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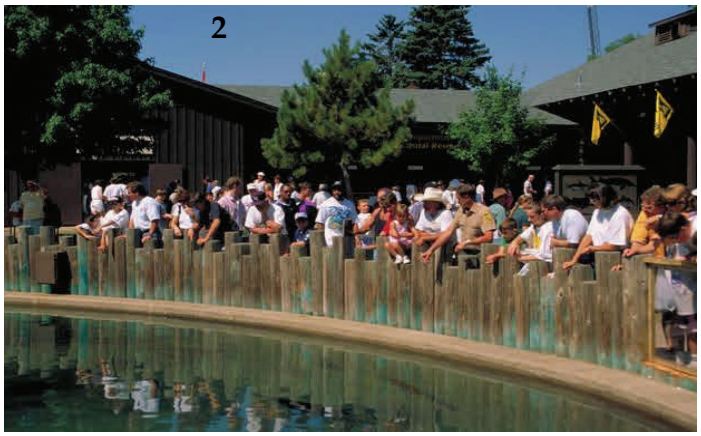
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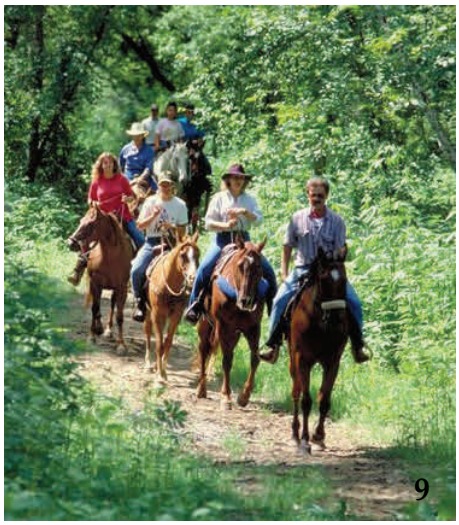
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Minnesota Department of Natural Resources

10.8.15

Ten-year Capital Asset Need: Taking Care of What We Have

Ten-year Capital Asset Need: Taking Care of What We Have

Key Message:

The Department of Natural Resources requires $144,776,643 annually over the next 10 years, from all funds, to maintain and renew the capital assets under their custodial control. Each year this amount is not invested into DNR's capital assets results in higher costs.

2015 DNR Capital Asset Facts

Current Replacement Value

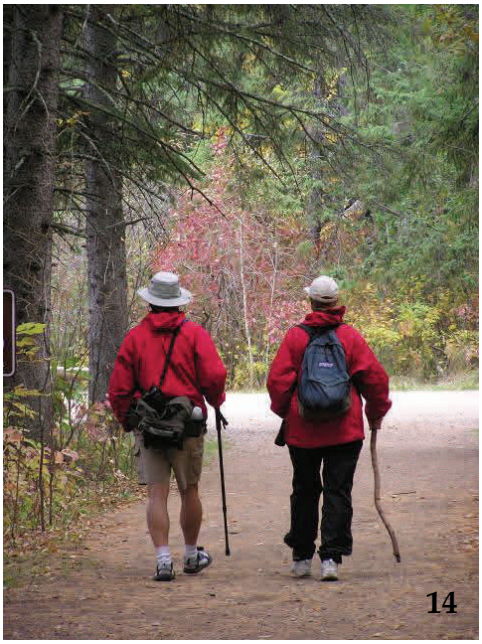
$2,757,215,482

Deferred Maintenance

$342,161,507

Goal:

Bring all capital assets up to "average" or better condition within 10 years, while continually maintaining all assets.



Overview:

Minnesota families enjoy biking on our 675 miles of paved state trails, cooking s'mores over a campfire at one of our 5,000 campsites, laughing as a child catches her first fish on one of our 10,000 lakes, meeting friends in one of our visitor centers. Supporting these outdoor adventures and memories requires DNR to keep the trails and bridges, state parks, water access sites, buildings, and other assets maintained, safe, and accessible to all.

DNR capital assets are anything built on DNR land that has a minimum 20-year lifecycle. Historically, the department has lacked a comprehensive Capital Asset Plan and has been significantly underfunded in this area.

This document presents a Capital Asset Need that supports the DNR mission by providing recreation and economic opportunities and bringing all DNR capital assets up to average or better condition within 10 years. The intent is for all capital assets to be safe, accessible, support employee productivity, and model the way in environmental sustainability and energy use.

