

2019 SENATE EDUCATION

SB 2116

2019 SENATE STANDING COMMITTEE MINUTES

Education Committee
Sheyenne River Room, State Capitol

SB 2116
1/7/2019
30489

- Subcommittee
 Conference Committee

Committee Clerk: Lynn Wolf

Explanation or reason for introduction of bill/resolution:

A bill relating to the infrastructure revolving loan fund.

Minutes:

Att # 1 Tammy Dolan; Att # 2 Jed Shiver
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Chairman Schaible: The committee will come back to order and we will take up SB 2116. We will hear testimony in favor of the bill first.

Tammy Dolan, Vice Chancellor for Administrative Affairs ND University System: See Attachment # 1

Chairman Schaible: Questions? The question I have is there is only so much money in the fund and this would obviously deplete the fund more quickly. The fund was set up for political subs and now we are adding another one. Is there enough funding in there to do what you want to do and is fair to take away from those other political subs?

Tammy Dolan: Mr. Chair and committee members, as I understand it right now, the fund is already topped out, so there is no money to be loaned out. It has been loaned out to capacity. Yes, we would be another user of the fund when funds become available and if we use them a political subdivision wouldn't be able to.

Chairman Schaible: I guess it is fair to assume they wouldn't care for that.

Tammy Dolan: But I wouldn't want to speak for them, Mr. Chairman.

Chairman Schaible: Other questions? Seeing none, thank you.

(0.03:43) Jed Shiver: See Attachment #2

(0.07:27) Chairman Schaible: Could you explain how you would pay back the loan, using the principle, where would those funds come from?

Jed Shiver: UND generates revenue from a variety of sources including indirect cost recovery from grants, tuition, appropriated dollars, and other way via local funds. The principal and interest payments for the revolving loan fund will be an operating expense embedded into facilities and we would allocate that expense to our revenue generating portions of UND in the same way we allocate all types of expenses now. For example, if we were to take out a \$15 million loan on a 20 year term at 2% I think it would be just about somewhere in the neighborhood of \$1.3 – 1.4 million a year that we would have to defray during that period per year. Our operating budget is about \$450 million, so we think we have the capacity to be able to handle that ongoing operating expense to defray the expense.

Chairman Schaible: What would be your level of debt that you think you could handle if you would have access to this fund?

Jed Shiver: I don't think we would ever go higher than \$15 million. I would say it would be up to \$15 million.

Chairman Schaible: Other questions.

(0:09:09) Michael Pieper: Included in the attachments is an audit by a firm Ices, International that does audits of higher education facilities. This is a breakdown of our non-building infrastructure. Not every piece on there would be eligible for this revolving loan fund based on current language, but you'll see there is more than adequate deferred maintenance and capital renewal expected in the next 10 years. Another document in the attachment is just some note and figures dealing with the roadway system. We have extensive private roads, sewer system, water lines. As you can see in the document, it will talk about not only the quantity, but the current condition. This is done by an engineering firm out of Grand Forks that does a lot of political subdivisions with their transportation infrastructure. Ours got raked at 50, which is poor condition. One of the ways we would use this revolving loan fund is as we do road projects because of the age of the infrastructure a lot of times we are dealing with a lot of band aid fixes. This would allow us to take bigger chunk of a line, get it replaced and know that it is in good repair for the next 40 years so we don't have to go back and dig up the investments we have made to fix another problem. There is a lot of information and I would be happy to answer any questions you might have, but I just wanted to give you an idea about the extent of the infrastructure that we have – about \$300 million of infrastructure outside of our buildings.

Chairman Schaible: If this does not happen, what is your plan to fix deferred maintenance.

Michael Pieper: I would say a lot of this infrastructure doesn't rank out very high when it comes to the amount of work that we are trying to do within our facility. We tend to do a lot of small repairs and push it down the road. We allocate money every year to deal with those emergency responses. This would allow us to shift some of our emergency budgets towards that and get a much longer fix out of it. I would protect some investment we are making on the top of the surface. We have a lot of emergency repairs throughout the year. We send out notices to students and staff. Probably half a dozen emergency water leaks – fixes - last week. It would help us take care of those and have less disruption in the classroom.

Chairman Schaible: Questions? Thanks, Mike. Any other testimony in favor of the bill? If not is there testimony in opposition to the bill? Seeing none, we will close the hearing.

Senator Davison: Mr. Chairman, how much money is allocated or appropriated to that fund – the BND? You said there wasn't any left in it.

Chairman Schaible: I am not sure.

(0:13:45) Kelvin Hullet, Economic Development & Government Program Manager for BND: Mr. Chairman the Infrastructure Revolving Loan Fund was created by the legislature in the 2015 legislative session. At that point, \$50 million was appropriated from the strategic investment and improvements fund and \$100 million came from the bank's capital. \$150 million comprises the amount of money in the fund. We go through three different application rounds with our local political subdivisions and as of today the full \$150 million is subscribed out to or committed out to loans across the state – to cities and a few counties.

Senator Davison: Would it be safe to say then there were some applications that were rejected based on a competitive process and if there were more dollars in the fund there could have been an opportunity to do more work?

Kelvin Hullet: Yes, as we went through the process, we had applications above the \$150 million mark. We've been able to work with the political subdivisions on timing and have been able to meet a majority of the needs, but there have been some applications that have not been funded.

Senator Davison: How often do you take applications?

(0:15:35) Kelvin Hullet: The timing is based on what we have coming in for payments. We also look at who hasn't moved forward with a project and if they aren't moving forward on the project, we pull that back and commit those funds.

Senator Davison: Is there an interest rate that they pay in the revolving fund? Is it 2%?

Kelvin Hullet: Yes, the interest rate is set by the legislature. It is a legislative fund that the BND administers. It is a 2% fund that can go up to 30 years.

Senator Rust: Could you provide a summary of the fund since 2015.

Kelvin Hullet: Yes, we can – we provided that to the interim committee. We will provide that to you.

Chairman Schaible: What is your projection of funds that would be available to loan out per year.

Kelvin Hullet: I think we have about a million coming back in per year, so in the fund, we have that amount that can be relent out.

Chairman Schaible: Will that grow?

Kelvin Hullet: It may grow some, but we don't anticipate a large growth in that.

Chairman Schaible: Thank you.

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Education Committee
Sheyenne River Room, State Capitol

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1/22/2019
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- Subcommittee
 Conference Committee

Committee Clerk Signature Lynn Wolf

Explanation or reason for introduction of bill/resolution:

A bill relating to the infrastructure revolving loan fund.

