south and east facades.	Lifecycle	2014	135,046

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Walster Hall - Windows		2014	300,000	Walster Hall	Aluminum Windows Renewal	Auto generated renewal for Aluminum Windows. System Description: The building includes aluminum framed exterior units with insulating glass.	Lifecycle	2014	569,172

Campus Name: Appropriated - Not Assessed

VFA Commentary									
Campus Capital Request									
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
15th Ave N - Pavak Main Line	15th Ave N - Pavak Main Line	2014	30,000	Site	15th Ave N - Pavak Main Line	15th Ave N - Pavak Main Line has sag in it	Capacity		0
Askanase - Ladder, hatch lock, cap on walls		2014	15,000	Askanase Hall	Ladder		Lifecycle		0
Askanase Hall - Four Wall Repair Requests	West Wing Walls Cap + Install Expansion Joint West Wall + Replace Brick on West Wall + East Wing Walls Cap with Granite	2014	9,900	Askanase Hall	Exterior Walls - Brick Walls - Mortar Joints Aged and Deteriorated	The exterior brick walls have areas of deteriorated mortar joints that require re-pointing as to maintain the integrity of the building envelope.	Reliability	2016	127,654
Askanase Hall - Replace Windows and Doors		2014	0	Askanase Hall	Exterior Windows - Aluminum Windows Worn	The aluminum frame windows located throughout the building exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	207,045
BSA Sanitary Line Add Manhole	BSA Sanitary Line Add Manhole	2014	20,000	Site	BSA Sanitary Line Add Manhole	BSA Sanitary Line Add Manhole	Capacity		0
Bentson Bunker - Replace Smaller		2015	0	Bentson-Bunker Field House	Exterior Windows - Aluminum Windows Worn	The aluminum frame windows located throughout the Basement exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve	Reliability	2016	40,597

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Windows						energy efficiency.			
Bentson-Bunker Field House -		2014	40,000	Bentson-Bunker Field House	Exterior Doors - 6 x 7 Storefront Worn	The exterior 6 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	62,757
Bentson-Bunker Field House - None		2014	0	Bentson-Bunker Field House	Exterior Stairs - Concrete Damaged	The concrete stairs situated along the east and west facades have deteriorated and spalling sections of concrete. Full replacement and installation of code compliant railings is recommended.	Reliability	2016	30,049
Bentson-Bunker Field House - None		2014	0	Bentson-Bunker Field House	Substructure - Defective Foundation Waterproofing	There is evidence of water infiltration throughout the foundation walls. An invasive investigation and repairs are warranted as to maintain the integrity of the building envelope.	Reliability	2016	173,326
Bentson-Bunker Field House - None		2019	0	Bentson-Bunker Field House	Ceiling Finishes - GWB Ceiling Lacking	The main storage room lacks a fully finished ceiling system. Installation of a GWB ceiling is warranted to maintain the visual appeal of the facility and the existing ceiling assembly fire resistance rating.	Mission	2017	4,831
Bentson-Bunker Field House - Outside Door Replacement		2014	20,000	Bentson-Bunker Field House	Exterior Doors - 3 x 7 Storefront Worn	The exterior 3 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	22,588
C.I. Nelson Hall		2014	0	C.I. Nelson Hall	Substructure - Defective Foundation Waterproofing	There is evidence of water infiltration throughout the foundation walls. An invasive investigation and repairs are warranted as to maintain the integrity of the building envelope.	Reliability	2016	55,997
Dunbar - Draintile		2014	0	Dunbar Hall	Substructure - Defective Foundation Waterproofing	There is evidence of water infiltration throughout the foundation walls. An invasive investigation and repairs are warranted as to maintain the integrity of the building envelope.	Reliability	2016	103,520
Dunbar - Exterior Doors		2014	15,000	Dunbar Hall	Exterior Doors - 6 x 7 Storefront Worn	The exterior 6 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	24,489

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Electrical - None		2014	0	Electrical Engineering	Floor Finishes - VAT Worn	The vinyl composite tile (VAT) located throughout the building is beyond its useful life. Removal and replacement planning is warranted to maintain the visual appeal of the facility. The vinyl composite tiles include asbestos containing materials (ACM's). The proactive abatement of this material is recommended.	HazMat	2015	222,394
Engineering Administration - None		2014	0	Engineering Administration	Balcony Walls and Handrails - Metal Pipe Railings Worn	The metal guard rails situated at the exterior skywalks are corroded and damaged from impact and environmental conditions. Removal and replacement is warranted to maintain the integrity of the system.	Reliability	2016	197,597
Finish Water Line Across West Bound Lane of Centennial	Finish Water Line Across West Bound Lane of Centennial	2014	30,000	Site	Finish Water Line Across West Bound Lane of Centennial	Finish Water Line Across West Bound Lane of Centennial	Capacity		0
Harris - None		2014	0	Harris Hall	Partitions - Plaster Walls Damaged	The plaster walls in Room 33A are deteriorated and water damaged. Replacement is recommended as to update the integrity and finish of the wall system.	Reliability	2016	3,618
Harris - Replace 1988		2014	133,000	Harris Hall	Roofing - Single-Ply Membrane Worn	The roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	166,764
Heating Plant Shutoffs	Heating Plant Shutoffs	2014	5,000	Site	Heating Plant Shutoffs	Heating Plant Shutoffs	Capacity		0
Hultz Hall - Caulking		2014	0	Hultz Hall	Exterior Walls - Stucco Cracked and Deteriorated	The stucco finish on the penthouse walls exhibits cracks and deteriorated sections. Repairing the stucco is necessary as to maintain the integrity of the building envelope.	Reliability	2016	8,490
Hultz Hall - Mechanical Room Doors		2014	0	Hultz Hall	Exterior Doors - 6 x 7 Metal Doors Worn	The exterior penthouse metal doors exhibit deterioration, damaged and lack compliant hardware. Full replacement is warranted.	Reliability	2016	13,498

