DEPARTMENT OF NATURAL RESOURCES

10-Year Capital Asset Need:
Taking care of what we have.

February 2023

COVER PHOTOS:

A section of the Glacial Lakes State Trail in construction near Sibley State Park. The DNR manages state trails across Minnesota. The state trail network is suffering from a deferred maintenance backlog of more than $45 million.

The campground entrance bridge at Tettegouche State Park. This bridge was built in 1924. It has a fracture-critical structure and is in poor condition, with severe vehicle weight restrictions imposed for safety reasons. Annual safety inspections are required, using the vehicle seen in the photo.

An aerial view of the Lanesboro Fish Hatchery. The red roof building is the replacement nursery and office building, completed in 2021 at a cost of approximately $6 million. The previous building was 65 years old and presented numerous safety hazards to hatchery staff as well as operational limitations for trout production. The Lanesboro hatchery produces about 100,000 pounds of rainbow and brown trout annually for stocking across Minnesota.

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DNR's mission is to work with Minnesotans

to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

capital asset need

The Minnesota Department of Natural Resources (DNR) requires $211,000,000 annually over the next 10 years to maintain and renew the capital assets currently under its custodial control. The condition of DNR's capital assets will continue to decline, and maintenance costs will increase, each year this amount is not invested.

goal

Restore and maintain all capital assets to "fair" or better condition within 10 years.

OVERVIEW

DNR's mission of working with Minnesotans to conserve and manage the state's natural resources, provide outdoor recreation opportunities, and provide for commercial uses of natural resources in a way that creates a sustainable quality of life depends upon a wide range of facilities and infrastructure, both built and natural.

This report focuses on the financial needs related to sustaining built assets under DNR's custodial control. These consist of many facilities obvious to the public, such as campgrounds at state parks and boat ramps at popular lakes. There are also less obvious types of infrastructure, such as monitoring wells that provide critical groundwater data and water control structures that allow us to manage shallow lakes for waterfowl and other wildlife.

DNR capital assets are abundant, unique, and diverse. DNR-managed assets include:

- The state park campground or camper cabin where Minnesotans spend their summer vacations
- The public fishing pier where a child catches their first fish—and the fish hatchery that raised that fish for stocking
- The DNR office where people can buy a fishing license, submit a permit application, or get information about natural resources in their community

This is the fourth update of the DNR's 10-Year Capital Asset Need Report since it was originally produced in 2015. The full range of DNR capital assets are addressed in this report including buildings, roads, trails, bridges, dams, water and wastewater systems, fish hatcheries, public water accesses, and the state forest tree nursery. This document summarizes the condition of DNR's built infrastructure and identifies the funding needed to bring these capital assets up to "fair" or better condition within 10 years.

Minnesotans rely on DNR's facilities and infrastructure to support our state's unique quality of life. The intent is for all DNR capital assets to be safe, functional, and accessible, support employee productivity, deliver superb services to Minnesotans, and to model environmental sustainability and reduced energy consumption.

2023 DNR CAPITAL ASSET FACTS

The DNR owns more built infrastructure than any other state entity, apart from the Minnesota State campus system.

Current Replacement Value
$3.49 billion

Deferred Maintenance
$778 million

REPORT METHODOLOGY

This report uses a standardized framework to identify DNR's annual capital asset investment need for "built" assets. DNR's first Capital Asset Needs Report was completed in 2015 and established a framework and methodology for the report that has been carried forward, with improvements, to the present update.

Asset inventories are the foundation of this report. They are used for determining the Current Replacement Value (CRV) for each type of asset and calculating or estimating the cost of deferred maintenance based on the condition of the assets. The tools and resources used to inventory and assess capital assets vary by the type of asset. DNR inventories and assesses buildings and bridges using commercial asset management software (Archibus and Cartegraph).

Other assets, such as roads, are inventoried using specialized databases and geospatial information system applications. Depending upon the tools used, the level of precision in inventory data varies.

DNR invests in the continuous improvement of asset inventories and condition assessment processes. For example, DNR completed an exhaustive inventory of wastewater (septic) systems in 2020-2021, and is now proceeding with condition assessments of those systems that will provide more accurate estimates of replacement values, deferred maintenance, and capital investment needs in the future.

STATE TRAIL IMPROVEMENT EXAMPLE

Before: Sakatah Singing Hills State Trail. The segment between Elysian and Waterville, a portion of which is shown in the photo, was aged and had begun to fail, requiring major reconstruction.

After: As can be seen in this photo of part of the trail following repair, the wider structure, improved drainage, and new pavement provide a better experience for trail hikers and bikers for years to come.

THE REPORT'S FRAMEWORK QUANTIFIES THE THREE COMPONENTS OF THE ANNUAL CAPITAL ASSET INVESTMENT NEED AS FOLLOWS:

Preventive maintenance: Planned work intended to keep assets operating by proactively preventing common failures. Greater investment in preventive maintenance keeps assets in better condition, at a lower life cycle cost than waiting to conduct more extensive repairs when something fails. The target investment is determined using a percentage of the aggregate CRV, by asset type. The percentages are based on industry standards and DNR operating experience.

Renewal and replacement: A capital expense to rehabilitate or replace assets as they reach the end of their service lives and can no longer be maintained cost-effectively. Costs for renewal and replacement are determined using a percentage of the aggregate CRV, by asset type. The percentages are based on the expected service life of each asset type.

Deferred maintenance: The sum of maintenance and capital repairs for an asset that are needed, but have not been completed due to lack of resources. DNR's asset management software calculates deferred maintenance costs for buildings and bridges. For other asset types, deferred maintenance is estimated in aggregate based on the professional judgement of program managers. Because it would not be feasible to address all deferred maintenance in a single bonding cycle, DNR has established a goal of catching up on deferred maintenance over 10 years. Therefore, the annual deferred maintenance need is one-tenth of the total deferred maintenance.

BUILDING IMPROVEMENT EXAMPLE

Before: Temperance River State Park old campground shower building. In addition to its poor physical condition, the building was not accessible or compliant with modern user needs.

After: Temperance River State Park new shower building. The replacement building consumes less water and energy, is fully accessible, and provides for modern camper needs such as family rooms and a dish washing station.

STATUS OF DNR'S ASSETS TODAY

The replacement value of DNR capital assets is $3.49 billion, with a deferred maintenance backlog of $778 million.

Historically, Minnesota has not invested sufficient resources to manage and maintain DNR capital assets in an acceptable condition. For example, appropriations to the DNR for Natural Resources Asset Preservation (NRAP) have averaged $7.7 million per year from 2011 to 2022. While helpful, this is a small fraction of the DNR's annual capital asset investment need of $211 million. As a result, the deferred maintenance backlog continues to grow.

The costs of deferred maintenance compound over time due to accelerated asset deterioration and the resulting increased need for emergency repairs. Addressing the deferred maintenance backlog will both enhance the usability of current facilities and reduce the risk of more costly capital repair obligations in the future.