Total Cost of Ownership

Total Cost of Ownership (TCO) is an industry standard terminology based on acquiring, operating, maintaining and divesting of a capital asset. It takes into account the full cost of the lifecycle of an asset. The specific activities and goals involved differ among different kinds of assets. Generally, life cycle management makes use of best practice methods in order to reach these objectives:

- Ensure their availability where and when needed.
- Minimize the risk of failure or breakdown before the end of their useful life.
- Maximize the return from them.
- Ensure they are used productively throughout their useful life.
- Sell or otherwise divest of those that are idle or unproductive.
- Set priorities for their renewal and replacement and plan future expansion or reduction.

For purposes here, the focus will be on maintenance, renewal and replacement and deferred maintenance of DNR capital assets and does not include the costs of operations.

Asset Life Cycle:

Development	Operate and Maintain	Divest
• Plan	• Operation of Assets	• Sell
• Design	• Maintenance	• Demolish
• Construct	• Renewal and Replacement	
	• Deferred Maintenance	

Life Cycle Definitions

Operation of Assets—What it takes to "take care" or operate the asset on a daily basis and is covered by division appropriated funds. Janitorial, grounds, security, telecomm, water and sewer are some of the components. While this is a significant expense, these funds are not sufficient to do the maintenance, renewal and replacement, and deferred maintenance that is needed.

Maintenance – Predictive, Preventive & Reactive maintenance performed as scheduled have the objective of retaining or restoring the asset to optimal condition.

Renewal and Replacement – Costs required to restore and modernize when the asset has reached its lifecycle. Largely a function of obsolescence, change in use, or changes to codes and policies.

Deferred Maintenance – Costs accrued when Maintenance, Renewal and Replacement funds have not been sufficient to complete the necessary maintenance.

Deferred Maintenance catch up—Total of the deferred maintenance divided by 10 years. Cost noted is the annual need.

Where the DNR is today……

The Current Replacement Value (CRV) of DNR Capital Assets is about $3.0 Billion with a deferred maintenance backlog of $342,161,507. Historically, funding from all sources has not been adequate to manage and maintain DNR capital assets. Past spending for maintenance, renewal and replacement, over the last 8 fiscal years, has averaged $19.9 million annually, with an average of $9.3 million from bond funds. Bonding hasn't been adequate to minimally manage and maintain, so the DNR has used an additional $10.6 million annually in other funds. The current need in 2016 is about $453,000,000, consisting of the following one time (1x) and annual (A) costs:

Total Deferred Maintenance (1x) + Maintenance (A) + Renewal & Replacement (A) = 2016 Need

OR

$342,161,507 + $12,446,060 + $98,114,432 = $452,721,999

It is unlikely or feasible to utilize this amount of funding at one time. A realistic goal would be tackling the Total Deferred Maintenance over a 10 year period. This would be $34,216,151 every year for 10 years. This is called Deferred Maintenance catch up. Add this to the annual needs for Maintenance and Renewal & Replacement, the annual need would be $144,776,643.

Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment for all DNR Capital Assets			
		Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
$2,757,215,482	$342,161,507	$12,446,060	$98,114,432	$34,216,151	**$144,776,643**

The chart above shows the current replacement value (CRV), the total deferred maintenance and the needed annual investment of DNR Capital Assets. Maintenance, Renewal & Replacement and Deferred Maintenance components of the needed annual investment and are based on a percentage of the current replacement value (CRV) of the asset. The percentages are based on the type and the life cycle of the asset. A detailed list of capital assets, CRV, percentages for Maintenance, Renewal & Replacement and Deferred Maintenance activities and life cycles is provided in Appendix A.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Adequate funding for maintenance needs will result in lower future obligations for more costly renewal and replacement. Not maintaining facilities in a timely manner results in eroded capital values and higher maintenance costs to address a higher than necessary rate of facility deterioration and emergency work.