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Install New Water From Service Center to Robinson		2014	35,000	Site	Install New Water From Service Center to Robinson	Install New Water From Service Center to Robinson	Capacity		0
Install New Water Into Waldron		2014	20,000	Site	Install New Water Into Waldron	Install New Water Into Waldron	Capacity		0
KKB - Exterior Lintels need painting and caulk replaced with mortar		2014	50,000	KKB Family Life Center	Exterior Lintels		Lifecycle		0
KKB - NW Windows Seals Failing		2014	350,000	KKB Family Life Center	Exterior Windows - Aluminum Windows Aged	The aluminum frame windows located throughout the northwest elevation exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	316,150
KKB - Two Door Requests	Replace double doors to EML (Safety request) + Replace 2nd floor double doors (Safety request)	2014	12,000	KKB Family Life Center	Interior Doors - Wood Doors Worn	The interior wood doors situated at the Second Floor stairwell and link to the EML Building are deteriorated, damaged and lack compliant hardware. Replacement planning for the door assemblies is warranted.	Reliability	2016	56,342
Ladd - DrainTile		2014	0	Ladd Hall	Substructure - Defective Foundation Waterproofing	There is evidence of water infiltration throughout the foundation walls. An invasive investigation and repairs are warranted as to maintain the integrity of the building envelope.	Reliability	2016	111,179
Ladd - Exterior Doors		2014	15,000	Ladd Hall	Exterior Doors - 3 x 7 Storefront Worn	The exterior 3 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	35,765
Ladd - Install		2014	234,000	Ladd Hall	Roofing - Metal Roof Worn	The roof system exhibits some or all of the following extensive deterioration: debris,	Reliability	2015	189,397

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
EPDM Over Metal Roof						inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is with a single-ply membrane over the existing system is recommended to maintain the integrity of the building envelope.			
Loftsgard - 1991		2014	311,880	Loftsgard Hall	Roofing - Single-Ply Membrane Ballasted Worn	The ballasted roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	350,692
Loftsgard - None		2014	0	Loftsgard Hall	Wall Finishes - Vinyl Wall Covering Worn	The wall covering located throughout the building is peeling at the edges, has been damaged in several places and is past its expected life. Primarily located at main corridors.	Reliability	2017	19,671
Morrill - None		2014	0	Morrill Hall	Floor Finishes - VAT Worn	The vinyl composite tile (VAT) located throughout Room 12 is beyond its useful life. Removal and replacement planning is warranted to maintain the visual appeal of the facility. The vinyl composite tiles include asbestos containing materials (ACM's). The proactive abatement of this material is recommended.	HazMat	2015	30,904
Morrill - None		2014	0	Morrill Hall	Substructure - Defective Foundation Waterproofing	There is evidence of water infiltration throughout the foundation walls. An invasive investigation and repairs are warranted as to maintain the integrity of the building envelope.	Reliability	2016	136,609
Morrill - None		2016	0	Morrill Hall	Ceiling Finishes - ACT System Worn	The acoustic ceiling tile (ACT) system located throughout the building are worn and exhibits damage, rusting and staining. Removal and replacement of ceiling tile is warranted to accommodate the installation of new ductwork and VAV boxes.	Mission	2016	150,704
Morrill - None		2016	0	Morrill Hall	Exterior Windows - Caulking Deterioration	The exterior windows have deteriorated caulking which allows wind, rain and snow to penetrate the building. Re-caulking is warranted to maintain the integrity of the building envelope.	Reliability	2016	27,396
Music - Lobby Windows Seals Failed		2014	150,000	Music Education	Exterior Windows - Aluminum Windows Worn	The aluminum frame windows located throughout the lobby exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	295,007

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Music - Round Entryway Windows and Doors		2014	130,000	Music Education	Exterior Doors - 6 x 7 Storefront Beyond Useful Life	The exterior 6 x 7 storefront doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	43,391
Music - South Entrance		2014	80,000	Old Main	Exterior Doors - Beyond Useful Life	The exterior doors are worn and do not meet current ratings. Full replacement is warranted.	Reliability	2016	43,391
Music - Tuckpointing		2014	100,000	Music Education	Exterior Walls - Brick Walls - Mortar Joints - Aged and Deteriorated	The exterior brick walls situated at the main entrance has small areas of deteriorated mortar joints that require re-pointing as to maintain the integrity of the building envelope.	Reliability	2016	96,520
Newman Field add drainage West side	Newman Field add drainage West side	2014	20,000	Site	Newman Field Add Drainage West Side	Newman Field add drainage West side	Capacity		0
None		2014	0	KKB Family Life Center	Roofing - Single-Ply Membrane Ballasted Worn	The ballasted roof system exhibits some or all of the following extensive deterioration: debris, organics, setting, inadequate drainage, sealant de-bonded and collapsed insulation. Replacement is warranted to maintain the integrity of the building envelope.	Reliability	2015	319,206
None		2014	0	Ladd Hall	Exterior Windows - Aluminum Windows Worn	The aluminum frame windows located throughout the skywalk exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	513,458
Old Main - Replace Remaining Windows		2014	80,000	Old Main	Exterior Windows - Windows Beyond Useful Life	The aluminum frame windows located throughout the lobby exhibit wear and experience leakage issues. Replacement is warranted to maintain the integrity of the building envelope and improve energy efficiency.	Reliability	2016	109,640
Old Main - Tuckpointing		2014	80,000	Old Main	Exterior Walls - Brick Walls - Mortar Joints - Aged and Deteriorated	The exterior brick walls situated at the main entrance has small areas of deteriorated mortar joints that require re-pointing as to maintain the integrity of the building envelope.	Reliability	2016	92,392