The annual capital asset investment need includes preventive maintenance, renewal or replacement of assets at the end of their life cycle, and the cost to address the deferred maintenance backlog. Appendix C details these costs for each asset type.

TOTAL DNR CAPITAL ASSET NEED

Asset preservation funding is needed to address health and safety, asset integrity, Americans with Disabilities Act (ADA) compliance, building code compliance, environmental sustainability, and the need to improve public access to and usability of DNR-administered facilities.

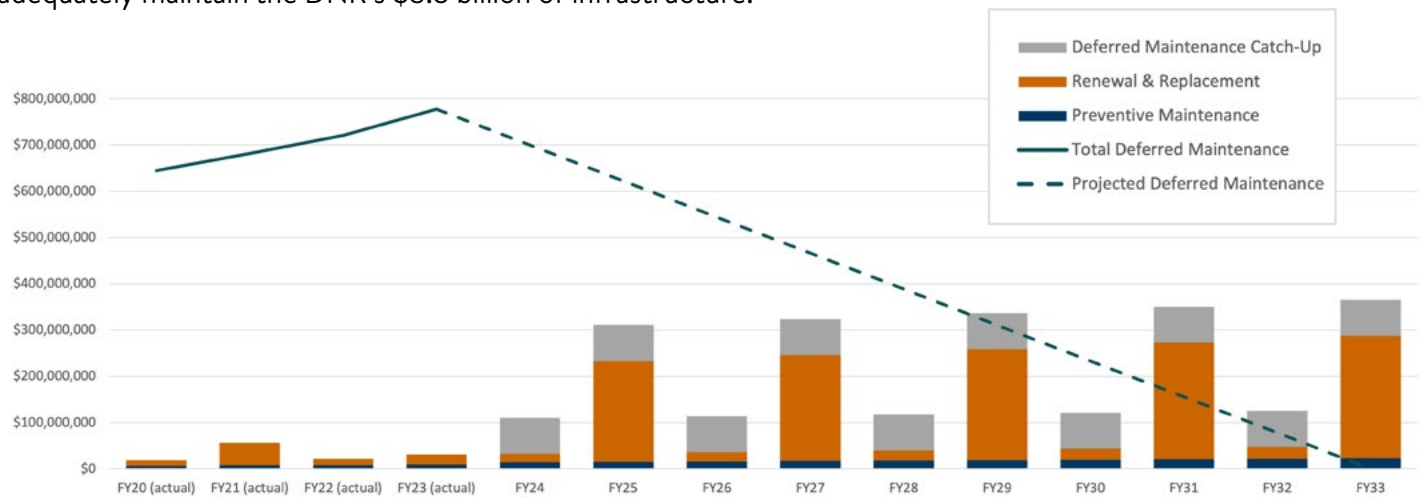
DNR Capital Asset Preservation Need (See Appendix C for details)

Current Replacement Value	Deferred Maintenance	Annual Preventative Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Need
$3,489,320,000	$777,700,000	$14,680,000	$118,770,000	$77,770,000	$211,220,000

Deferred Maintenance Trends and Capital Needs

This graph shows the deferred maintenance backlog declining to zero over 10 years, and the annual investment in "catch-up" funding needed to achieve this result. The FY20-23 actual funding amounts include capital investment appropriations from the Outdoor Heritage Fund, Parks and Trails Legacy Fund, and the Environment and Natural Resources Trust Fund in addition to bonding appropriations.

This graph also shows the comparison between recent actual funding levels and the funding needed to adequately maintain the DNR's $3.5 billion of infrastructure.



WHAT DNR IS ACCOMPLISHING

Natural Resources Asset Preservation funds are bond proceeds appropriated to DNR under Minnesota Statutes 84.946 for preservation or replacement of existing assets. For example, the bridge replacement highlighted below was an NRAP-funded project. Betterment of Buildings funds are bond proceeds appropriated to DNR under Minnesota Statutes 86A.12 and are used to acquire, construct, and expand buildings. The purchase and remodel of the former city fire hall in Zimmerman, Minnesota to provide space for multiple staff and meet DNR's forestry and wildfire suppression needs in the area is an example of a "betterment" project.

Recent NRAP and Betterment of Buildings bonding appropriations:

2012	$17,000,000
2014	$10,000,000
2016	none
2017	$15,000,000
2018	$32,581,000
2019	$3,419,000
2020	$20,000,000
2022	none

In addition to NRAP and Betterment of Buildings funding, DNR invests $5.2 million annually in the Facilities Management Account (FMA) authorized by Minnesota Statutes 84.0857. DNR divisions are assessed FMA fees based on the space they occupy in DNR-owned buildings.

FMA funds are used for smaller maintenance and repair projects, and preventive maintenance. These projects include basic building repairs such as replacing broken light switches, furnace and water heater replacements, and projects to meet health and safety standards. Operation of facilities, such as the cost of snow removal and utilities, is the responsibility of the custodial divisions and is not funded through FMA.

Photo below: A recently completed replacement bridge on a forest road in the Finland State Forest. As DNR replaces aging bridges, we incorporate current stream flow and ecosystem design methodologies to account for the effects of more intense rain events due to climate change, and to improve fish and wildlife habitat.

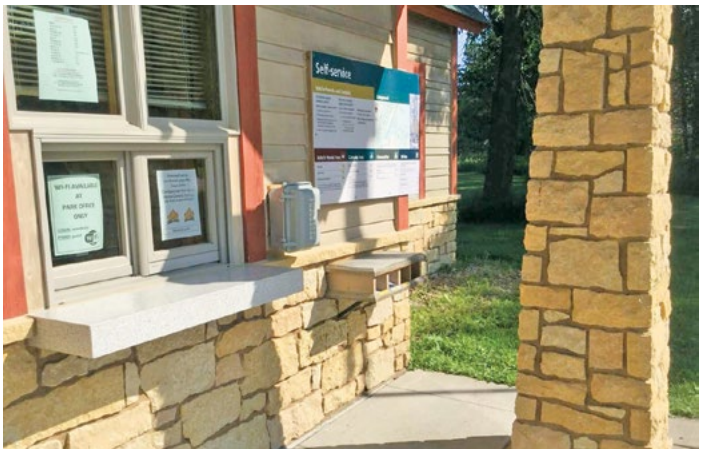
ACCESSIBILITY AND ADA COMPLIANCE

DNR advances diversity, equity, and inclusion by striving to ensure its facilities, lands, and engagement processes are welcoming and accessible to all Minnesotans. One way we do this is by improving accessibility at DNR-managed facilities for people with disabilities, which also enhances the experience of other users and supports workplace compliance requirements.

All new construction, rehabilitation, and replacement projects are designed to comply with ADA requirements. However, sufficient resources are not available to proactively replace infrastructure that does not meet current ADA requirements. As a result, few DNR-managed assets are fully accessible based on current standards.

In 2018, DNR commissioned a survey of two state parks in the greater Twin Cities metro area to evaluate comprehensive accessibility needs. The combined cost to alter, retrofit, or replace park buildings and infrastructure to achieve full mobility-related accessibility in just those two state parks was more than $13 million. With 75 state park and recreation areas, and 236 report-to-work buildings, the cost to make all DNR-managed facilities fully accessible is well beyond reach at current funding levels.