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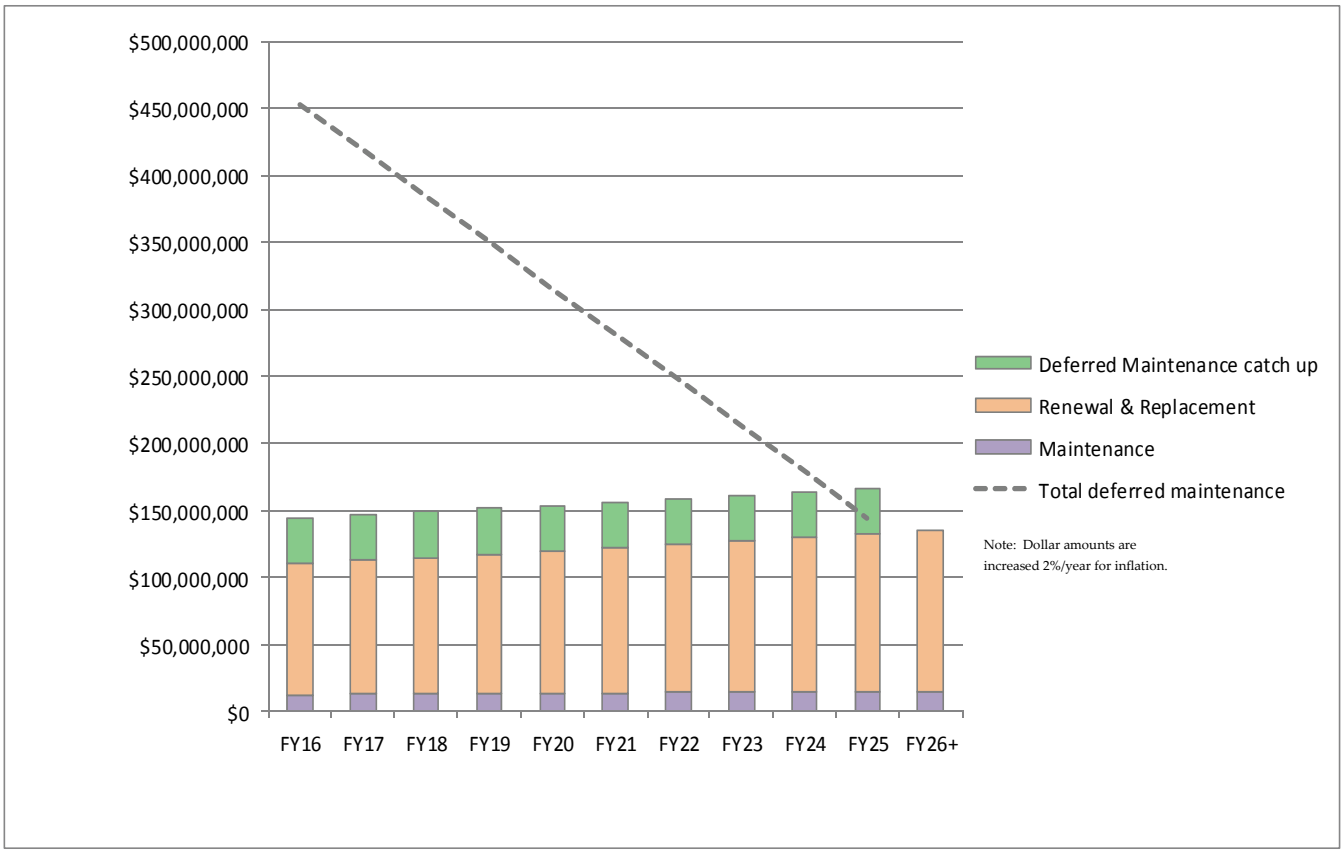
The chart below illustrates how an annual investment of $144,776,643 in each of the next ten years will:

- Eliminate the deferred maintenance backlog.
- At year 11, allow the agency to effectively address annual Maintenance and Renewal & Replacement costs.



Buildings and Miscellaneous Site Infrastructure

The DNR owns and manages over 2,700 buildings of various age, construction, use and lifecycle located statewide. The DNR recently finished Facility Condition Assessments (FCA) of all buildings using a statewide, enterprise methodology. All state agencies with custodial control of buildings are required to assess their buildings using this methodology. Each building assessment resulted in a Facility Condition Index (FCI). The FCI is calculated by the deferred maintenance divided by the current replacement value or *FCI = Deferred Maintenance / Current Replacement Value* . The assessment results are summarized in the chart below.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	FCI Rating					
		0 - 0.05	0.05 - 0.15	0.15 - 0.30	0.30 - 0.50	0.50 - above
	Total	Excellent	Good	Average	Poor	Unacceptable
Buildings Assessed	2,714	264	744	969	533	204
Gross Sq Ft	2,933,022	169,995	339,334	413,459	211,842	50,372
Current Replacement Value	664,375,202	95,866,423	219,174,347	211,180,420	109,637,971	28,516,042
Deferred Maintenance	130,771,259	3,015,473	23,020,840	48,462,314	38,465,150	17,807,482

Over 700 DNR buildings rated "Poor" or "Unacceptable" with a deferred maintenance backlog of $56,272,632. Of these, 59 are report-to-work buildings housing 208 staff.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
2,714 buildings + renewable energy systems & misc. site amenities	$705,275,202	$134,501,259	$4,400,039	$11,632,378	$13,450,126	**$29,482,543**

The FCI provided a component level view of each building. This allows grouping of like type needs to create like type projects. Below is a chart showing building envelope components. The DNR currently has over $12 million in building envelope component needs that are "poor" or "unacceptable".