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Putnam - None		2015	0	Putnam Hall	Exterior Doors - 6 x 7 Storefront Worn	The exterior 6 x 7 storefront doors are worn, exhibit rust and do not meet current ratings. Full replacement is warranted.	Reliability	2015	24,489
Replace Water Service Along Bolley		2014	75,000	Site	Site Water Along Bolley	Replace water service along Bolley from 13th Ave on south end to Centennial Blvd on north end, east side by Hultz.	Capacity		0
Sewer Main from Waldron to Centennial Blvd	Sewer Main from Waldron to Centennial Blvd	2014	100,000	Site	Sewer Main from Waldron to Centennial Blvd	Sewer Main from Waldron to Centennial Blvd	Capacity		0
Shepperd Arena		2014	10,000	Shepperd Arena	Exterior Doors - 3 x 7 Metal Doors Beyond Useful Life	The exterior single metal doors exhibit deterioration, damaged and lack compliant hardware. Full replacement is warranted.	Reliability	2016	52,120
South Eng - Caulk Windows		2014	0	South Engineering	Exterior Windows - Caulking Deterioration	The exterior windows have deteriorated caulking which allows wind, rain and snow to penetrate the building. Re-caulking is warranted to maintain the integrity of the building envelope.	Reliability	2016	15,421
Waldron Hall - Floor Finishes - VAT Worn	None listed.	2014	0	Waldron Hall	Floor Finishes - VAT Worn	The vinyl composite tile (VAT) located throughout the building is beyond its useful life. Removal and replacement planning is warranted to maintain the visual appeal of the facility. The vinyl composite tiles include asbestos containing materials (ACM's). The proactive abatement of this material is recommended.	HazMat	2015	130,238
Waldron Hall - Tuckpointing - Lower South		2014	20,000	Waldron Hall	Exterior Walls - Brick Walls - Mortar Joints Aged and Deteriorated	The exterior brick walls on the lower portion of the south elevation have areas of deteriorated mortar joints that require re-pointing as to maintain the integrity of the building envelope.	Reliability	2016	33,278
Summary			3,275,780						6,705,198

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

School Name: University of North Dakota

Campus Name: Appropriated - Assessed

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Bryce Streibel Brick Replacement		2014	750,000	Bryce Streibel Hall/Skybridge	Brick Masonry Veneer - Deteriorated Masonry	The brick masonry requires replacement due to the spalling brick units and inadequate moisture control in the wall assembly. Observed field conditions suggest that moisture is entering the wall assembly at offsets in brick detailing, at lintels and at transition joints to the precast concrete panels. The presence of moisture is resulting in cracking and spalling of brick units and deterioration of joint mortar and caulking. The deteriorated joints further exacerbate the moisture infiltration problems. Limited damage to interior finishes has also occurred. The VFA assessment of this item concurs with the findings of the UND Facilities Department. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List – 2013-2015".	Reliability	2016	736,544
Harrington AHU Upgrade		2015	750,000	Harrington Hall	Harrington Hall- AHU Upgrade Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing HVAC system, with the exception of the Jodsaas Center, does not provide ventilation via ductwork and air handlers to the majority of the classrooms and offices in this building. Upgrading the HVAC system by the installation of air handlers and air distribution ductwork will modernize the building and bring it up to ventilation standards currently used for new construction.	Mission	2016	987,510
Med School Chiller Scheduled Overhaul		2015	50,000	School of Medicine Health Sciences	Cooling Generating Systems- Chiller - McQuay - 400 Ton Centrifugal - Overhaul	Chillers - McQuay Units - 400 Ton Centrifugal - Overhaul. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List – 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	70,725
Med School		2015	750,000	School of Medicine	Traction Geared Passenger Elevators Nos. 1 & 2 - 1950	Auto generated renewal for Traction Geared Passenger Elevators Nos. 1 & 2 - 1950 Section.	Lifecycle	2017	904,577

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Elevator (2) Replacement				Health Sciences	Section Renewal	System Description: The conveying equipment includes low-rise electric traction geared passenger elevators rated at 4000 lbs. and serving 7 stories. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.			
O'Kelly Hydronic Piping Insulating		2015	25,000	O'Kelly Hall	Distribution Piping - Aged HVAC Heating System Piping Insulation - O'Kelly Hydronic Piping	The O'Kelly HVAC hydronic heating system distribution piping insulation is deteriorated, is more than 30 years old and has exceeded the BOMA Building Systems Useful Life of 30 years. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	41,735

Campus Name: Appropriated - Not Assessed

VFA Commentary									
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Abbott Air Handling Unit Replacement		2015	80,000	Abbott Hall/Walkway	Abbott Hall- Air Handling Unit Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing air handlers are beyond their normal operating life and will require replacement. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	117,326
Armory Hydronic Piping Insulating		2015	10,000	Armory	Distribution Piping - Aged HVAC Heating System Piping Insulation - Armory Hydronic Piping	The Armory HVAC hydronic heating system distribution piping insulation is deteriorated, is more than 30 years old and has exceeded the BOMA Building Systems Useful Life of 30 years. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	16,356