Main entrance of the Waterville Hatchery office. The entrance, and the 1950s-era facility as a whole, are not accessible.



William O'Brien State Park contact station. This building is in good physical condition but is not compliant with ADA. Namely (1) the counter at the sliding window is too high and (2) the telephone and the wood desk for self-registration, while low enough to meet ADA, are blocked by the stone column. People with mobility issues, or in wheelchairs, cannot access either of those things because they are too close to the column.

Public entrance of Williams Forestry office. Sidewalk and stairs do not meet ADA requirements.

Newly-reconstructed walkway to the visitor center at Fort Snelling State Park. The previous walkway did not meet ADA slope standards.

BUILDINGS

Building data is derived from Archibus, the state enterprise facility management database. DNR conducts Facility Condition Assessments (FCAs) on all owned buildings using the Department of Administration's statewide enterprise methodology. Based on the FCAs, Archibus calculates the CRV and deferred maintenance.

DNR currently owns 2,924 buildings. Nearly one quarter (675) of DNR buildings have a Facility Condition Index (FCI) rating of "crisis" or "poor." See the Building Assessment FCI Rating table below for a summary of the condition ratings of all DNR buildings.

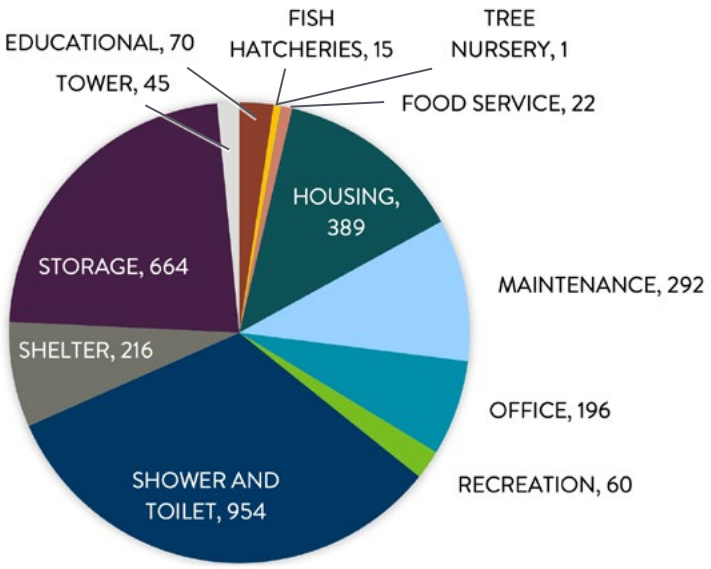
DNR-owned buildings include 236 buildings where our staff report to work. Eighteen of these report-to-work buildings are in crisis or poor condition.

Building FCI Ratings as of September 22, 2022. This is only for buildings (does not include related site infrastructure).

See Appendix A for further explanation of the difference between deferred maintenance and adjusted deferred maintenance.

Measure	Total	Excellent Condition (0.00 - 0.05)	Good Condition (0.05 - 0.15)	Fair Condition (0.15 - 0.30)	Poor Condition (0.30 - 0.50)	Crisis Condition (0.50 - 1.00)
Buildings Assessed	2,924	226	1,015	1,008	483	192
Gross Area (square feet)	3,450,000	179,719	1,058,332	1,280,001	419,958	512,010
Current Replacement Value	$693,710,000	$42,012,438	$233,417,210	$281,164,050	$86,241,564	$50,871,183
Deferred Maintenance	$155,370,000	$1,202,962	$25,877,464	$59,101,851	$31,561,905	$37,625,705
Adjusted Deferred Maintenance	$79,040,000	$161,545	$3,682,285	$17,326,289	$18,348,887	$39,524,227

Number of DNR-owned buildings, by building type



The number of DNR-owned buildings by building type includes: 954 shower and toilet, 216 shelters, 664 storage, 45 towers, 70 education, 1 tree nursery, 15 fish hatcheries, 22 food service, 389 housing, 292 maintenance, 196 offices, and 60 recreational buildings.

The needed investment in our buildings and related infrastructure is approximately $25 million per year.

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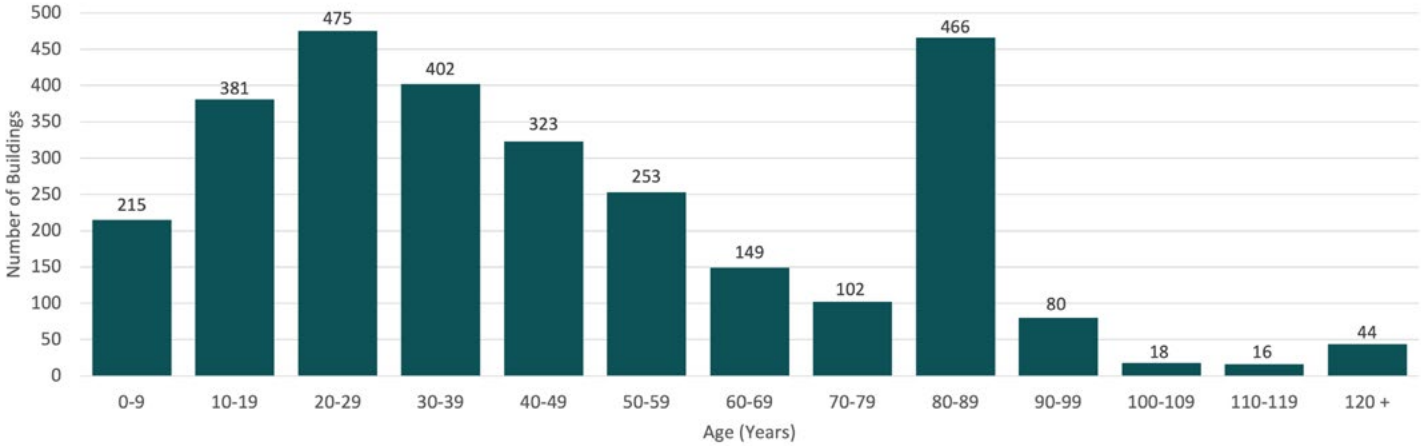
The average age of DNR-owned buildings is 46 years, compared to 41 years for all state-owned buildings. Many buildings are historic and date from the 1930s or earlier. The age structure of DNR's buildings leads to a significant portion of DNR's capital needs.

The accumulation of deferred maintenance is more significant in older buildings, and many of those buildings are well beyond their expected useful life.

Further, the DNR's older buildings are often functionally obsolete and not fully accessible. Renovating very old buildings to address obsolescence, compliance with modern building codes, and accessibility requirements can be very expensive. In many cases, building replacement is a the more cost-efficient option to address inadequacies and meet current and future needs.