Minutes:

Chairman Schaible: Committee, let's look at SB 2116. What are your wishes?

Senator Davison: There is no money available to expand the use of these dollars in the Infrastructure Revolving Loan Fund. Adding institutions to the state board of higher education did not make a lot of sense unless we are going to expand the amount of dollars in that fund. There is no bill that I am aware of or any indication that that was going to happen. I move Do Not Pass on SB 2116.

Senator Oban: Second.

Chairman Schaible: The fund was set up for political entities for water projects, curb and gutter and so forth. If there is a separate fund for this, it should be separate from the current fund.

Senator Oban: Another point is the institutions aren't nearly as accountable as an elected political subdivision – county commissioners or city commissioners is applying in that way. How do taxpayers have any accountability when the Board of Higher Ed is appointed by the governor.

Senator Elkin: The fund currently has no available funds. It is not able to meet the needs of the political subdivisions and then throw in the institutions.

Chairman Schaible: There is a motion and second on SB 2116.

7 Yeas; 0 Nays; 0 Absent.

Motion Carries.

Senator Fors will carry the bill.

Date: 1-22-19
Roll Call Vote #: 1

**2019 SENATE STANDING COMMITTEE
ROLL CALL VOTES**
BILL/RESOLUTION NO. SR2116

Senate Education Committee

Subcommittee

Amendment LC# or Description: _____

- Recommendation: Adopt Amendment
 Do Pass Do Not Pass Without Committee Recommendation
 As Amended Rerefer to Appropriations
 Place on Consent Calendar
- Other Actions: Reconsider _____

Motion Made By Davison Seconded By Oban

Senators	Yes	No	Senators	Yes	No
Chairman Schaible:	✓		Senator Marcellais:	✓	
Vice-Chairman Fors:	✓		Senator Oban:	✓	
Senator Davison	✓				
Senator Elkin:	✓				
Senator Rust:	✓				

Total (Yes) 7 No 0

Absent 0

Floor Assignment Sen. Fors

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

SB 2116: Education Committee (Sen. Schaible, Chairman) recommends **DO NOT PASS** (7 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). SB 2116 was placed on the Eleventh order on the calendar.

2019 TESTIMONY

SB 2116

Senate Bill 2116

Senate Education Committee

January 9, 2019

Tammy Dolan, Vice Chancellor for Administrative Affairs

701.328.4116 | tammy.dolan@ndus.edu

Chair Schaible and Committee Members: My name is Tammy Dolan and I am here today to testify in support of **Senate Bill 2116**. The bill would allow the 11 state colleges and universities to apply for essential infrastructure loans from Infrastructure Revolving Loan Fund (IRLF) administered by the Bank of North Dakota (BND). Currently, only political subdivisions may apply for these loans.

ND colleges and universities have essential infrastructure capital needs that are similar to political subdivisions. Examples include sewer and water lines, storm water infrastructure, transportation infrastructure, as well as curb and gutter. These types of projects cannot be financed through revenue bonds, and as such, typically require a state general fund appropriation, which may not be available.

Establishing a practical means of low-cost financing, like the IRLF, would greatly enhance the cost effectiveness of infrastructure repairs and would allow institutions to undertake repairs which would otherwise not be possible due to a lack of funding mechanisms.

Infrastructure repair needs vary by campus. Currently, only UND has approached the State Board of Higher Education regarding utilizing this type of funding mechanism. Jed Shivers, UND's Vice President for Finance/Chief Operating Officer and Mike Pieper, UND's Associate Vice President for Facilities, are here to explain further the reason for their request.

I respectfully request a **Do Pass on SB2116** and am available to answer your questions.

Thank you.

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Education Committee

January 7, 2019

Jed M. Shivers, VP Finance and COO University of North Dakota
Michael C. Pieper, Associate VP Facilities University of North Dakota

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(701) 777-6862 | michael.pieper@und.edu

Chair Schaible and Committee Members: Our names are Jed M Shivers and Michael C. Pieper and we are the VP Finance and COO UND and the Associate VP for Facilities at UND respectively. We are here today in support of and to provide information on SB2116. The bill would enable UND and its sister institutions of higher education to access the Infrastructure Revolving Loan Fund for specific infrastructure projects related to water mains, water and sewer lines, and the curbs and gutters that cover them.

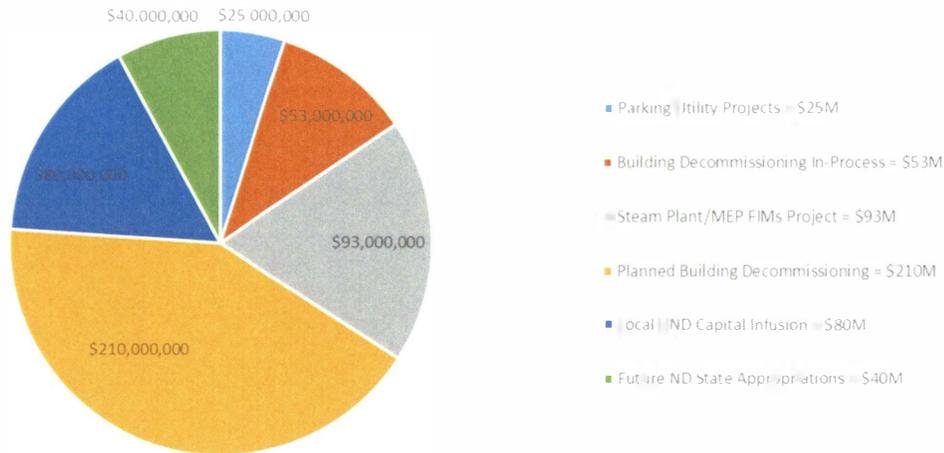
The University of North Dakota (UND) has over \$500 million in deferred maintenance. UND believes this level of deferred maintenance is detrimental to both the good order and operation of its campus and is a deterrent to recruit students. This has been a long term problem. UND has been addressing this problem in the following ways:

1. In accordance with legislative directives, reducing its campus square footage by demolishing buildings;
2. Rebuilding campus infrastructure by engaging in Public Private Partnerships (P-3) e.g., the construction of a new steam plant and associated systems in a \$93 million dollar bond issue in conjunction with Johnson Controls, Inc.;
3. Seeking innovative ways of obtaining capital in addition to State appropriations. The proposed bill is a key example of generating capital through the Infrastructure Revolving Loan Fund.
4. Fund raising from private donors for capital campaigns; and,
5. Requesting capital appropriations from the Legislative Assembly.