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
CF Library Heatpumps Replacement		2015	90,000	Chester Fritz Library	CF Library - Heat Pumps Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing heat pumps are beyond their normal operating life and will require replacement. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	122,397
Carengie Sanitary Sewer Replacement		2015	20,000	Carnegie Hall	Carnegie Sanitary Sewer Replacement Project	Replace deteriorated sections of sanitary sewer piping. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	34,786
Clifford Heatpumps Replacement		2015	15,000	Thomas J Clifford Hall/Skywalk	Clifford - Heat Pumps Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing heat pumps are beyond their normal operating life and will require replacement. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	27,879
Coulee Lighting Upgrade		2015	100,000	Site - Coulee Lighting	Coulee Lighting Upgrade Project	The existing pole mounted lighting fixtures have exceeded normal operating life and parts such as globes are no longer available. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	149,302
Electrical Distribution (Upgrade EC Service Circuit 1)		2014	400,000	EC Service Circuit 1	Electrical Upgrade	Design Project for capacity upgrades.	Capacity		400,000
Electrical Distribution (Upgrade EC)		2014	225,000	EC Service Circuit 4	Electrical Upgrade	Design Project for capacity upgrades. Cost estimate is from UND's list (not independently estimated by VFA.)	Capacity		400,000

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Service Circuit 4)									
Facilities Maintenance Remodel		2015	150,000	Facilities Building/ Central Receiving	Remodel Facilities Management	The front office area of the Facilities Management Building has some inefficiencies in circulation and space utilization due to the configuration that should be improved. The need for renovation and reconfiguration impacts the building entrance and office areas of the 1st and 2nd Floors. The facility also lacks accessible restrooms. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Mission		212,024
Gamble Air Handling Unit Replacement		2015	60,000	Gamble Hall	Gamble Hall - Air Handling Unit Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing air handlers are beyond their normal operating life and will require replacement. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	98,243
McCannell Heatpumps Replacement		2015	15,000	McCannell Hall/ Walkway	McCannell - Heat Pumps Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing heat pumps are beyond their normal operating life and will require replacement. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	28,311
Merrifield Reheat Replacement		2015	25,000	Merrifield Hall	Merrifield Reheat Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing reheats are beyond their normal operating life and will require replacement. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	43,331
Odegard Heatpumps Replacement		2015	30,000	John D. Odegard Hall/ Sphere	Odegard - Heat Pumps Replacement Project	The VFA assessment of this item concurs with the findings of the UND Facilities Department. The existing heat pumps are beyond their normal operating life and will require replacement. The University of North Dakota has included this item	Reliability	2016	45,945

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = "True"

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Ryan Hall Mechanical System Upgrade (part 1 of 2)		2015	25,000	Ryan Hall/Skywalk	Ryan Hall Mechanical Systems Upgrade - Distribution Systems - Unbalanced HVAC Water and Airflow	on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". During the assessment it was observed that some spaces are adequately heated and others are not. Site personnel indicated that the unbalanced heating and cooling of the building occurs year round and affects the comfort of the workplace. The problem is occurring on all floors to varying degrees. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	21,019
Ryan Hall Mechanical System Upgrade (part 2 of 2)		2015	75,000	Ryan Hall/Skywalk	Ryan Hall Mechanical Systems Upgrade - Inadequate Heat	The HVAC heating system perimeter units and distribution piping is not installed in all areas that require it. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015". The VFA assessment of this item concurs with the findings of the UND Facilities Department.	Reliability	2016	115,134
Starcher Generator Upgrade		2015	200,000	Starcher Hall	Starcher Hall Generator Upgrade Project	The existing 32 KW emergency generator does not have the capacity to support critical activities in this building. A larger generator is required. The VFA assessment of this item concurs with the findings of the UND Facilities Department. The University of North Dakota has included this item on their "Extra Ordinary Repair / Deferred Maintenance Project List - 2013-2015".	Reliability	2016	316,449
Tuckpointing (Various Bld)	(Clifford is among various buildings requiring tuckpointing. Request Cost shown reflects total amount requested.)	2015	200,000	Thomas J Clifford Hall/Skywalk	Campus Wide Tuckpointing and Caulking	Precast concrete panels, stone panels and brick masonry require substantial tuckpointing and re-caulking to maintain the integrity of the building envelopes of multiple buildings across campus. Buildings with requirements include: Clifford Hall, Ryan Hall, Abbott Hall, Merrifield Hall, among others.	Reliability	2016	255,441
Witmer Chiller Replacement		2015	600,000	Witmer Hall	Cooling Generating System - Witmer Chiller Replacement Project	Cooling Generating System - Witmer Chiller Replacement Project	Reliability	2015	703,387
Summary			4,645,000						5,848,421

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Valley City State University

Campus Name: Appropriated - Heating Plant

Campus Capital Request				VFA Commentary					
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Coal Fired 800 HP Boiler	The coal fired boiler is required to operate when the gas company calls the plant and tells it is has to shut off natural gas. This happens during the coldest weather. Therefore the coal fired boiler needs to be sized for the largest load that the college would experience. Due to recent new buildings on campus and projections for new buildings on campus it has been decided to assume anew boiler size of 800 Horse Power (HP). The footprint for this size boiler does not fit within the current boiler plant. Therefore a new coal fired boiler would have to be located outside of the existing plant. The options for this would be across the street in the location of the metals lab or in the west portion of the coal storage and handling building. A coal fired boiler would require significant coal ash handling equipment to ensure that the discharge meets national and state pollution control requirements. Coal fired boilers require a coal storage and handling area so that the coal can be		8,500,000	Heating Plant	New Coal Boilers and Building	The existing boilers conditions were reviewed and found: Boiler # 1 Coal fired steam boiler rated for 20,000 lbs./hr. and was installed in 1962 which surpassed its useful life of 30 years , the boiler is in poor operationing condition. Boiler # 3 Dual fuel Gas/Oil rated for 20 000 lbs/hr. installed 1970 which had few tubes replacements and per technical staff is in unreliable operation conditions also it surpassed its useful life.	Lifecycle	2017	8,846,961