Building Envelope	Excellent		Good		Average		Poor		Unacceptable	
Component	# of bldgs	Def Maint	# of bldgs	Def Maint	# of bldgs	Def Maint	# of bldgs	Def Maint	# of bldgs	Def Maint
Exterior Walls	292	$274,578	975	$3,066,950	952	$8,820,350	232	$5,880,342	23	$293,778
Exterior Windows	182	$49,884	243	$294,188	467	$1,079,840	237	$1,387,106	20	$84,590
Exterior Doors	309	$46,082	695	$402,937	1032	$1,789,673	282	$1,327,888	24	$111,070
Roof Covering	494	$123,915	711	$1,001,522	964	$2,518,300	310	$2,703,592	34	$501,920
Total		$494,459		$4,765,597		$14,208,163		$11,298,928		$991,358

Miscellaneous site infrastructure is often forgotten. This includes parking lots, sidewalks, renewables, utilities, etc. Annual maintenance and renewal needs are $2,387,100 for site infrastructure at 208 administrative site. This is about $12,000 per site per year.

Water and Sewer Systems

This is often a forgotten part of the infrastructure since it is out of sight. Many state parks and office buildings have water and sewer systems that are nearing or are past their useful life and need attention. We are conducting an analysis of the larger systems to determine highest need. The typical lifecycle for water and sewer systems is 40 years. Annually, the DNR requires $2,812,500 to replace an average of 112 water and/or sewer systems that have reached their life expectancy.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
4,500 systems	$112,500,000	$11,250,000	$675,000	$2,812,500	$1,125,000	**$4,612,500**


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This enclosure unit for some of the lift stations has been corroding away and if not replaced will begin to crack or break allowing excess moisture into the unit, possibly increasing corrosion.


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Heavy corrosion forming on existing galvanized steel piping. This piping was removed from an area where a water main had broken. This is an example of the condition of the aging galvanized steel in many of our parks.


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Roads and Bridges

The DNR has over 3,300 miles of roads with 176 bridges and over 5,000 culverts. Forestry, Parks and Trails, and Wildlife are the primary divisions with road responsibilities. Roads have a typical lifecycle of 25 years, while bridges average 50 years. Annually, the DNR requires $36,281,660 to replace an average of 85 miles (6 paved & 79 gravel) of roads and an average of 4 bridges that have reached their life expectancy.

Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
150 miles paved, 3,157 miles gravel, 176 bridges, 5,000+ culverts	$924,594,000	$92,459,400	$2,608,607	$36,281,660	$9,245,940	**$48,136,207**

Trails and Bridges

The DNR has 675 miles of paved trails and over 1,500 miles of unpaved trails. Over 100 miles of paved trails are in immediate need of rehabilitation. Rehab costs about $100,000 per mile. Trails should be resurfaced on a 25-year schedule. There are over 350 trail bridges and over 3,000 trail culverts. Many of these trails are old rail lines and the bridges are 100+ year old trestles. We have had to put weight restrictions on some bridges. Some crossings are very deep (Munger Trail culverts) and have cost up to $1,000,000 to replace.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
675 miles paved, 1,030 miles gravel, 350 bridges, 3,000+ culverts	$252,087,240	$25,208,724	$421,916	$10,943,047	$2,520,872	**$13,885,835**


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Public Water Accesses

The DNR manages and maintains over 2,800 public water accesses that are open 24 hours a day unless posted. Accesses need to be improved to better address Aquatic Invasive Species (AIS) and storm water management. The typical lifecycle for an asphalt access is 25 years while a gravel access is 15 years. Annually, the DNR requires $22,095,840 to replace an average of 179 public water accesses (22 asphalt @ $4,495,750 and 157 gravel @ $17,600,000) that have reached their life expectancy.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
556 Paved, 2,366 Gravel	$376,385,000	$37,638,500	$2,396,328	$22,104,425	$3,763,850	**$28,264,603**


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Small Craft Harbors, Marinas and Protected Accesses

Small craft harbors, protected accesses and marinas provide safe access to and use of Lake Superior and other large lakes by recreational water craft and small commercial vessels to escape rough lake conditions. Private marinas are very rare along the North Shore due to high development costs, relatively short boating season, moderate area incomes and the need for other nearby safe harbors to enhance safety.

Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
10 sites	$47,024,000	$4,702,400	$305,656	$1,880,960	$470,240	**$2,656,856**

Campsites, Group Camps, Recreation Areas and Day Use Areas

The DNR has over 5,000 campsites at State Parks and Forest Recreation Areas, as well as 112 Group Camps and 95 Day Use Areas. Many are more than 50 years old and are in need of major renovation to meet the changing recreational needs of the public and accessibility code upgrades. The typical lifecycle for a campsite is 25 years. Annually, the DNR requires $8,961,200 to replace an average of 201 campsites that have reached their life expectancy.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
4,000 Park campsites, 112 Group Camps, 1021 Forest campsites	$184,130,000	$30,667,400	$1,196,845	$8,961,200	$3,066,740	**$13,224,785**


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Hatcheries and Nurseries

The DNR operates 5 cold water and 14 warm water hatcheries. We also operate one active nursery and one tree improvement facility. The buildings on these sites are addressed in the Buildings section. This section references the specialized equipment and infrastructure required for these sites. In the last decade, bio-hazards have become a great concern to hatcheries, which, in turn, requires more sophisticated equipment and maintenance.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
19 Hatcheries 2 Nurseries	$38,880,040	$3,888,004	$252,720	$1,555,202	$388,800	**$2,196,722**


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Water Control Structures

The DNR has over 1,000 structures that are used to control water levels on state land. These are small structures that don't meet the definition of dams covered by the dam safety program. The average lifecycle for a water control structure is 35 years. Annually, the DNR requires $1,364,960 to replace an average of 30 water control structures that have reached their life expectancy.

The DNR also owns 346 dams that are covered by the dam safety program. These are not included in this plan. A summary of the program is included in Appendix D.

Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
1,019 WCS	$101,900,000	$401,820	$152,850	$1,365,460	$40,182	**$1,558,492**

Monitoring Wells

Observation wells are placed in various aquifers across the state to monitor the groundwater levels and provide long term groundwater level data across the state. These data are used for water supply planning for communities, industry and agricultural uses. The information is key to permitting activities for these uses and helps determine the availability of water and assists in the mitigation of conflicts over water use. This network of wells will continue to expand and the maintenance of existing wells is critical. The cost is usually much less to repair and maintain these wells than to replace them. The typical lifecycle for a monitoring well is 25 years. Annually, the DNR requires $577,600 to replace an average of 38 monitoring wells that have reached their life expectancy.


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Number of Assets	Current Replacement Value (CRV)	Total Deferred Maintenance	Needed Annual Investment			
			Maintenance	Renewal & Replacement	Deferred Maintenance catch up (2016—2025)	Total
950	$14,440,000	$1,444,000	$36,100	$577,600	$144,400	**$758,100**


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Appendix C
10 Year Capital Asset Plan - Taking Care of What We Have
August 21, 2015