The pie chart below shows the comprehensive plan by method and estimated amount to reduce deferred maintenance.

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UND Capital Renewal Needs is \$816M. This Plan will Eliminate \$561M of Capital Renewal Needs



Universities, similar to political subdivisions, own and control miles of sewer and water pipes, water mains, and the roads that are paved on top of them. UND seeks to utilize capital from the Revolving Fund at a level similar to the larger North Dakota cities (i.e. \$15 million) in order to reduce the deferred maintenance associated with these systems. These are projects where private donations and P-3 partnerships are rare. Funding from State appropriations for these purposes is also atypical.

UND has an inventory of projects which exceeds the \$15 million level (see attachment 1 "Infrastructure FCNI Report.pdf). We also have provided a map and pictorial evidence to show how the private roadways, gutters and curbs which are paved over the water and sewer infrastructure has also deteriorated (see attachment 2 Infrastructure Revolving Loan Program Data and Notes.docx). Accessing this fund will enable us to do work consistent with the projects described in the Infrastructure Revolving Loan Fund if access is granted to the State Board of Higher Education institutions.

Successful completion of these projects will provide for improved operations and fit and finish as it relates to the UND campus. UND can defray the principal and interest payment of the loan as an ongoing operating expense which it allocates to the revenue generating portions of the University through its Resource Allocation Budget Methodology.

We respectfully request a **Do Pass on SB2116** and are available to answer your questions. Thank you.

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FACILITIES RENEWAL FCNI COMPARISON

ASSET CODE	ASSET NAME	USE	YR. BLT.	GSF	CRV	NONREC. COST	DEFERRED RENEWAL	REC. COMP. COST	10-YR. TOT. NEEDS	FCNI	FCI
CHWD	COOLING DISTRIBUTION	OTH	1999	1	30,987	\$0	\$0	\$0	\$0	0.00	0.00
CRDS	CONDENSATE RETURN DISTRIBUTION SYSTEM	OTH	1999	1	26,701,651	\$0	\$21,304,456	\$2,283,656	\$23,588,112	0.88	0.80
DWFP	DOMESTIC WATER AND FIRE PROTECTION SYS	OTH	1907	1	12,413,392	\$0	\$4,284,485	\$1,735,640	\$6,020,124	0.48	0.35
ELED	ELECTRICAL DISTRIBUTION	OTH	1935	1	73,610,527	\$183,190	\$4,578,593	\$11,257,961	\$16,019,744	0.22	0.06
HPLS	HEAT PUMP LOOP	OTH	1990	1	196,577	\$7,547	\$0	\$188,118	\$195,665	1.00	0.00
HTGD	STEAM DISTRIBUTION	OTH	1999	1	53,974,190	\$352,322	\$0	\$0	\$352,322	0.01	0.00
MH1-01	STEAM MANHOLE 1-1	OTH	1999	150	40,758	\$10,502	\$8,594	\$9,476	\$28,572	0.70	0.21
MH1-02	STEAM MANHOLE 1-2	OTH	1999	150	40,758	\$16,053	\$7,617	\$7,389	\$31,059	0.76	0.19
MH1-03	STEAM MANHOLE 1-3	OTH	1999	150	40,758	\$8,837	\$6,639	\$7,389	\$22,865	0.56	0.16
MH1-04	STEAM MANHOLE 1-4	OTH	1999	150	40,758	\$15,535	\$6,052	\$7,389	\$28,975	0.71	0.15
MH1-05	STEAM MANHOLE 1-5	OTH	1999	150	40,758	\$17,317	\$9,895	\$7,389	\$34,601	0.85	0.24
MH1-06	STEAM MANHOLE 1-6	OTH	1999	150	51,240	\$7,644	\$12,436	\$7,389	\$27,469	0.54	0.24
MH1-07	STEAM MANHOLE 1-7	OTH	1999	250	47,094	\$26,613	\$5,074	\$14,715	\$46,402	0.99	0.11
MH1-08	STEAM MANHOLE 1-8	OTH	1999	150	40,758	\$21,279	\$7,617	\$1,129	\$30,024	0.74	0.19
MH1-09	STEAM MANHOLE 1-9	OTH	1999	150	40,758	\$29,795	\$6,639	\$6,669	\$43,104	1.06	0.16
MH1-10	STEAM MANHOLE 1-10	OTH	1999	150	40,758	\$29,795	\$6,639	\$7,389	\$43,824	1.08	0.16
MH1-11	STEAM MANHOLE 1-11	OTH	1999	150	40,758	\$29,795	\$8,594	\$7,389	\$45,778	1.12	0.21
MH1-12	STEAM MANHOLE 1-12	OTH	1999	150	40,758	\$29,795	\$7,617	\$6,669	\$44,081	1.08	0.19
MH1-13	STEAM MANHOLE 1-13	OTH	1999	150	40,758	\$11,351	\$6,052	\$7,389	\$24,792	0.61	0.15
MH1-14	STEAM MANHOLE 1-14	OTH	1999	150	43,611	\$6,631	\$13,024	\$1,129	\$20,784	0.48	0.30
MH1-15	STEAM MANHOLE 1-15	OTH	1999	150	40,758	\$7,644	\$5,662	\$6,905	\$20,212	0.50	0.14
MH1-16	STEAM MANHOLE 1-16	OTH	1999	150	40,758	\$8,164	\$6,639	\$1,129	\$15,933	0.39	0.16
MH1-17	STEAM MANHOLE 1-17	OTH	1999	150	40,758	\$0	\$5,662	\$7,389	\$13,051	0.32	0.14
MH1-18	STEAM MANHOLE 1-18	OTH	1999	150	40,758	\$10,637	\$7,617	\$7,389	\$25,643	0.63	0.19

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FACILITIES RENEWAL FCNI COMPARISON