[122] 2013- '15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
	downloaded, stored and then moved into place. Some of this requires manual labor and some coal movement though the plant is dome with conveyers and augers. In addition once the coal is burned the fly ash needs to be collected and trucked away. Based on quotes from supplier and discussions with contractors the estimated cost of the coal replacement boiler, coal handling system, stack, emissions control equipment and new building is approximately \$8,500,000. This would include the cost of replacing the existing natural gas/fuel oil boiler.								
Natural Gas/Fuel Oil Boiler 800 HP	A natural gas/fuel oil boiler is required to take advantage of the low cost of natural gas and the fuel oil switch over allows a back-up for the coal in case the coal fired boiler fails. Two 800 HP combination fuel oil natural gas boilers would be provided if the coal fired boiler was eliminated completely. To appropriately provide two combination natural gas fuel oil boilers will also require some permitting because the boiler would be larger than they currently are. The underground fuel oil storage tank should also be replaced	2014	3,000,000	Heating Plant	Replace Current Gas/Oil Boilers	The existing boilers are well beyond useful life and need to be replaced. The college's 1965 steam boiler is a combination gas oil boiler. Expected life is approximately 30 years making this boiler approximately 17 years beyond expected life.	Lifecycle	2015	3,290,314

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
	at this time. The 2-800 HP natural gas/fuel oil boilers will fit within the existing boiler room. All of the support equipment in the boiler will also need replacing in either scenario. The smoke stack for the boilers would need to be replaced. The estimated cost of the combination natural gas/fuel oil boilers is approximately \$3,000,000.								
Summary			11,500,000						12,137,275

[122] 2013-'15 Capital Requests

Lists Requirements that have "Is Capital Request" = 'True'

School Name: Williston State College

Campus Name: Appropriated - Heating Plant

Campus Capital Request					VFA Commentary				
Request Name	Request Scope Descr	Request Due Date	Request Cost	Asset Name	Requirement Name	Requirement Description	Category	Action Year	Requirement Cost
Conversion to Hot Water			0	Heating Plant - Stevens Hall	Conversion to Hot Water	The university suggests converting the existing steam system to hot water. The conversion will reduce the need for chemicals and pumps and eliminate the need for heat exchangers. The expected improvement is a 25% improvement in efficiency. Estimate is based on engineering study completed by third party.	Technological Improvements	2015	376,000
Heating Plant - None		2016	0	Heating Plant - Stevens Hall	Boilers -Approaching End of Service Life	The gas fired boilers are original to the 1968 Stevens Hall construction, although upgraded with new burners in 1999 the boilers are beyond the typical service life 35 to 40 years. Replacement should be scheduled. The requirement includes allowances for changes in Stevens Hall with the replacement of existing steam piping and equipment with hot water piping and pumps is estimated. Hazardous material abatement is not included.	Lifecycle	2016	214,795
Summary			0						590,795

APPENDIX - RESEARCH EXPENDITURES

Total Research Expenditures

All Fields - 2012 (in \$ thousands)