Age distribution of DNR-owned buildings



The graph above shows the age distribution of DNR-owned buildings. Note the very large number of historic buildings from the CCC/WPA era of the 1930s. These buildings are extraordinarily expensive to operate and maintain.

Buildings, renewable energy systems and related infrastructure (parking lots, fences, gates, sidewalks, utilities, etc.)

Number of Assets	Current Replacement Value	Adjusted Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
2,965	$731,926,000	$82,870,000	$4,563,000	$12,193,000	$8,287,000	$25,043,000

BUILDING COMPONENTS

Buildings include multiple components such as foundations, walls, roofs, doors, heating and cooling systems, plumbing and interior finishes. The average DNR FCA addresses 16 separate components. DNR currently has 455 building components rated in crisis condition with a deferred maintenance cost of nearly $22.7 million, and 1,557 building components rated in poor condition with a deferred maintenance cost of nearly $34.2 million.

BUILDING COMPONENT CONDITION EXAMPLES

Tettegouche State Park historic camp lodge roof in crisis condition.

Fort Ridgely State Park campground picnic shelter with rotting supporting timbers.

General Andrews Forestry area office garage. The metal overhead door is severely corroded and must be replaced.

SITE INFRASTRUCTURE

Buildings rarely stand alone. An accessible and functional building requires additional site infrastructure. Depending on the building, this may include assets such as parking lots, sidewalks, lighting, fences, gates, and utilities.

Much of the existing DNR site infrastructure is not yet documented in Archibus and therefore the annual investment cost estimates and replacement values do not yet represent the full site infrastructure need. Over the next few years, we will be performing site condition assessments using Department of Administration standard procedures to more accurately account for these infrastructure assets.

SITE INFRASTRUCTURE CONDITION EXAMPLES

Two Harbors Headquarters parking lot.

Big Falls Forestry office steps.

Savannah Portage State Park contact station sidewalk.

Aitkin office sidewalk.

WATER AND WASTEWATER SYSTEMS

DNR buildings are often located outside of municipal service areas, making on-site water supply and wastewater treatment systems necessary. Many of these systems are near or past their service life and need attention. The average useful life for a water or wastewater system is 40 years.

DNR currently operates seven domestic wastewater treatment systems and six industrial wastewater treatment systems that are large enough to require a National Pollutant Discharge Elimination System (NPDES) or State Disposal System discharge permit. These permits are issued by the Minnesota Pollution Control Agency (MPCA).

The wastewater system at Myre-Big Island State Park is one such permitted facility. That system is at high risk of polluting the environment and does not comply with modern sewage system regulations. A project to replace the system with a sewer connection to the city of Albert Lea awaits funding for construction.

DNR also manages hundreds of individual septic systems at DNR facilities. Many of these systems have reached or exceeded their useful life.

DNR's water supply infrastructure includes both wells and distribution systems. The advanced age of many of these systems results in frequent distribution line failures. These are expensive repairs and can be disruptive to operations.

In addition, these aging water systems do not meet current standards, have confined spaces that are hazardous to access, and have been expanded in a piecemeal fashion over decades. This results in significant safety, operational and maintenance challenges. Fort Snelling State Park is an example of a site where multiple water line breaks occur annually.

Water and Wastewater Systems

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
577	$96,000,000	$11,520,000	$576,000	$2,400,000	$1,152,000	$4,128,000

WATER AND WASTEWATER SYSTEMS continued from page 15

DNR needs at least $4.1 million annually to maintain and catch up on deferred maintenance on water and wastewater systems and replace a number of wastewater (septic) systems to bring them into compliance with state standards.

DNR currently has several high-priority water and wastewater system projects underway or in need of funding. Below are a few examples:

- Fort Snelling State Park water supply system replacement, not yet funded – $3 million
- Itasca State Park Douglas Lodge area water and sewer line replacement, not yet funded – $3.5 million
- Father Hennepin State Park wastewater system replacement via connection to the city of Isle, funded and in design – $765,000
- Myre-Big Island State Park, wastewater system replacement via connection to the city of Albert Lea, construction not funded – $3.5 million

SITE INFRASTRUCTURE CONDITION EXAMPLES

One of three new wastewater treatment ponds recently completed in Itasca State Park. The previous wastewater treatment system was obsolete and no longer met state pollution control requirements. The Minnesota Pollution Control Agency directed a complete replacement of the system. The project was completed in 2021 at a cost of $3.5 million.

A recent water main break in Fort Snelling State Park. This is an all-too-often occurrence in many of our state parks due to aging infrastructure.

BRIDGES

DNR owns and maintains 514 pedestrian and vehicle bridges statewide. DNR bridges provide safe crossings over rivers, streams, and highways for recreational, commercial, resource management, and emergency response purposes.

Bridges are located across the outdoor recreation system, including 136 in state parks and recreation areas; 49 in state forests, and 300 on state trails, as well as 20 bridges that support hunting and fishing access and activities and 9 bridges with "other" or multiple purposes.

DNR's bridge engineers provide asset management services for DNR-owned bridges. These services include periodic inspections, data management, recommendations on routine maintenance requirements, and project management of repair, replacement and new bridge construction. DNR uses the standard bridge inspection protocols established by the American Association of State Highway and Transportation Officials and the Minnesota Department of Transportation.

The types of bridges DNR owns include modern steel light-duty bridges, wide-span concrete culverts, and retired railroad and highway bridges that are well over 100 years old. The typical service life of an existing bridge is 30-40 years; the average age of DNR bridges is approximately 44 years. Due to advances in materials technology, DNR's newest bridges have expected service lives of 75 years.

In the past few years, DNR has experienced significant issues with a number of aging bridges, resulting in mandatory closures to traffic or the imposition of weight restrictions. In particular, the High Falls Bridge at Tettegouche State Park must be replaced as soon as possible due to age and corrosion of the suspension cables. In 2019, the vehicle bridge at Tettegouche State Park connecting the visitor center to the campground required an emergency repair after a bent gusset plate was discovered during a routine inspection. This bridge is 98 years old and has a fracture-critical structure. While the emergency repair allowed for continued use of the bridge for a short while, a long-term solution is needed. DNR is currently evaluating options for the future of this bridge.

Bridges

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
514	$97,062,000	$17,383,000	$472,000	$1,941,000	$1,738,000	$4,151,000

Photo at left: Extremely corroded structural steel on the bridge at Tettegouche State Park.

BRIDGES continued from page 17

BRIDGE CONDITION EXAMPLES

Above: Alborn-Pengilly Trail. This old railroad bridge shows complete failure of the concrete surfaces, exposing structural reinforcing steel to corrosion. This bridge must be completely replaced; it is not repairable.

Center: Banning State Park. This bridge is closed to vehicle traffic due to the fractured support beam seen in the photo.

Below: Wild Indigo Prairie SNA. This trail bridge is in imminent danger of collapse due to rotting structural timbers. This bridge must be completely replaced; it is not repairable.