						A		B				C	A+B+C
Asset	Asset Type	#/miles/etc.	$/unit	Current Replacement Value (CRV)	% CRV	Maintenance - Predictive/Preventative/Reactive	% CRV	Renewal & Replacement	Lifecycle	% CRV	Deferred Maintenance (DM)	DM / 10yrs	Annual Total
Buildings	Buildings	2714	varies	$664,375,202	0.65%	$4,318,439	1.46%	$9,699,878	varies	19.68%	$130,771,259	$13,077,126	$27,095,443
Buildings	Renewable energy systems	1	varies	$4,500,000	0.60%	$27,000	2.50%	$112,500	25	2.00%	$90,000	$9,000	$148,500
Buildings	Misc site amenities - parking lot, fences, gates, sidewalks, etc.	1	varies	$36,400,000	0.15%	$54,600	5.00%	$1,820,000	varies	10.00%	$3,640,000	$364,000	$2,238,600
				$705,275,202		**$4,400,039**		**$11,632,378**			**$134,501,259**	**$13,450,126**	**$29,482,543**
Water	Water & sewer systems	4500	$25,000	$112,500,000	0.60%	$675,000	2.50%	$2,812,500	40	10.00%	$11,250,000	$1,125,000	$4,612,500
				$112,500,000		**$675,000**		**$2,812,500**			**$11,250,000**	**$1,125,000**	**$4,612,500**
Roads	Park Roads	150	$500,000	$75,000,000	0.15%	$112,500	4.00%	$3,000,000	25	10.00%	$7,500,000	$750,000	$3,862,500
Roads	Park Bridges	85	$350,000	$29,750,000	0.15%	$44,625	2.00%	$595,000	50	10.00%	$2,975,000	$297,500	$937,125
Roads	Forest Roads-one lane, gravel	2340	$242,000	$566,280,000	0.30%	$1,698,840	4.00%	$22,651,200	40	10.00%	$56,628,000	$5,662,800	$30,012,840
Roads	Forest Bridges &	46	$350,000	$16,100,000	0.25%	$40,250	4.00%	$644,000	50	10.00%	$1,610,000	$161,000	$845,250
Roads	Culverts	3000	$8,000	$24,000,000	0.30%	$72,000	4.00%	$960,000		10.00%	$2,400,000	$240,000	$1,272,000
Roads	Bridges - wildlife	45	$350,000	$15,750,000	0.30%	$47,250	3.32%	$522,900	50	10.00%	$1,575,000	$157,500	$727,650
Roads	Roads - wildlife	817	$242,000	$197,714,000	0.30%	$593,142	4.00%	$7,908,560	40	10.00%	$19,771,400	$1,977,140	$10,478,842
				$924,594,000		**$2,608,607**		**$36,281,660**			**$92,459,400**	**$9,245,940**	**$48,136,207**
Trails	State Trails	620	$150,000	$93,000,000	0.15%	$139,500	5.00%	$4,650,000	25	10.00%	$9,300,000	$930,000	$5,719,500
Trails	Trail Bridges	350	$400,000	$140,000,000	0.15%	$210,000	3.32%	$4,650,000	50	10.00%	$14,000,000	$1,400,000	$6,260,000
Trails	Trail Trailheads	60	$40,000	$2,400,000	0.65%	$15,600	4.00%	$96,000	25	10.00%	$240,000	$24,000	$135,600
Trails	Trail Culverts							$750,000					$750,000
Trails	Park Bike Trails	55	$150,000	$8,250,000	0.50%	$41,250	4.24%	$349,800	25	10.00%	$825,000	$82,500	$473,550
Trails	Park Hiking Trails	1030	$6,308	$6,497,240	0.15%	$9,746	5.54%	$359,947	25	10.00%	$649,724	$64,972	$434,665
Trails	Trails - wildlife	485	$2,000	$970,000	0.30%	$2,910	5.00%	$48,500	25	10.00%	$97,000	$9,700	$61,110
Trails	Culverts - wildife	485	$2,000	$970,000	0.30%	$2,910	4.00%	$38,800		10.00%	$97,000	$9,700	$51,410
				$252,087,240		**$421,916**		**$10,943,047**			**$25,208,724**	**$2,520,872**	**$13,885,835**
PWA	PWA - carry in-asphalt*	51	$100,000	$5,100,000	0.65%	$33,150	4.00%	$204,000	25	10.00%	$510,000	$51,000	$288,150
PWA	PWA - carry in-gravel*	674	$75,000	$50,550,000	0.65%	$328,575	6.67%	$3,371,685	15	10.00%	$5,055,000	$505,500	$4,205,760
PWA	PWA - trailer-asphalt*	505	$200,000	$101,000,000	0.65%	$656,500	4.00%	$4,040,000	25	10.00%	$10,100,000	$1,010,000	$5,706,500
PWA	PWA - trailer-gravel*	1656	$125,000	$207,000,000	0.65%	$1,345,500	6.67%	$13,806,900	15	10.00%	$20,700,000	$2,070,000	$17,222,400
PWA	PWA - wildlife*	36	$75,000	$2,700,000	0.65%	$17,550	6.67%	$180,090	15	10.00%	$270,000	$27,000	$224,640
PWA	Wildlife - Misc site amenities - parking lot, fences, gates, sidewalks, etc.	1	varies	$10,035,000	0.15%	$15,053	5.00%	$501,750	varies	10.00%	$1,003,500	$100,350	$617,153
				$376,385,000		**$2,396,328**		**$22,104,425**			**$37,638,500**	**$3,763,850**	**$28,264,603**
Marina	Small Craft Harbors, Marinas & Protected Accesses - less bldgs	10	varies	$47,024,000	0.65%	$305,656	4.00%	$1,880,960	varies	10.00%	$4,702,400	$470,240	$2,656,856
				$47,024,000		**$305,656**		**$1,880,960**			**$4,702,400**	**$470,240**	**$2,656,856**
Camps	Park Campsites	4000	$34,000	$136,000,000	0.65%	$884,000	4.00%	$5,440,000	25	16.90%	$22,984,000	$2,298,400	$8,622,400
Camps	Park Swimming Areas	34	$400,000	$13,600,000	0.65%	$88,400	7.50%	$1,020,000	25	16.90%	$2,298,400	$229,840	$1,338,240
Camps	Park Group Camps	112	$250,000	$28,000,000	0.65%	$182,000	8.00%	$2,240,000	25	16.90%	$4,732,000	$473,200	$2,895,200
Camps	Forest Rec Areas - campsites	1021	$5,000	$5,105,000	0.65%	$33,183	4.00%	$204,200	25	10.00%	$510,500	$51,050	$288,433
Camps	Forest Rec day use areas	95	$15,000	$1,425,000	0.65%	$9,263	4.00%	$57,000	25	10.00%	$142,500	$14,250	$80,513
				$184,130,000		**$1,196,845**		**$8,961,200**			**$30,667,400**	**$3,066,740**	**$13,224,785**
Hatch	Nurseries - less bldgs	2	$2,500,000	$5,000,000	0.65%	$32,500	4.00%	$200,000	varies	10.00%	$500,000	$50,000	$282,500
	(equipment, infrastructure)												
Hatch	Hatcheries - less bldgs	19	$1,783,160	$33,880,040	0.65%	$220,220	4.00%	$1,355,202	varies	10.00%	$3,388,004	$338,800	$1,914,222
	(Equipment, infrastructure)												
				$38,880,040		**$252,720**		**$1,555,202**			**$3,888,004**	**$388,800**	**$2,196,722**
WCS	Water Control Structures-non-wildlife	125	$100,000	$12,500,000	0.15%	$18,750	1.34%	$167,500	35	0.03%	$375,000	$37,500	$223,750
WCS	Water Control Structures - wildlife	894	$100,000	$89,400,000	0.15%	$134,100	1.34%	$1,197,960	35	0.03%	$26,820	$2,682	$1,334,742
				$101,900,000		**$152,850**		**$1,365,460**			**$401,820**	**$40,182**	**$1,558,492**
wells	Monitoring wells	950	$15,200	$14,440,000	0.25%	$36,100	4.00%	$577,600	25	10.00%	$1,444,000	$144,400	$758,100
				$14,440,000		**$36,100**		**$577,600**			**$1,444,000**	**$144,400**	**$758,100**
				$2,757,215,482		**12,446,060**		**98,114,432**			**342,161,507**	**34,216,151**	**$144,776,643**