Academic Discipline, Broad (standardized)	Arts and Music	Business and Management	Communication and Librarianship	Education	Engineering	Geosciences	Humanities	Interdisciplinary or Other Sciences	Law	Life Sciences	Math and Computer Sciences	Not Available	Other Non-sciences or Unknown Disciplines	Physical Sciences	Psychology	Social Sciences	Social Service Professions	Total
Academic Institution (standardized)																		
University of North Dakota	\$0	\$52	\$7	\$16	\$45,141	\$12,140	\$6	\$1,828	\$3	\$16,937	\$21	\$0	\$272	\$3,684	\$0	\$21	\$1	\$80,149
SUNY at Buffalo	\$106	\$964	\$924	\$14,726	\$65,395	\$3,076	\$1,129	\$1,503	\$299	\$227,647	\$16,845	\$0	\$50	\$17,435	\$5,076	\$3,953	\$1,098	\$360,226
University of Alabama at Birmingham, The	\$0	\$0	\$0	\$2,063	\$19,363	\$1,067	\$0	\$0	\$0	\$419,424	\$2,369	\$0	\$2,008	\$3,202	\$2,195	\$1,398	\$0	\$455,779
University of Hawaii at Manoa	\$0	\$0	\$0	\$7,873	\$7,873	\$0	\$30,116	\$0	\$0	\$123,691	\$20,518	\$0	\$0	\$45,881	\$79	\$5,578	\$0	\$312,311
University of Illinois at Chicago	\$35	\$864	\$193	\$2,740	\$19,986	\$2,911	\$932	\$12,105	\$0	\$294,870	\$13,807	\$0	\$14	\$14,285	\$13,430	\$10,614	\$1,929	\$385,625
University of Kentucky	\$518	\$751	\$868	\$1,121	\$55,825	\$3,493	\$617	\$10,563	\$243	\$247,506	\$5,304	\$0	\$1,556	\$10,489	\$11,048	\$9,894	\$970	\$360,776
University of Louisville	\$110	\$742	\$208	\$11,001	\$23,867	\$498	\$368	\$0	\$396	\$134,091	\$668	\$0	\$14,679	\$2,399	\$1,832	\$1,964	\$4,019	\$196,842
University of Missouri, Kansas City	\$14	\$227	\$230	\$231	\$914	\$262	\$375	\$0	\$0	\$16,478	\$1,031	\$0	\$3,890	\$2,943	\$1,320	\$564	\$358	\$29,227
University of Nevada, Reno	\$0	\$135	\$0	\$1,225	\$14,176	\$13,006	\$740	\$10,060	\$160	\$34,445	\$887	\$0	\$215	\$7,337	\$659	\$2,547	\$114	\$85,726
University of North Carolina at Chapel Hill, The	\$988	\$1,955	\$4,924	\$1,621	\$3,957	\$30,195	\$4,115	\$491	\$481	\$850,816	\$19,453	\$0	\$2,863	\$30,404	\$44,595	\$84,837	\$4,855	\$884,791
University of Pittsburgh, Pittsburgh	\$28	\$1,076	\$33	\$10,005	\$31,167	\$9,552	\$122	\$10,566	\$216	\$738,999	\$10,837	\$0	\$5,534	\$24,841	\$9,905	\$3,926	\$9,431	\$866,638
University of Tennessee, The, Knoxville	\$49	\$7,341	\$372	\$1,654	\$62,903	\$6,389	\$1,029	\$21,320	\$193	\$20,194	\$25,966	\$0	\$2,027	\$19,486	\$1,483	\$7,947	\$279	\$178,252
University of Utah	\$63	\$190	\$933	\$2,036	\$63,904	\$10,431	\$887	\$0	\$389	\$269,496	\$27,154	\$0	\$0	\$28,406	\$2,100	\$4,077	\$0	\$430,056
University of Vermont	\$0	\$62	\$0	\$20	\$9,360	\$1,198	\$46	\$4,041	\$0	\$93,895	\$1,339	\$0	\$0	\$2,559	\$2,892	\$285	\$0	\$115,697
University of Virginia, Charlottesville	\$67	\$97	\$690	\$13,579	\$63,009	\$5,515	\$4,462	\$3,021	\$695	\$239,197	\$9,021	\$0	\$0	\$26,607	\$6,626	\$8,574	\$0	\$383,359
Wright State University	\$0	\$0	\$0	\$0	\$14,831	\$664	\$0	\$623	\$0	\$20,492	\$4,578	\$0	\$1	\$53,310	\$1,399	\$15	\$0	\$46,213
Peer Average*:	\$188	\$1,200	\$938	\$4,689	\$31,763	\$11,135	\$1,235	\$9,521	\$364	\$235,415	\$10,653	\$0	\$3,076	\$15,979	\$7,109	\$9,758	\$2,561	\$339,568
Academic Discipline, Broad (standardized)																		
Academic Institution (standardized)																		
North Dakota State University	\$0	\$1	\$216	\$1,358	\$11,762	\$194	\$44	\$3,664	\$0	\$84,116	\$2,752	\$0	\$0	\$14,344	\$3,261	\$13,761	\$0	\$135,493
Clemson University	\$56	\$46	\$0	\$3,417	\$54,513	\$0	\$240	\$1,809	\$0	\$33,776	\$6,951	\$0	\$27,844	\$7,774	\$1,118	\$4,562	\$0	\$142,096
Iowa State University	\$0	\$1,590	\$420	\$1,982	\$63,085	\$2,358	\$4,328	\$1,273	\$0	\$129,652	\$18,453	\$0	\$0	\$22,143	\$1,364	\$14,347	\$0	\$260,995
University of Alaska, Fairbanks	\$5	\$500	\$24	\$1,887	\$14,806	\$59,597	\$198	\$5,196	\$0	\$25,897	\$4,565	\$0	\$36,453	\$9,626	\$125	\$1,828	\$0	\$160,407
University of Arkansas, Fayetteville	\$51	\$4,534	\$9	\$2,160	\$27,386	\$2,771	\$1,032	\$0	\$372	\$66,792	\$391	\$0	\$2,868	\$10,273	\$429	\$3,458	\$671	\$123,199
University of Connecticut	\$15	\$345	\$515	\$1,967	\$38,052	\$8,601	\$640	\$6,894	\$41	\$153,834	\$4,309	\$0	\$0	\$6,915	\$24,290	\$5,573	\$2,863	\$256,854
University of Delaware	\$0	\$2,064	\$0	\$5,869	\$54,374	\$20,424	\$611	\$1,099	\$0	\$46,311	\$5,340	\$0	\$203	\$18,497	\$3,872	\$8,410	\$0	\$170,174
University of Idaho	\$25	\$2	\$36	\$317	\$15,248	\$6,450	\$78	\$4,417	\$62	\$60,736	\$2,658	\$0	\$1,380	\$2,638	\$179	\$2,801	\$0	\$97,227
University of Kentucky	\$518	\$751	\$868	\$1,121	\$55,825	\$3,493	\$617	\$10,563	\$243	\$247,506	\$5,304	\$0	\$1,556	\$10,489	\$11,048	\$9,894	\$970	\$360,776
University of Maine	\$0	\$2	\$7	\$449	\$25,040	\$18,537	\$4	\$7,426	\$0	\$32,877	\$1,740	\$0	\$0	\$3,809	\$481	\$1,763	\$0	\$92,135
University of Nebraska-Lincoln	\$2,185	\$2,462	\$816	\$2,536	\$39,996	\$5,567	\$4,968	\$10,076	\$1,882	\$114,300	\$16,284	\$0	\$0	\$23,808	\$13,690	\$15,200	\$0	\$253,320
University of Nevada, Reno	\$0	\$135	\$0	\$1,225	\$14,176	\$13,006	\$740	\$10,060	\$160	\$34,445	\$887	\$0	\$215	\$7,337	\$659	\$2,547	\$114	\$85,726
University of Rhode Island	\$0	\$10	\$0	\$9,948	\$7,354	\$44,786	\$59	\$1,399	\$0	\$24,000	\$646	\$0	\$6,292	\$6,783	\$1,647	\$1,230	\$289	\$114,323
University of Tennessee, The, Knoxville	\$49	\$7,341	\$372	\$1,654	\$62,903	\$6,389	\$1,029	\$21,320	\$193	\$20,194	\$25,966	\$0	\$2,027	\$19,486	\$1,483	\$7,947	\$279	\$178,252
University of Vermont	\$0	\$62	\$0	\$20	\$9,360	\$1,198	\$46	\$4,041	\$0	\$93,895	\$1,339	\$0	\$0	\$2,559	\$2,892	\$285	\$0	\$115,697
University of Wyoming	\$0	\$75	\$0	\$904	\$6,529	\$28,797	\$1	\$438	\$1	\$20,236	\$1,254	\$0	\$819	\$10,576	\$291	\$1,773	\$0	\$65,611
Peer Average*:	\$363	\$1,328	\$341	\$2,344	\$32,550	\$15,855	\$1,042	\$6,856	\$369	\$73,630	\$6,620	\$0	\$8,026	\$10,576	\$4,238	\$5,441	\$861	\$65,186