ROADS AND TRAILS

ROADS

DNR is responsible for 4,655 miles of paved and unpaved roads within state forests, state parks and recreation areas and wildlife management areas. Roads have an expected service life of 15 to 25 years. DNR must rehabilitate roughly 180 miles per year to keep roads in a safe and passable condition. Recent capital funding appropriations were only sufficient to address a small fraction of that number. Replacement of failed roadways costs $260,000-$400,000 per mile.

TRAILS

Statewide, DNR is responsible for 2,605 miles of trails, of which 743 miles are paved. This includes Minnesota's prized and ever-growing state trail network, as well as trails within state parks, state recreation areas and wildlife management areas. Paved trails have a 25-year lifecycle. The growing backlog of deferred maintenance on paved trails means that more than 100 miles of paved trails are in immediate need of rehabilitation. Rehabilitation of paved trails costs about $280,000 per mile.

Roads and trails

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
7,260 miles; 7,110 culverts	$1,496,370,000	$480,170,000	$4,050,000	$59,855,000	$48,017,000	$111,922,000

ROADS AND TRAILS CONDITION EXAMPLES

This very large culvert on a forest system road in Finland State Forest was washed out by a storm in 2022. Storm events are steadily increasing in intensity, overwhelming old road infrastructure that was not designed for today's climate.

Wild River State Park. This asphalt road has failed and requires full reconstruction.

PUBLIC WATER ACCESSES

Recreational boating is a $3.1 billion economic engine in the state (source: National Marine Manufacturers Association, 2019). This important economic and recreational activity is largely supported by public water accesses (PWAs) maintained by the DNR and local units of government.

DNR maintains 1,689 state PWAs. PWAs have a lifecyle of 15-25 years, depending on the roadway and parking surface materials used. Many PWAs were constructed prior to passage of the ADA and Minnesota's focus on preventing the spread of aquatic invasive species (AIS). These older PWAs need re-configuration or replacement to enhance accessibility, provide space for boat washing and AIS inspection, incorporate shoreline buffers, and meet current stormwater management requirements. A total annual investment of $20 million is needed to recapitalize and sustain DNR-managed PWAs to serve anglers, boaters and paddlers across Minnesota.

DNR-managed public water accesses

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
1,689	$263,805,000	$31,657,000	$1,660,000	$15,317,000	$3,166,000	$20,143,000

PUBLIC WATER ACCESSES CONDITION EXAMPLES

Before: Lake Alexander west access prior to rehabilitation.

After: Lake Alexander west rehabilitated access.

German Lake PWA showing failure of the asphalt pavement. This pavement must be completely replaced.

Lake Rachel PWA gravel road showing ongoing storm water erosion. This area must be repaired or erosion will get worse.

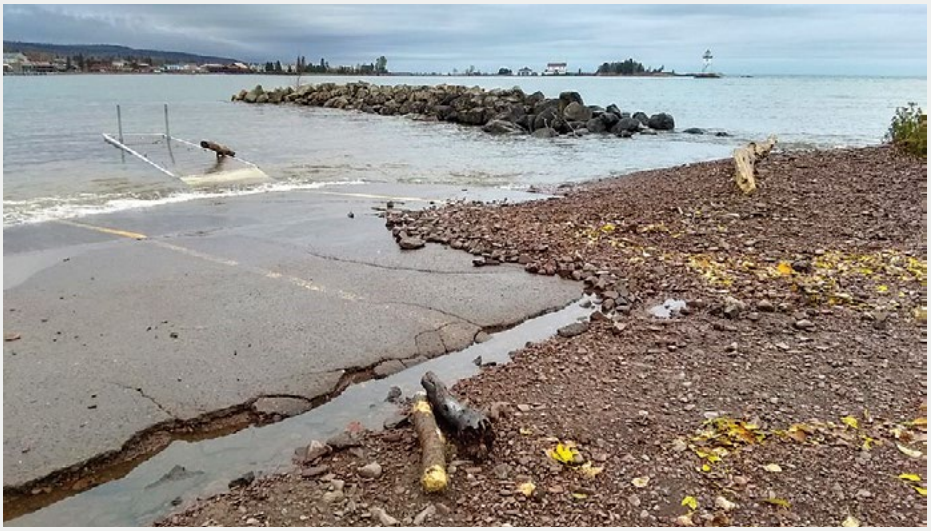
LAKE SUPERIOR SMALL CRAFT HARBORS, MARINAS, AND PROTECTED ACCESSES

Small craft harbors, protected water accesses, and marinas provide safe access to Lake Superior for recreational watercraft and small commercial vessels. Deferred maintenance catch-up is $2 million annually, with a total annual investment need of nearly $6 million.

Marinas, small craft harbors, and protected accesses

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
10	$82,000,000	$20,500,000	$533,000	$3,280,000	$2,050,000	$5,863,000

LAKE SUPERIOR WATER ACCESS CONDITION EXAMPLE



Left: The Grand Marais water access and breakwater in failed condition.

Below: The same water access after reconstruction in August 2022. The new breakwater is substantially stronger and designed to require less maintenance.

CAMPSITES, GROUP CAMPS, RECREATION AREAS, AND DAY-USE AREAS

DNR manages more than 5,300 campsites at state parks, state recreation areas and state forest recreation areas, as well as 107 group camps and 64 day-use areas.

Many of these facilities are more than 50 years old and need major renovation to address deferred maintenance, conform to current standards, and meet changing patterns of recreation.

Campsites, Group Camps, and Day-Use Areas

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
5,513	$226,150,000	$37,187,000	$1,470,000	$9,046,000	$3,719,000	$14,235,000

CAMPSITES, GROUP CAMPS, RECREATION AREAS, AND DAY-USE AREAS CONDITION EXAMPLES

The old Cedar Hill Campground shower building at Whitewater State Park. This building was in poor condition, undersized, energy inefficient, and did not meet the needs of today's campers.

The replacement shower building, constructed in 2020 as part of a larger campground rehab project funded by a mix of Legacy and 2018 NRAP funding. The new building meets modern code, energy and water efficiency, and accessibility requirements, and also meets the expectations of park campers.

CAMPSITES, GROUP CAMPS, RECREATION AREAS, AND DAY-USE AREAS continued from page 22

Renewal and replacement focuses on public safety, ADA accessibility, electrical upgrades, accommodating family groups and more recreational vehicle use, and supporting higher-amenity experiences. Often, building renovation or replacement to provide modern bathroom and shower facilities occurs in conjunction with a campground rehabilitation. The average lifecycle for a campsite is 25 years. The total annual investment needed is $14.2 million to rehabilitate an average of 200 campsites that are past their expected useful life, maintain those that are in better condition, and catch up on years of deferred maintenance.

More than **9 million** people visited state parks and recreation areas in 2019. Visitor numbers are increasing—DNR served **12 million** state park visitors in 2021, a 33% increase in two years.

These examples of inadequate and aging electrical infrastructure (left) and campground water delivery (below) illustrate system-wide needs.

Campgrounds across the system can no longer support the electrical demands of today's campers. Old and failing electrical and drinking water infrastructure must be replaced with larger systems that meet current and future capacity needs.