*Number of PWA sites differs from "DNR By The Numbers" fact sheet and was generated by PAT databases.

Appendix B—Data Source

Buildings and Miscellaneous Site Infrastructure

Division: Operation Services

Contact: Nancy Freeman, Facility Operation Supervisor

Database: Archibus

Water and Sewer Systems

Division: Operation Services

Contact: Nancy Freeman, Facility Operation Supervisor

Database: Archibus

Roads and Bridges

Division: Forestry, Parks and Trails, Wildlife

Contact: Andrew Arends, Forestry Section Manager, Dana Vanderbosch, Acquisition and Development Manager, Bob Welsh, Habitat Program Manager

Database: GIS, Cartegraphe

Trails and Bridges

Division: Parks and Trails, Wildlife

Contact: Dana Vanderbosch, Acquisition and Development Manager, Bob Welsh, Habitat Program Manager

Database: GIS, Cartegraphe

Public Water Accesses

Division: Parks and Trails, Wildlife

Contact: Dana Vanderbosch, Acquisition and Development Manager, Bob Welsh, Habitat Program Manager

Database: GIS

Small Craft Harbors, Marinas and Protected Accesses

Division: Parks and Trails

Contact: Dana Vanderbosch, Acquisition and Development Manager, Jason Peterson, Landscape Architecture Supervisor

Database: Historical construction information, Recent feasibility studies

Campsites, Group Camps, Rec Areas and Day Use Areas

Division: Parks and Trails

Contact: Dana Vanderbosch, Acquisition and Development Manager

Database: GIS

Hatcheries and Nurseries

Division: Fisheries, Forestry

Contact: Todd Kalish, Fisheries Program Manager, Aaron Arends, Forestry Section Manager

Data source: Hatcheries – MN State Fish Hatcheries Information document for 2009 legislation with a 10% inflation rate. Nurseries – Historical construction information

Water Control Structures

Division: Wildlife, Eco Waters Resources

Contact: Bob Welsh, Habitat Program Manager, Jason Boyle, State Dam Safety Engineer

Database: ArcGIS

Monitoring Wells

Division: Eco Water Resources

Contact: Greg Kruse, Monitoring & Database Management Supervisor

Data system: Hydstra

Appendix C—Photo Identifications

1. Mississippi River Public Water Access north of Brainerd
2. Minnesota State Fair Grounds – DNR fish pond – ADA and code upgrades
3. Ft. Snelling State Park – fishing pier
4. McQuade Small Craft Harbor
5. Douglas Trail
6. Gooseberry Falls State Park, Lady slipper Visitor Center
7. McCarthy State Park - camping
8. State Forest Grouse Hunting
9. Maplewood State Park – Horse trails
10. Becker – Shell water control structure
11. Sibley State Park – snowshoeing
12. Afton State Park – Hiking
13. Itasca State Park - Mississippi Headwaters
14. Itasca State Park - Hiking to the Headwaters
15. Interstate State Park – Stairs to Potholes not accessible
16. Lake Maria State Park – Symbolic "Band Aid" on roof
17. Sibley State Park – Mt Tom Observation Tower
18. Spire Valley Hatchery office – foundation, pavement, siding & trim repair
19. Waskish garage – window & siding replacement
20. Talcott WMA cold storage – electrical code upgrade
21. Lanesboro Hatchery – repair rusted support columns
22. Old Mill State Park – Roof & Window replacement
23. French River Hatchery office – Asbestos tile replacement
24. Williams Forestry office – fixture replacement
25. General Andrews cold storage – siding & trim replacement
26. Cuyuna Scenic Recreational Area cold storage – Roof & siding replacement
27. Ft Ridgely State Park picnic shelter – column replacement
28. Camden State Park – resurface parking lot.
29. Lake Bronson State Park picnic shelter – fireplace renovation
30. Minneopa State Park – Historic Seppman Mill – foundation & mortar replacement
31. Lake Maria State Park – electrical box
32. Tettegouche State Park – Stair repair/replacement
33. St. Croix State Park—Confined space
34. Itasca State Park—Lift station controls
35. Itasca State Park—Corroded, galvanized steel water pipes
36. Itasca State Park—Confined space
37. Big Falls Pier
38. Stoney River Grade, Lake County
39. Steamboat Rest Pier
40. Hold for confirmation of location
41. Promiseberger washout
42. Ft. Ridgely State Park – bridge repair