* Peer Average only includes those institutions with expenditures in that category.

Federally Financed Research Expenditures

All Fields - 2012 (in \$ thousands)

Academic Discipline, Broad (standardized)	Arts and Music	Business and Management	Communication and Librarianship	Education	Engineering	Geosciences	Humanities	Interdisciplinary or Other Sciences	Law	Life Sciences	Math and Computer Sciences	Not Available	Other Non-sciences or Unknown Disciplines	Physical Sciences	Psychology	Social Sciences	Social Service Professions	Total
Academic Institution (standardized)	\$0	\$52	\$7	\$0	\$29,060	\$8,077	\$6	\$152	\$0	\$14,136	\$9	\$0	\$0	\$2,957	\$0	\$20	\$0	\$54,476
SUNY College at Buffalo	\$30	\$145	\$307	\$5,524	\$44,827	\$2,144	\$407	\$0	\$0	\$13,967	\$10,495	\$0	\$0	\$9,943	\$3,477	\$1,894	\$453	\$193,613
University of Alabama at Birmingham	\$0	\$0	\$0	\$1,775	\$15,270	\$774	\$0	\$0	\$0	\$279,946	\$2,086	\$0	\$0	\$2,707	\$1,748	\$1,166	\$0	\$306,210
University of Hawaii at Manoa	\$0	\$0	\$0	\$0	\$4,508	\$54,281	\$0	\$15,675	\$0	\$71,083	\$19,091	\$0	\$0	\$26,414	\$0	\$2,680	\$0	\$193,722
University of Illinois at Chicago	\$0	\$39	\$23	\$1,706	\$10,697	\$1,540	\$41	\$3,874	\$0	\$194,308	\$9,401	\$0	\$0	\$10,383	\$9,140	\$4,079	\$697	\$246,128
University of Kentucky, All Campuses	\$0	\$146	\$596	\$463	\$27,122	\$1,893	\$77	\$3,680	\$0	\$105,571	\$2,931	\$0	\$176	\$5,542	\$8,773	\$2,301	\$607	\$159,678
University of Louisville	\$0	\$60	\$0	\$5,761	\$11,340	\$220	\$0	\$0	\$51	\$83,189	\$578	\$0	\$2,687	\$1,439	\$1,488	\$918	\$2,165	\$89,978
University of Missouri, Kansas City	\$0	\$0	\$111	\$43	\$405	\$119	\$12	\$0	\$0	\$11,885	\$777	\$0	\$0	\$2,511	\$973	\$609	\$137	\$17,522
University of Nevada-Reno	\$0	\$0	\$0	\$47	\$10,544	\$10,101	\$0	\$881	\$39	\$23,710	\$796	\$0	\$97	\$6,068	\$659	\$1,851	\$114	\$55,437
University of North Carolina at Chapel Hill	\$217	\$683	\$1,983	\$19	\$2,496	\$20,266	\$2,072	\$0	\$0	\$445,833	\$16,405	\$0	\$1,645	\$25,260	\$27,203	\$60,166	\$2,100	\$906,348
University of Pittsburgh, All Campuses	\$0	\$917	\$32	\$7,869	\$22,961	\$6,091	\$96	\$6,744	\$98	\$547,566	\$7,414	\$0	\$613	\$15,979	\$8,421	\$2,904	\$6,051	\$637,857
University of Tennessee Univ-Wide Adm Cent Off	\$0	\$6,093	\$111	\$615	\$42,932	\$4,662	\$373	\$7,015	\$13	\$74,378	\$22,241	\$0	\$2,121	\$14,263	\$1,273	\$5,905	\$1	\$181,996
University of Utah	\$0	\$68	\$40	\$778	\$45,931	\$7,486	\$296	\$0	\$315	\$180,632	\$18,326	\$0	\$0	\$16,014	\$1,051	\$2,179	\$0	\$273,150
University of Vermont	\$0	\$0	\$0	\$0	\$5,865	\$815	\$0	\$3,687	\$0	\$71,403	\$895	\$0	\$0	\$2,106	\$2,883	\$189	\$0	\$87,843
University of Virginia, All Campuses	\$31	\$11	\$95	\$11,937	\$42,022	\$3,671	\$2,455	\$992	\$167	\$142,739	\$7,468	\$0	\$0	\$20,812	\$6,715	\$1,339	\$0	\$240,254
Wright State University, All Campuses	\$0	\$0	\$0	\$0	\$9,401	\$340	\$0	\$212	\$0	\$11,964	\$1,637	\$0	\$0	\$1,975	\$1,023	\$0	\$0	\$25,552
Peer Average:	\$93	\$909	\$366	\$3,055	\$19,701	\$7,768	\$648	\$4,751	\$112	\$155,878	\$8,030	\$0	\$1,155	\$10,784	\$5,343	\$6,299	\$1,569	\$221,019