ASSET CODE	ASSET NAME	USE	YR. BLT.	GSF	CRV	NONREC. COST	DEFERRED RENEWAL	REC. CO P. COST	10-YR. TOT. NEEDS	FCNI	FCI
MH1-20	STEAM MANHOLE 1-20	OTH	1999	150	40,758	\$10,541	\$6,639	\$7,389	\$24,569	0.60	0.16
MH2-01	STEAM MANHOLE 2-1	OTH	2000	150	45,974	\$13,463	\$11,526	\$7,389	\$32,378	0.70	0.25
MH2-02	STEAM MANHOLE 2-2	OTH	2000	150	40,758	\$12,765	\$8,594	\$1,129	\$22,488	0.55	0.21
MH2-03	STEAM MANHOLE 2-3	OTH	2000	150	40,758	\$12,129	\$5,662	\$7,389	\$25,180	0.62	0.14
MH2-04	STEAM MANHOLE 2-4	OTH	2000	150	43,490	\$10,024	\$13,315	\$7,389	\$30,728	0.71	0.31
MH2-05	STEAM MANHOLE 2-5	OTH	2000	150	43,596	\$4,166	\$7,617	\$1,129	\$12,912	0.30	0.17
MH2-06	STEAM MANHOLE 2-6	OTH	2000	150	40,758	\$23,447	\$9,571	\$10,156	\$43,173	1.06	0.23
MH2-07	STEAM MANHOLE 2-7	OTH	2000	150	40,758	\$9,266	\$5,662	\$7,389	\$22,317	0.55	0.14
MH2-08	STEAM MANHOLE 2-8	OTH	2000	150	40,758	\$9,340	\$6,639	\$7,389	\$23,368	0.57	0.16
MH2-09	STEAM MANHOLE 2-9	OTH	2000	150	49,144	\$5,914	\$15,812	\$13,998	\$35,725	0.73	0.32
MH2-10	STEAM MANHOLE 2-10	OTH	2000	150	40,758	\$29,795	\$7,617	\$7,389	\$44,801	1.10	0.19
MH2-11	STEAM MANHOLE 2-11	OTH	2000	150	40,758	\$16,263	\$8,594	\$1,129	\$25,986	0.64	0.21
MH2-13	STEAM MANHOLE 2-13	OTH	2000	150	40,758	\$6,241	\$2,932	\$7,389	\$16,561	0.41	0.07
MH2-14	STEAM MANHOLE 2-14	OTH	2000	150	40,758	\$2,353	\$6,639	\$7,389	\$16,382	0.40	0.16
MH2-15	STEAM MANHOLE 2-15	OTH	2000	150	40,758	\$24,143	\$7,617	\$7,389	\$39,149	0.96	0.19
MH2-16	STEAM MANHOLE 2-16	OTH	2000	150	49,144	\$5,210	\$10,549	\$9,124	\$24,883	0.51	0.21
MH2-17	STEAM MANHOLE 2-17	OTH	2000	150	40,758	\$8,179	\$11,714	\$7,389	\$27,282	0.67	0.29
MH2-18	STEAM MANHOLE 2-18	OTH	2000	150	40,758	\$6,241	\$11,526	\$7,389	\$25,155	0.62	0.28
MH2-19	STEAM MANHOLE 2-19	OTH	2000	150	40,758	\$6,684	\$6,639	\$7,389	\$20,712	0.51	0.16
MH2-20	STEAM MANHOLE 2-20	OTH	2000	150	40,758	\$7,644	\$5,662	\$7,389	\$20,696	0.51	0.14
MH2-21	STEAM MANHOLE 2-21	OTH	2000	150	40,758	\$7,644	\$5,662	\$7,389	\$20,696	0.51	0.14
MH2-22	STEAM MANHOLE 2-22	OTH	2000	150	40,758	\$9,487	\$5,662	\$6,905	\$22,054	0.54	0.14
MH2-23	STEAM MANHOLE 2-23	OTH	2000	150	40,758	\$9,930	\$8,594	\$7,389	\$25,913	0.64	0.21
MH2-24	STEAM MANHOLE 2-24	OTH	2000	150	40,758	\$15,803	\$5,662	\$7,389	\$28,854	0.71	0.14

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FACILITIES RENEWAL FCNI COMPARISON

ASSET CODE	ASSET NAME	USE	YR. BLT.	GSF	CRV	NONREC. COST	DEFERRED RENEWAL	REC. COMP. COST	10-YR. TOT. NEEDS	FCNI	FCI
MH2-25	STEAM MANHOLE 2-25	OTH	2000	150	40,758	\$11,220	\$5,662	\$0	\$16,882	0.41	0.14
MH2-26	STEAM MANHOLE 2-26	OTH	1990	150	40,758	\$0	\$0	\$7,389	\$7,389	0.18	0.00
MH3-01	STEAM MANHOLE 3-1	OTH	2005	150	40,758	\$8,526	\$11,722	\$1,129	\$21,378	0.52	0.29
MH4-01	STEAM MANHOLE 4-1	OTH	2008	150	40,758	\$7,644	\$0	\$7,792	\$15,437	0.38	0.00
MH5-01	STEAM MANHOLE 5-1	OTH	2008	150	44,362	\$1,778	\$977	\$7,792	\$10,548	0.24	0.02
MH5-02	STEAM MANHOLE 5-2	OTH	2008	150	44,362	\$1,778	\$977	\$10,828	\$13,583	0.31	0.02
MH5-03	STEAM MANHOLE 5-3	OTH	2008	150	44,362	\$6,092	\$977	\$9,584	\$16,653	0.38	0.02
NGDS	NATURAL GAS DISTRIBUTION SYSTEM	OTH	1935	1	15,325	\$0	\$0	\$0	\$0	0.00	0.00
SANI	SANITARY SEWER SYSTEM	OTH	1887	1	8,201,226	\$1,080,348	\$1,192,338	\$938,489	\$3,211,175	0.39	0.15
STRM	STORMWATER SEWER	OTH	1903	1	13,189,100	\$1,825,535	\$466,728	\$220,012	\$2,512,274	0.19	0.04
GRAND TOTALS:				7,459	\$190,388,154	\$4,040,045	\$32,181,093	\$16,959,277	\$53,180,415	0.28	0.17

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UND Non-Building Infrastructure

With the understanding that not all non-building infrastructure capital-renewal projects are eligible for the revolving loan program today, below is a summary of UND's non-building infrastructure.

Transportation Infrastructure

In 2012 CPS, Ltd. prepared a parking lot and roadway inspection and survey report. The following information was extracted from that report.