FISH HATCHERIES

DNR operates four cold water and 11 cool/warm water fish hatcheries. Each of the 15 hatcheries plays a unique role in providing the many species and strains of fish stocked across the state.

Many DNR hatcheries were constructed in the 1950s and are still operating with original equipment. Significant repairs and upgrades are needed. Further, in the last decade, fish diseases and aquatic invasive species have become a much greater concern. As a result, hatcheries require more sophisticated equipment and maintenance. The most pressing needs include:

- Biosecurity upgrades to protect against fish diseases and aquatic invasive species
- Replacement of antiquated water piping and control systems that are on the verge of failure and risk the loss of hundreds of thousands of fish each year
- Repairs to rearing pond dike systems to address erosion and failures
- Repairs to enhance staff safety such as slip-proof surfaces, railings, and mechanical aids to moving heavy materials
- Pond, raceway, and rearing-unit maintenance
- Energy efficiency upgrades

DNR completed feasibility studies in 2018 and 2019 on four hatcheries. The studies assessed the current conditions and recommended improvements to ensure that the hatcheries are meeting current needs and will be able to function as needed into the future. The feasibility studies identified $58 million in improvements needed to address critical issues related to biosecurity, aging infrastructure, and staff safety.

FISH HATCHERY CONDITION EXAMPLES

Failing pond dike at Waterville Hatchery.

Waterville Hatchery fry tank in poor condition.

FISH HATCHERIES continued from page 24

The Waterville hatchery is the highest-priority major renovation. Waterville is a critically important component of the state's walleye, northern pike, and muskie management programs. Waterville produces about 35 million walleye fry, 200,000 walleye frylings, 25,000 walleye fingerlings, 1.5 million northern pike fry, and 4,000 muskie fingerlings annually. Northern pike and walleye from Waterville are stocked in southern Minnesota, while muskie from this hatchery are stocked statewide.

The aging infrastructure at Waterville is failing and/or unusable and threatens to severely reduce the state's capacity to raise walleye and muskie. A new hatchery building and significant improvements to the fish ponds are needed. In addition, Waterville's source water is listed as infested with Eurasian watermilfoil. The result is that fish from this facility can only be stocked in waters with Eurasian watermilfoil. Adding other water sources will reduce reliance on, and enable treatment of, water from the infested source.

Next on the list of the highest-priority fish hatchery repairs or replacements is the following critical infrastructure at the Crystal Springs, New London, and Spire Valley hatcheries:

- Crystal Springs – New hatchery building construction and replacement of degraded raceways and water lines to support more than 250,000 trout raised at the facility annually
- New London and Spire Valley – Biosecurity and pond improvements to support production of trout, walleye, and muskie

Hatcheries

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
15	$111,000,000	$22,200,000	$722,000	$4,440,000	$2,220,000	$7,382,000

Lanesboro Hatchery dilapidated spring pool wall.

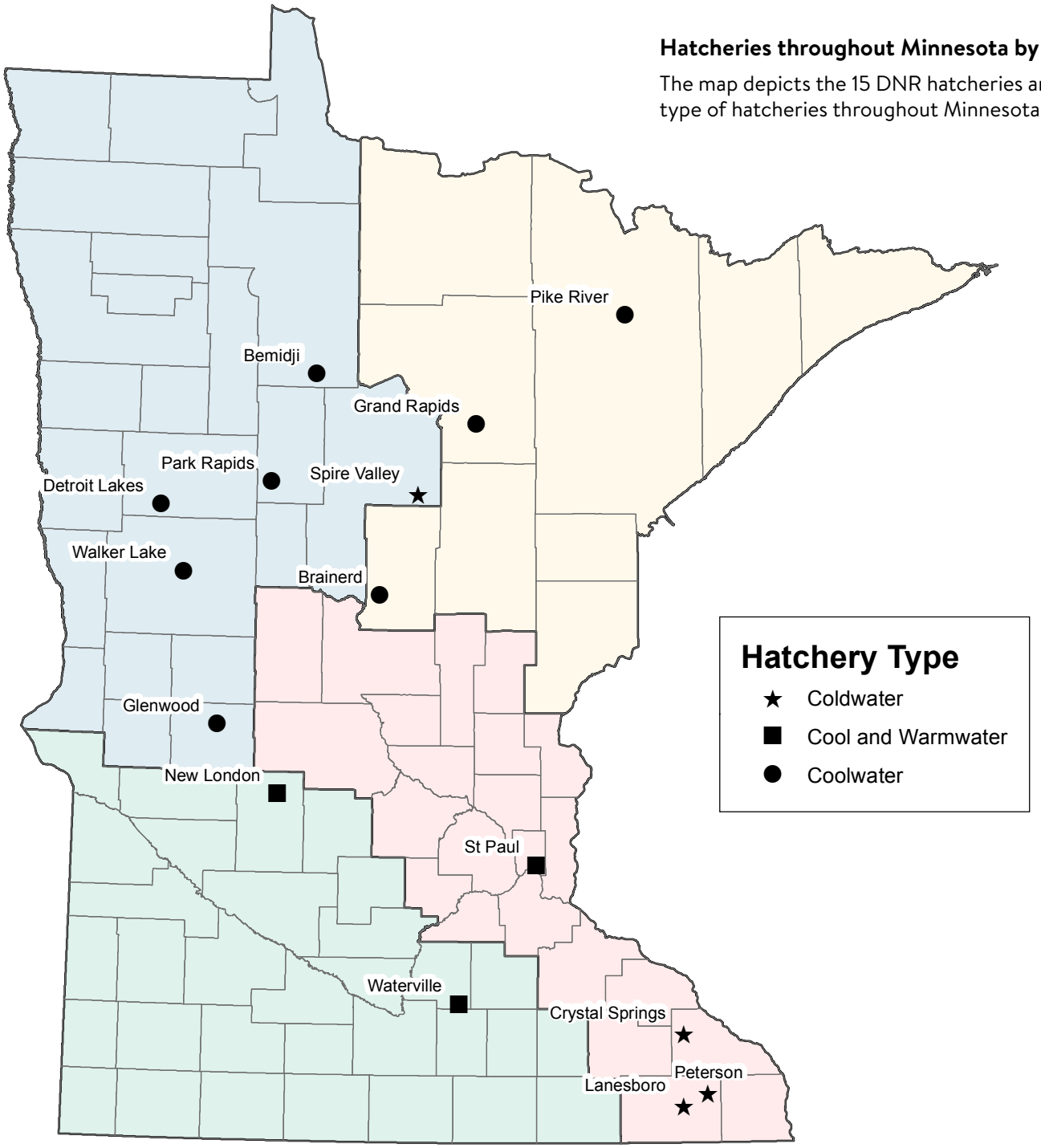
Feeding muskie fingerlings at Waterville Hatchery.

FISH HATCHERIES continued from page 25

Fishing contributes **$4.4 billion** annually to Minnesota's economy (Southwick Associates, 2018). Stocking hatchery-raised fish significantly enhances fishing in Minnesota, providing angling opportunities that would not otherwise exist.