Academic Discipline, Broad (standardized)	Arts and Music	Business and Management	Communication and Librarianship	Education	Engineering	Geosciences	Humanities	Interdisciplinary or Other Sciences	Law	Life Sciences	Math and Computer Sciences	Not Available	Other Non-sciences or Unknown Disciplines	Physical Sciences	Psychology	Social Sciences	Social Service Professions	Total
Academic Institution (standardized)	\$0	\$0	\$124	\$1,040	\$5,551	\$125	\$0	\$1,598	\$0	\$14,429	\$2,155	\$0	\$0	\$11,333	\$2,964	\$7,141	\$0	\$46,490
Clemson University	\$48	\$18	\$0	\$751	\$27,896	\$0	\$66	\$86	\$0	\$9,431	\$3,453	\$0	\$2,698	\$4,540	\$827	\$1,989	\$0	\$51,764
Iowa State University	\$0	\$385	\$10	\$703	\$33,211	\$978	\$0	\$877	\$0	\$53,131	\$9,114	\$0	\$0	\$11,390	\$99	\$8,354	\$0	\$118,242
University of AK Fairbanks, All Campuses	\$5	\$352	\$12	\$1,550	\$10,894	\$47,436	\$168	\$3,488	\$0	\$21,394	\$4,498	\$0	\$95	\$7,965	\$125	\$1,672	\$0	\$99,674
University of Arkansas, Main Campus	\$0	\$10	\$1	\$16	\$11,216	\$1,752	\$33	\$0	\$0	\$14,420	\$250	\$0	\$6	\$6,106	\$60	\$309	\$0	\$34,189
University of Connecticut, All Campuses	\$0	\$39	\$173	\$939	\$25,741	\$6,204	\$45	\$419	\$0	\$86,226	\$3,350	\$0	\$0	\$7,253	\$18,011	\$3,198	\$1,666	\$153,264
University of Delaware	\$0	\$1,049	\$0	\$4,702	\$43,828	\$15,062	\$427	\$678	\$0	\$22,563	\$6,791	\$0	\$134	\$1,762	\$3,377	\$2,847	\$0	\$117,072
University of Idaho	\$0	\$0	\$25	\$178	\$9,499	\$4,537	\$17	\$3,057	\$0	\$31,540	\$1,994	\$0	\$1,136	\$1,762	\$124	\$1,252	\$0	\$55,115
University of Kentucky, All Campuses	\$0	\$146	\$596	\$463	\$27,122	\$1,893	\$77	\$3,680	\$0	\$105,571	\$2,931	\$0	\$176	\$5,542	\$8,773	\$2,301	\$407	\$159,678
University of Maine	\$0	\$0	\$0	\$233	\$9,742	\$10,572	\$0	\$4,535	\$0	\$11,631	\$136	\$0	\$0	\$1,325	\$294	\$1,193	\$0	\$39,681
University of Nebraska Central Admin Sys Off	\$0	\$301	\$0	\$1,148	\$21,151	\$3,692	\$227	\$4,515	\$0	\$121,631	\$11,090	\$0	\$0	\$16,101	\$9,412	\$6,201	\$2	\$195,471
University of Nevada-Reno	\$0	\$0	\$0	\$47	\$10,544	\$10,101	\$0	\$881	\$39	\$23,710	\$796	\$0	\$97	\$6,068	\$659	\$1,851	\$114	\$55,437
University of Rhode Island	\$0	\$0	\$0	\$939	\$6,708	\$36,238	\$42	\$9,187	\$0	\$18,208	\$596	\$0	\$4,579	\$5,929	\$1,620	\$771	\$0	\$83,754
University of Tennessee Univ-Wide Adm Cent Off	\$0	\$6,093	\$111	\$615	\$42,932	\$4,662	\$373	\$7,015	\$13	\$74,378	\$22,241	\$0	\$2,121	\$14,263	\$1,273	\$5,905	\$1	\$181,996
University of Vermont	\$0	\$0	\$0	\$0	\$5,865	\$815	\$0	\$3,687	\$0	\$71,403	\$895	\$0	\$0	\$2,106	\$2,883	\$189	\$0	\$87,843
University of Wyoming	\$0	\$60	\$0	\$599	\$19,418	\$26,044	\$0	\$239	\$0	\$16,849	\$1,254	\$0	\$819	\$4,382	\$237	\$1,731	\$0	\$57,441
Peer Average:	\$26	\$844	\$133	\$942	\$19,418	\$12,143	\$150	\$2,952	\$26	\$45,472	\$4,625	\$0	\$1,185	\$7,391	\$3,185	\$2,647	\$438	\$99,373

* Peer Average only includes those institutions with expenditures in that category.