- Data collected by CPS in 2012 was used to create a pavement management system with enhanced capabilities to model future pavement degradation; facilitating the ability to prioritize maintenance and rehabilitation (M&R) projects for various planning scenarios. UND can implement this system to analyze how future budget spending levels and various maintenance and rehabilitation projects would affect the overall condition of the pavement network. These capabilities are the most significant benefits of the pavement management system because they allow UND to determine the most cost-effective strategies for maintaining its vast pavement network.

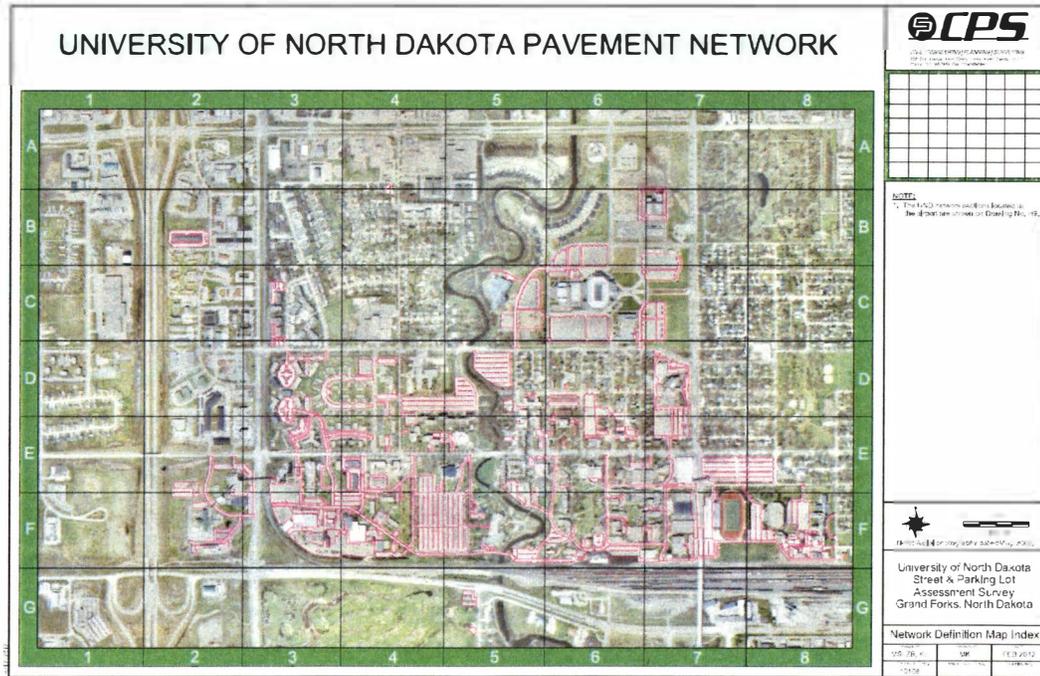


Table 3.01.A: UND Pavement Uses

Branch Use	Pavement Area (ft ²)	% of Total Pavement Area
Parking Lot	4,364,997	84
Roadway	816,990	16
Total	5,181,988	100

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Table 3.03.A: UND Pavement Age

Age at Inspection	Pavement Area (ft ²)	% of Total Pavement Area
0-2	93,968	2
3-5	163,070	3
6-10	1,514,230	29
11-15	243,936	5
16-20	183,592	4
21-25	689,402	13
26-30	205,164	4
31-35	265,240	5
36-40	606,763	12
41-50	753,809	15
Over 50	462,814	9
Total	5,181,988	100

The UND's network is comprised of 216 pavement sections. When all of the sections are considered, the area-weighted PCI of the UND network is 55 (in the "Poor" category). Table 4.02A below illustrates the percent of the network currently in each condition level.

Table 4.02.A: Percent of UND Network in Each Pavement Condition Category

Area-Weighted Average PCI	Pavement Condition Category	Pavement Area (ft ²)	% of Total Pavement Area
86-100	Good	641,155	12
71-85	Satisfactory	1,331,632	26
56-70	Fair	1,123,761	22
41-55	Poor	379,780	7
26-40	Very poor	866,045	17
11-25	Serious	515,436	10
0-10	Failed	324,178	6
Total		5,181,988	100

Table 5.02.A: Typical Repair Strategies

Pavement Condition Index (PCI)	Pavement Condition Category	Typical Repair Strategy
86 - 100	Good	Preventive Maintenance
71 - 85	Satisfactory	
56 - 70	Fair	Major Rehabilitation
41 - 55	Poor	
26 - 40	Very poor	Reconstruction
11 - 25	Serious	
0 - 10	Failed	

Scenario 1: Budget to Increase PCI to 71 ("Satisfactory") by 2016 and Maintain PCI of 71 ("Satisfactory") through 2021,

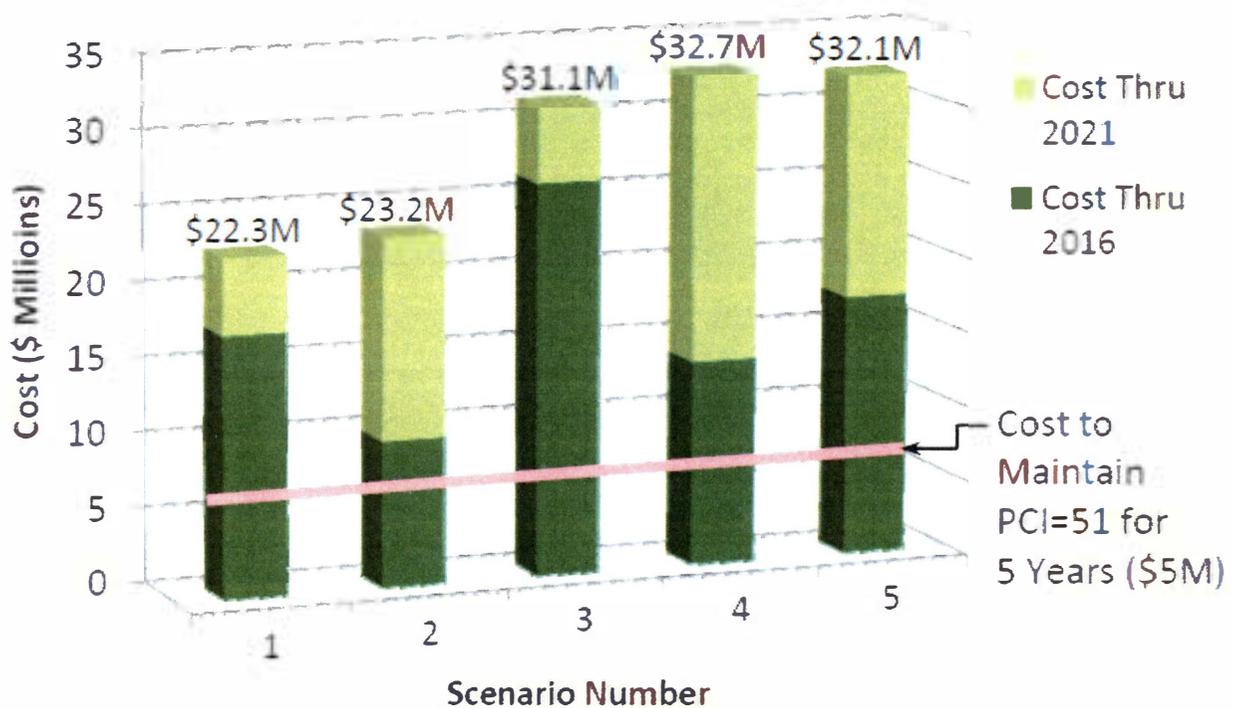
Scenario 2: Budget to Increase PCI to 71 ("Satisfactory") by 2021,