Hatcheries throughout Minnesota by type

The map depicts the 15 DNR hatcheries and the type of hatcheries throughout Minnesota.



TREE NURSERY

Since 1933, Minnesota's State Forest Nursery has provided more than 1 billion healthy, native tree and shrub seedlings to support reforestation on public and private lands across the state. The State Forest Nursery is the only large-scale nursery providing bareroot stock in Minnesota. Currently, the nursery provides about four million seedlings annually; demand for seedlings exceeds the available supply, and that demand is increasing.

At the State Forest Nursery, many facilities are at or beyond their expected useful life and inadequate to meet current needs, let alone future demand. For example:

- The seed extraction equipment that DNR relies on to provide Minnesota-native seed for aerial seeding and tree seedling production is 30 years old. Breakdowns are increasingly common and parts are difficult to find.
- The seedling storage facility is too small and lacks reliable temperature regulation, sprinkler and drainage system, and electronic alerts and monitoring. Reliable, year-round cold storage is necessary to ensure seedling vitality and increase planting success.
- The seedling packing house and loading dock layout are too small and inefficient for current and future operational needs, creating barriers for effective workflow, safety, and accessibility.

Funding is needed for modernization and facility improvements to increase operational efficiency and meet seed extraction, seedling production, and seedling packing and storage needs now and into the future.

Nursery

Number of Assets	Current Replacement Value (CRV)	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032	Annual Total Investment Needed
1	$7,000,000	$840,000	$46,000	$280,000	$84,000	$410,000

BADOURA STATE FOREST NURSERY

The pine cone seed extractory. The equipment in the seed extractory is old, no longer maintainable, and must be replaced with modern, efficient equipment. The facility's HVAC and dust controls also require replacement.

Seedling packing, sorting and grading. This facility is too small and does not provide forklift access to the coolers for refrigerated storage of seedlings. These problems limit the DNR's ability to pack and ship tree seedlings across the state. This entire facility requires replacement.

DAMS

The DNR manages 311 dams with a replacement value of more than $122 million. Minnesota Rules define a dam as an artificial barrier that impounds more than 15 acre-feet of water and is greater than 6 feet high.

Repair, replacement and removal of dams have historically been funded through state general obligation bonding. Funds are distributed based on an integrated dam safety project priority list that the DNR develops and submits to the legislature every other year.

State-owned dams average 70 years old. Many DNR-managed dams were built in the 1930s under the Works Progress Administration. There is a growing need to rehabilitate these dams, as the majority are beyond their expected useful life.

HAZARD CLASSIFICATION OF DNR-MANAGED DAMS

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.

Hazard classification of DNR-managed dams

DNR Dams	Classification
2	**High Hazard** - Failure would probably cause loss of life or serious economic loss
12	**Significant Hazard** - Failure would cause limited economic loss, but no loss of life
297	**Low Hazard** - Failure would cause only minor losses

Dams

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
311	$122,310,000	$42,693,000	$183,000	$2,446,000	$4,269,000	$6,898,000

DAM CONDITION EXAMPLES

A wing wall of the Grindstone Dam spillway. The concrete is cracked completely through, increasing the likelihood of collapse and subsequent failure of the dam.

Warren Lake dam failure caused by overtopping. The spillway is undersized to safely pass incoming floodwaters.

WATER CONTROL STRUCTURES

DNR manages 1,554 structures that control water levels on state lands but do not meet the definition of a dam. The average expected useful life for a water control structure is 35 years.

The total annual investment needed to address water control structures is $9.8 million, which would provide sufficient funding to replace an average of 40 water control structures each year that have reached their end of life and catch up on decades of deferred maintenance on the others.

Water Control Structures

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
1,554	$233,100,000	$27,972,000	$350,000	$6,667,000	$2,797,000	$9,814,000

Minnesota wetlands and shallow lakes provide waterfowl breeding and migration habitat that benefits numerous species throughout the Mississippi Flyway.

WATER CONTROL STRUCTURE CONDITION EXAMPLES

Waterfowl hunting opportunities rely on effective habitat management. Water control structures also restore proper hydrology, store flood waters, block passage of invasive carp, support the growth of wild rice, and restore Minnesota's drained wetlands.

Silver Lake (Sibley County) water control structure in crisis condition. Note the control gate is held up by a stack of cinder blocks. A replacement for this structure is currently in design.

Perkins Lake water control structure failure. The earth embankment washed out and lake levels can no longer be managed.

MONITORING WELLS

Monitoring wells (also called observation wells) are placed in various aquifers across the state to measure groundwater levels and provide long-term groundwater level data. The resulting data are used for water supply planning by communities, industry, and agriculture. The data are also key to inform DNR water appropriation decisions, help determine water availability, and assist in mitigating conflicts over water use. The importance of monitoring well data was evident during the recent drought conditions in 2021 and 2022.

Maintenance of these wells is critical to meeting these needs. The typical expected useful life for a monitoring well is 25 years. The total annual investment needed is $1.2 million to maintain the assets and replace an average of 38 wells each year.

Monitoring Wells

Number of Assets	Current Replacement Value	Deferred Maintenance	Annual Preventive Maintenance	Annual Renewal and Replacement	Annual Deferred Maintenance Catch-Up (2023 - 2032)	Annual Total Investment Needed
1,130	$22,600,000	$2,712,00	$57,000	$904,000	$271,000	$1,232,000

MONITORING WELL EXAMPLES

Monitoring well on state forest land in Aitkin County in poor condition.

Monitoring well in need of replacement.

APPENDICES

APPENDIX A: DEFINITIONS

Active Owned Buildings

Owned buildings that are in regular use by DNR.

Adjusted Deferred Maintenance

The cost to repair or replace all Crisis and Poor components of a building, thus restoring the building to Fair condition or better. The Department of Administration uses this measure to report deferred maintenance for buildings across state agencies. The intent is to recognize that the state can't realistically afford to address all deferred maintenance across its building portfolio. In 2022, the adjusted deferred maintenance on DNR buildings was $79 million, while the full deferred maintenance was $155.4 million.

Current Replacement Value (CRV)

A calculated dollar amount of what the current cost is to replace an asset. CRV is based on industry standard costs for labor, materials and equipment. It does not include design and project management costs.

Deferred Maintenance

Costs accrued when funds have not been sufficient to complete necessary life-cycle maintenance and repairs. This measures the cost of all work needed to restore the asset to excellent condition.

Expected Useful Life (EUL)

The design life of an infrastructure asset: the number of years that an asset should be able to function satisfactorily before it requires major overhaul or replacement.

Facility Condition Assessment (FCA)

An industry term that describes the process of a qualified group of trained professionals performing an analysis of the condition of facilities that vary in age, design, construction methods, and materials.

Facility Condition Index (FCI)

A standardized measure of asset condition. FCI is calculated as the asset's deferred maintenance costs divided by its CRV. The result determines a rating of excellent, good, fair, poor, or crisis. For example, "excellent" condition means an asset has deferred maintenance of less than 5% of its CRV. A "crisis" rating means the asset has deferred maintenance of 50% or more of its CRV.