Appendix C—Photo Identifications Continued

43. Munger Trail—resurface
44. Maple Ridge – condemned bridge
45. Rat River snowmobile bridge
46. Casey Jones wash out
47. Island Lake PWA—access renovation
48. Round Lake PWA, Jackson County – boat ramp replacement
49. Wilmert Lake PWA, south of Fairmont – boat ramp and dock replacement
50. Becker's PWA, South Heron Lake – parking lot repair/renovation
51. North Redwood River PWA – boat ramp repair
52. Knife River Marina - Replace and upgrade marina electrical system
53. Knife River Marina - Replacement of ice damaged piers
54. Knife River Marina – Replace and upgrade marina electrical system
55. Knife River Marina – Replacement of ice damaged piers
56. Knife River Marina – Pier replacement
57. Nerstrand Big Woods State Park – Replace campground electrical.
58. Cascade River State Park – Upgrade ADA access at drinking fountain
59. Savanna Portage State Park –Repair/replace drinking fountain
60. French River Hatchery – Replace/upgrade water source controls
61. General Andrews greenhouse – electrical upgrade
62. Pike River Hatchery – update batteries & holding tanks
63. French River Hatchery – growing / holding tanks
64. Pike River Hatchery—water source
65. Gabriel Anderson WMA water control structure
66. Aitkin-Hanging Kettle water control structure
67. Sterns-Eden water control structure
68. Aitkin-Little Pine Lake water control structure
69. Monitoring well in need of replacement
70. State Forest land in Aitkin County near the town of McGregor – Replacement of monitoring well

Appendix D

Dam Safety Program

The State of Minnesota owns 346 dams. The dams are managed by the Department of Natural Resources. Minnesota Rules define a dam as an artificial barrier that impounds water and that must be greater than 6 feet high.

State owned dams have historically received funding for repairs, replacements, and removals through state general obligation bonding. Some of the appropriated bonding funds are also granted to local government units. The funds are distributed based on the dam safety project priority list, which is developed by the DNR and submitted to the legislature every other year.

Most of the dams the state owns were built in the 1930's under the Works Progress Administration and are now owned and maintained by the State. There is a growing need to rehabilitate dams in the state as the majority of the dams are beyond their expected service life. The upcoming Lake Bronson Dam rehabilitation could cost many millions of dollars. It is one of two high-hazard dams owned by the state. Smaller low-hazard potential dams that control the water level of some important lakes have not typically been funded in the past because the larger, higher-hazard dam projects involving human safety are the first priority.

Hazard Classification of State Owned Dam

Hazard classification is based on the potential consequences of a dam failure. It is not reflective of the condition of the dam or the likelihood of failure.

2	High Hazard - failure would probably cause loss of life or serious economic loss
14	Significant Hazard - failure would cause limited economic loss, but no loss of life
330	Low Hazard - failure would cause only minor losses

Cost to Rehabilitate 346 State Owned Dams Over the Next 10 years:

Assume 70% require no work	**242 @ $0 each=**	**$**	**0**
Assume 10% require minor repairs	**34 @ $25,000 each=**	**$**	**850,000**
Assume 10% require reconstruction	**34 @ $125,000 each=**	**$**	**4,250,000**
Assume 4% require removal	**14 @ $250,000 each=**	**$**	**3,500,000**
Assume 5% require major repair	**17 @ $250,000 each=**	**$**	**4,250,000**
Assume 1% require total reconstruction	**4 @ $800,000 each=**	**$**	**3,200,000**
Lake Bronson Dam rehabilitation	**1 @ $7,000,000 each=**	**$**	**7,000,000**
		$	**23,050,000**
			(2015 dollars)

Assuming a 10 year cycle, this amounts to $4,610,000 per biennium.