Scenario 3: Budget to Increase PCI to 85 ("Good") by 2016 and Maintain PCI of 85 ("Good") through 2021,

Scenario 4: Budget to Increase PCI to 85 ("Good") by 2021,

Scenario 5: Budget to Increase PCI to 71 ("Satisfactory") by 2016, then Increase PCI to 85 ("Good") by 2021.

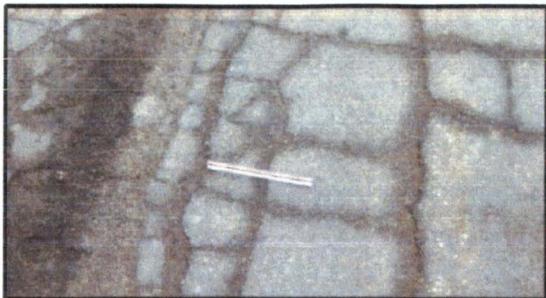
Figure 5.05.B: Pavement Funding Projection Scenario Costs



***These costs pertain to pavement improvements, and do not include associated utility costs (e.g. storm water). Plus, UND as added costs due to life-safety upgrades (e.g. lighting, security cameras).**

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Alligator Cracking



Bleeding



Block Cracking



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Bumps and Saags



Depression

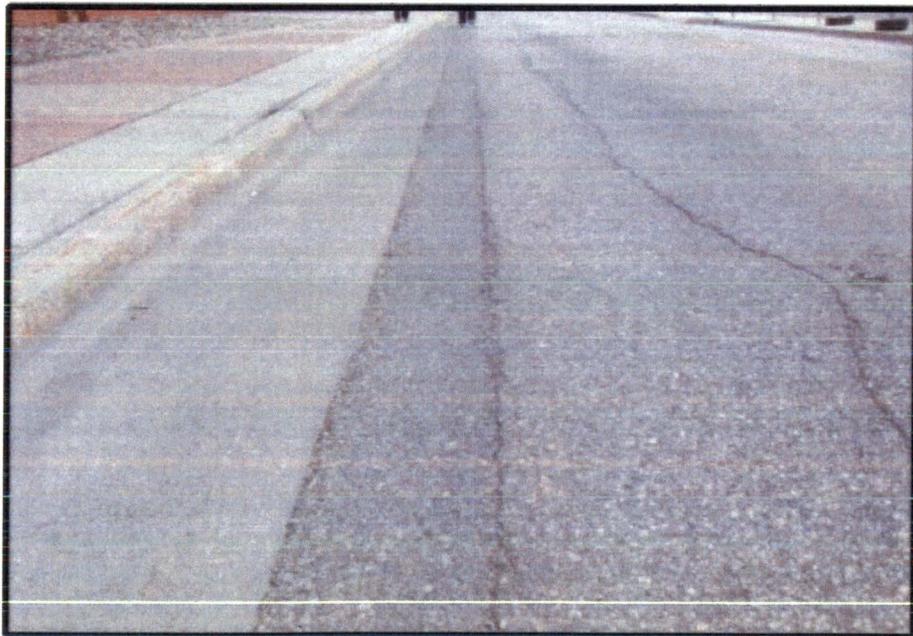


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Swell



Edge Cracking



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Joint Reflective Cracking



Weathering and Raveling



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Longitudinal and Transverse Cracking



Corner Break



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Asphalt Concrete Patching



Divided Slab



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Potholes



Durability Cracking



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Rutting



Faulting

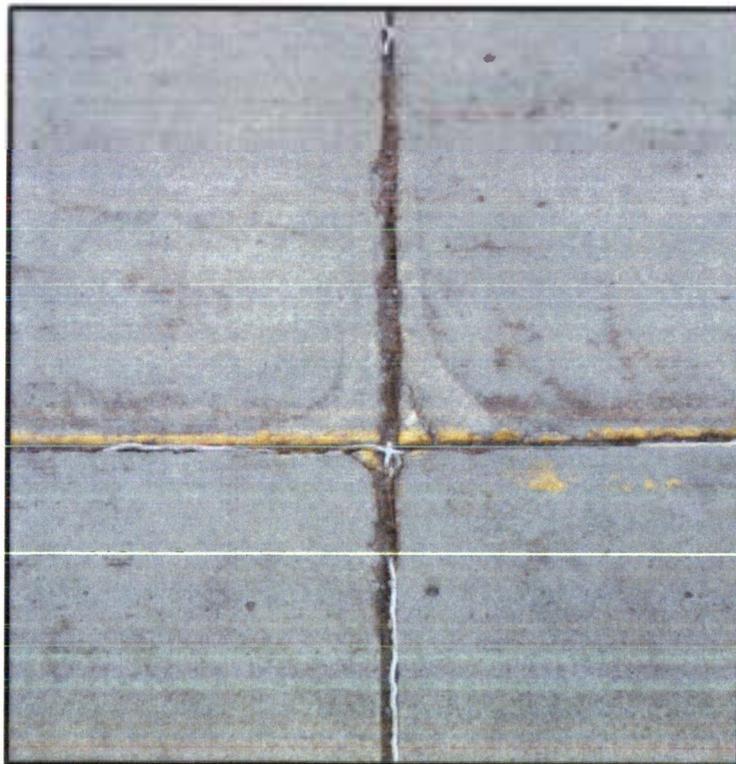


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Shoving



Joint Seal Damage



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Linear Cracking



PCC Patching



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Polished Aggregate



Popouts

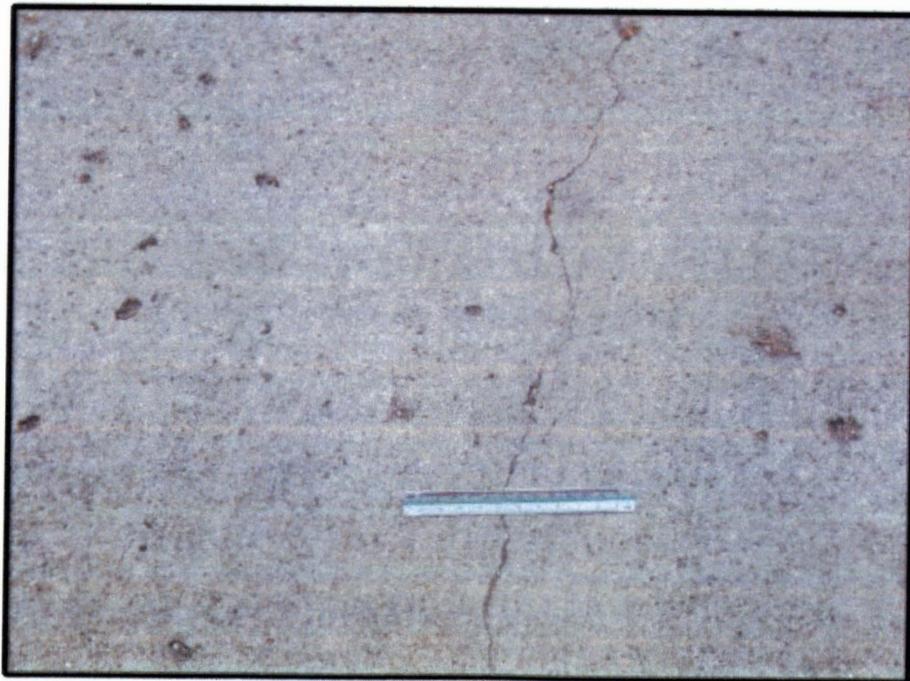


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Scaling



Shrinkage Cracks



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Joint Spalling



Corner Spalling



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Non-Transportation Infrastructure

In 2018 ISES Corporation prepared an all campus non-building infrastructure report quantifying UND's assets and related distribution capital renewal needs. The following information was extracted from that report.

FACILITIES RENEWAL FCNI COMPARISON

ASSET CODE	ASSET NAME	USE	YR. BLT.	GSF	CRV	NONREC. COST	DEFERRED RENEWAL	REC. COMP. COST	10-YR. TOT. NEEDS	FCMI	FOI
CHWD	COOLING DISTRIBUTION	OTH	1999	1	30,987	50	50	50	50	0.00	0.00
CRDS	CONDENSATE RETURN DISTRIBUTION SYSTEM	OTH	1999	1	26,701,651	50	521,304,456	52,283,656	\$23,588,112	0.88	0.90
DWFP	DOMESTIC WATER AND FIRE PROTECTION SYS	OTH	1907	1	12,413,392	50	54,284,485	51,795,540	\$6,020,124	0.48	0.35
ELED	ELECTRICAL DISTRIBUTION	OTH	1935	1	73,610,517	5183,190	54,579,593	511,257,961	\$16,019,744	0.22	0.06
HPLS	HEAT PUMP LOOP	OTH	1990	1	196,577	57,547	50	5188,118	\$195,665	1.00	0.00
HTGD	STEAM DISTRIBUTION	OTH	1999	1	53,974,190	3952,322	50	50	\$352,322	0.01	0.00
MH1-01	STEAM MANHOLE 1-1	OTH	1999	150	40,758	510,502	58,594	59,476	\$28,572	0.70	0.21
MH1-02	STEAM MANHOLE 1-2	OTH	1999	150	40,758	516,053	57,617	57,389	\$31,059	0.76	0.19
MH1-03	STEAM MANHOLE 1-3	OTH	1999	150	40,758	58,837	56,639	57,389	\$22,865	0.56	0.16
MH1-04	STEAM MANHOLE 1-4	OTH	1999	150	40,758	515,535	56,052	57,389	\$28,375	0.71	0.15
MH1-05	STEAM MANHOLE 1-5	OTH	1999	150	40,758	517,317	59,895	57,389	\$34,601	0.85	0.24
MH1-06	STEAM MANHOLE 1-6	OTH	1999	150	51,240	57,644	512,456	57,389	\$27,469	0.54	0.14
MH1-07	STEAM MANHOLE 1-7	OTH	1999	150	47,094	526,613	59,074	514,715	\$46,402	0.99	0.11
MH1-08	STEAM MANHOLE 1-8	OTH	1999	150	40,758	521,279	57,617	51,129	\$30,024	0.74	0.19
MH1-09	STEAM MANHOLE 1-9	OTH	1999	150	40,758	529,795	56,639	56,569	\$43,104	1.06	0.16
MH1-10	STEAM MANHOLE 1-10	OTH	1999	150	40,758	529,795	56,639	57,389	\$43,824	1.08	0.16
MH1-11	STEAM MANHOLE 1-11	OTH	1999	150	40,758	529,795	58,594	57,389	\$45,778	1.12	0.21
MH1-12	STEAM MANHOLE 1-12	OTH	1999	150	40,758	529,795	57,617	56,669	\$44,081	1.08	0.19
MH1-13	STEAM MANHOLE 1-13	OTH	1999	150	40,758	511,351	56,052	57,389	\$24,792	0.61	0.15
MH1-14	STEAM MANHOLE 1-14	OTH	1999	150	43,611	56,632	513,024	51,129	\$20,784	0.48	0.30
MH1-15	STEAM MANHOLE 1-15	OTH	1999	150	40,758	57,644	55,962	56,905	\$20,212	0.50	0.14
MH1-16	STEAM MANHOLE 1-16	OTH	1999	150	40,758	56,164	56,639	511,257	\$15,933	0.39	0.16
MH1-17	STEAM MANHOLE 1-17	OTH	1999	150	40,758	50	55,962	57,389	\$13,051	0.32	0.14
MH1-18	STEAM MANHOLE 1-18	OTH	1999	150	40,758	513,697	57,617	57,389	\$25,643	0.63	0.19

ASSET CODE	ASSET NAME	USE	YR. BLT.	GSF	CRV	NONREC. COST	DEFERRED RENEWAL	REC. COMP. COST	10-YR. TOT. NEEDS	FCMI	FOI
MH1-20	STEAM MANHOLE 1-20	OTH	1999	150	40,758	510,541	56,639	57,389	\$24,569	0.60	0.16
MH2-01	STEAM MANHOLE 2-1	OTH	2000	150	45,974	513,463	511,526	57,389	\$32,378	0.70	0.25
MH2-02	STEAM MANHOLE 2-2	OTH	2000	150	40,758	511,765	58,594	51,129	\$22,086	0.55	0.18
MH2-03	STEAM MANHOLE 2-3	OTH	2000	150	40,758	512,129	55,962	57,389	\$25,180	0.62	0.14
MH2-04	STEAM MANHOLE 2-4	OTH	2000	150	43,480	513,024	513,315	57,389	\$30,728	0.71	0.31
MH2-05	STEAM MANHOLE 2-5	OTH	2000	150	43,596	54,196	57,617	51,129	\$12,912	0.30	0.17
MH2-06	STEAM MANHOLE 2-6	OTH	2000	150	40,758	529,447	59,571	510,156	\$48,173	1.06	0.15
MH2-07	STEAM MANHOLE 2-7	OTH	2000	150	40,758	59,266	55,962	57,389	\$23,317	0.55	0.14
MH2-08	STEAM MANHOLE 2-8	OTH	2000	150	40,758	59,340	56,639	57,389	\$23,368	0.57	0.16
MH2-09	STEAM MANHOLE 2-9	OTH	2000	150	49,144	55,914	515,311	513,998	\$35,725	0.73	0.32
MH2-10	STEAM MANHOLE 2-10	OTH	2000	150	40,758	529,795	57,617	57,389	\$44,801	1.10	0.19
MH2-11	STEAM MANHOLE 2-11	OTH	2000	150	40,758	516,263	58,594	51,129	\$25,986	0.64	0.21
MH2-13	STEAM MANHOLE 2-13	OTH	2000	150	40,758	56,241	52,932	57,389	\$16,561	0.41	0.07
MH2-14	STEAM MANHOLE 2-14	OTH	2000	150	40,758	52,353	56,639	57,389	\$16,382	0.40	0.16
MH2-15	STEAM MANHOLE 2-15	OTH	2000	150	40,758	524,143	57,617	57,389	\$39,149	0.96	0.13
MH2-16	STEAM MANHOLE 2-16	OTH	2000	150	49,144	59,210	510,549	59,114	\$18,888	0.51	0.21
MH2-17	STEAM MANHOLE 2-17	OTH	2000	150	40,758	58,179	511,714	57,389	\$27,282	0.67	0.28
MH2-18	STEAM MANHOLE 2-18	OTH	2000	150	40,758	56,241	511,526	57,389	\$25,155	0.62	0.28
MH2-19	STEAM MANHOLE 2-19	OTH	2000	150	40,758	56,684	56,639	57,389	\$20,712	0.51	0.16
MH2-20	STEAM MANHOLE 2-20	OTH	2000	150	40,758	57,644	55,962	57,389	\$20,696	0.51	0.14
MH2-21	STEAM MANHOLE 2-21	OTH	2000	150	40,758	57,644	55,962	57,389	\$20,696	0.51	0.14
MH2-22	STEAM MANHOLE 2-22	OTH	2000	150	40,758	59,487	55,962	56,905	\$22,054	0.54	0.14
MH2-23	STEAM MANHOLE 2-23	OTH	2000	150	40,758	59,930	58,594	57,389	\$25,913	0.64	0.21
MH2-24	STEAM MANHOLE 2-24	OTH	2000	150	40,758	515,803	55,962	57,389	\$28,854	0.71	0.24

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ASSET CODE	ASSET NAME	USE	YR. BLT.	GSF	CRV	NONREC. COST	DEFERRED RENEWAL	REC. COMP. COST	10-YR. TOT. NEEDS	FCM	FCI
MH2-05	STEAM MANHOLE 2-05	OTH	2000	150	40,758	\$11,220	\$5,662	50	\$16,882	0.41	0.14
MH2-06	STEAM MANHOLE 2-06	OTH		150	40,758	50	50	\$7,389	\$7,389	0.18	0.00
MH3-01	STEAM MANHOLE 3-1	OTH	2005	150	40,758	\$8,526	\$11,721	\$1,129	\$21,378	0.52	0.19
MH4-01	STEAM MANHOLE 4-1	OTH	2008	150	40,758	\$7,644	50	\$7,792	\$15,437	0.38	0.00
MH5-01	STEAM MANHOLE 5-1	OTH	2008	150	44,362	\$1,778	\$977	\$7,792	\$10,548	0.24	0.02
MH5-02	STEAM MANHOLE 5-2	OTH	2008	150	44,362	\$1,778	\$977	\$10,528	\$13,583	0.31	0.02
MH5-03	STEAM MANHOLE 5-3	OTH	2008	150	44,362	\$6,092	\$977	\$9,584	\$16,653	0.38	0.02
NGDS	NATURAL GAS DISTRIBUTION SYSTEM	OTH	1935		5,525	50	50	50	50	0.00	0.00
SANI	SANITARY SEWER SYSTEM	OTH	1887		8,001,235	\$1,080,348	\$1,192,338	\$935,489	\$3,211,175	0.39	0.15
STRM	STORMWATER SEWER	OTH	1903	1	13,189,100	\$1,825,535	\$466,728	\$220,012	\$2,512,274	0.19	0.04
GRAND TOTALS:				7,459	\$190,388,154	\$4,040,045	\$32,181,093	\$16,959,277	\$53,180,415	0.28	0.17

- UND's Non-building Infrastructure: Heating/cooling lines, electrical distribution, utility vaults, natural gas distribution lines, sanitary sewer system, domestic water system and fire protection system and storm water sewer
 - 11 miles of water lines
 - 8 miles of domestic sewer lines
 - 14 miles of electrical distribution lines
- Current replacement value (CRV) = \$190.4M
 - OMB's estimated annual capital renewal (2.0% of CRV) = \$3.8M
- Deferred Capital Renewal as if FY2017 (DM) = \$32.2M
- Facility Condition Needs (10 year capital renewal projections + DM) = \$53.2M