Inactive Owned Buildings

Buildings owned by DNR that are not in use, or planned for demolition or divestiture.

Operational Costs

Activities required for the use of the asset on a daily basis. Operational costs include janitorial services, grounds maintenance, security, telecom, and water, sewer, gas and electric consumption charges.

Preventive Maintenance

Activities performed proactively to maintain an asset in satisfactory condition. Generally a non-capital expenditure.

Renewal and Replacement

Costs to restore and modernize when the asset has reached the end of its EUL. Largely a function of obsolescence, change in use, or changes to codes and policies. Estimates are based on a percentage of CRV using average industry standards. This typically involves demolition and replacement of facilities, or major renovation and reconstruction. Renewal and replacement is a capital expenditure.

APPENDIX B: DATA SOURCES

Buildings and Miscellaneous Site Infrastructure

Division: Operations Services

Contact: Mark Lindquist, Operations Services Buildings and Sustainability Maintenance Manager

Database: Archibus

Water and Sewer Systems

Division: Operations Services

Contact: Jarrett Purdue, Operations Services Design and Construction Manager

Database: Archibus

Bridges

Division: Operations Services, Forestry, Parks and Trails, Fish and Wildlife

Contact: Jarrett Purdue, Operations Services Design and Construction Manager

Database: Cartegraph

Roads

Division: Operations Services, Forestry, Parks and Trails, Fish and Wildlife

Contact: Jarrett Purdue, Operations Services Design and Construction Manager; Andrew Arends, Forestry Deputy Director; Parks and Trails Resource and Asset Management Section Manager; Jamie Gangaware, Fish and Wildlife Operations and Development Supervisor

Database: GISWISKI, WAHMA, Archibus

Trails

Division: Forestry, Parks and Trails, Fish and Wildlife

Contact: Andrew Arends, Forestry Deputy Director; Parks and Trails Resource and Asset Management Section Manager; Jarrett Purdue, Operations Services Design and Construction Manager

Database: GIS

Public Water Accesses

Division: Parks and Trails, Fish and Wildlife, Forestry

Contact: Parks and Trails Resource and Asset Management Section Manager; Jamie Gangaware, Fish and Wildlife Operations and Development Supervisor, Andrew Arends, Forestry Deputy Director

Database: GIS, WAHMA

Small Craft Harbors, Marinas and Protected Accesses

Division: Parks and Trails, Operation Services

Contact: Parks and Trails Resource and Asset Management Section Manager; Jason Peterson, Operation Services Landscape Architecture Supervisor

Database: Historical construction information, recent assessment and feasibility studies

Campsites, Group Camps, Recreation Areas and Day-Use Areas

Division: Parks and Trails

Contact: Parks and Trails Resource and Asset Management Section Manager

Database: GIS, US eDirect datacubes

Hatcheries

Division: Fish and Wildlife

Contact: Paula Phelps, Fish and Wildlife Hatchery Program Manager

Data source: Hatcheries – Minnesota State Fish Hatcheries Information document for 2009 legislative. Expert knowledge Nurseries – Historical construction information. Hatchery Feasibility Study 2018

Nursery

Division: Forestry

Contact: Andrew Arends, Forestry Deputy Director

Dams

Division: Ecological and Water Resources

Contact: Jason Boyle, Ecological and Water Resources State Dam Safety Engineer

Water Control Structures

Division: Fish and Wildlife, Ecological and Water Resources

Contact: Jamie Gangaware, Fish and Wildlife Operations and Development Supervisor; Jason Boyle, Ecological and Water Resources State Dam Safety Engineer

Database: ArcGIS

Monitoring Wells

Division: Ecological and Water Resources

Contact: Joy Loughry; Ecological and Water Resources Water Monitoring and Surveys Unit Supervisor

Data system: Hydstra

APPENDIX C: ASSET DATA

Asset Category	Asset Type	Quantity	Units	Current Replacement Value (CRV)	Annual Preventive Maintenance Requirement	Annual Renewal and Replacement Requirement	Deferred Maintenance	Annual Total Required
Buildings	Buildings	2,924	each	$687,629,200	$4,469,590	$10,039,386	$77,132,943	$22,222,270
Buildings	Renewable energy systems	41	each	$6,077,246	$36,463	$243,090	$1,910,290	$470,582
Buildings	Site infrastructure—parking lot, fences, gates, sidewalks, utilities, etc.	NA	multiple	$38,220,000	$57,330	$1,911,000	$3,822,000	$2,350,530
Buildings Total				**$731,926,445**	**$4,563,383**	**$12,193,476**	**$82,865,233**	**$25,043,383**
Utilities	Water and wastewater systems	577	each	$96,000,000	$576,000	$2,400,000	$11,520,000	$4,128,000
Utilities Total		**577**		**$96,000,000**	**$576,000**	**$2,400,000**	**$11,520,000**	**$4,128,000**
Bridges	State Park and State Recreation Area (SRA) bridges	136	each	$17,272,000	$25,908	$345,440	$3,229,864	$694,334
Bridges	State Trail bridges	300	each	$69,000,000	$103,500	$1,380,000	$12,903,000	$2,773,800
Bridges	State Forest bridges	49	each	$8,232,000	$20,580	$164,640	$485,688	$233,789
Bridges	Wildlife Management Area (WMA) bridges	20	each	$1,280,000	$320,000	$25,600	$362,240	$381,824
Bridges	Other bridges	9	each	$1,278,000	$1,917	$25,560	$402,570	$67,734
Bridges Total		**514**		**$97,062,000**	**$471,905**	**$1,941,240**	**$17,383,362**	**$4,151,481**
Roads/Trails	Park roads (paved)	333	miles	$133,200,000	$199,800	$5,328,000	$43,956,000	$9,923,400
Roads/Trails	Park roads (gravel)	116	miles	$30,856,000	$46,284	$1,234,240	$10,182,480	$2,298,772
Roads/Trails	Forest roads (gravel)	2,386	miles	$634,676,000	$1,904,028	$25,387,040	$209,443,080	$48,235,376
Roads/Trails	Forest road culverts	3,298	each	$32,980,000	$98,940	$1,319,200	$3,957,600	$1,813,900
Roads/Trails	State trails (paved and hardened surfaces)	688	miles	$137,600,000	$206,400	$5,504,000	$45,408,000	$10,251,200
Roads/Trails	Trailheads	60	each	$2,400,000	$15,600	$96,000	$288,000	$140,400
Roads/Trails	Trail culverts	3,020	each	$9,513,000	$28,539	$380,520	$1,141,560	$523,215
Roads/Trails	Park bike trails (paved and hardened surfaces)	55	miles	$11,000,000	$55,000	$440,000	$3,630,000	$858,000
Roads/Trails	Park hiking trails	1,030	miles	$6,695,000	$10,043	$267,800	$803,400	$358,183
Roads/Trails	WMA roads (gravel)	1,820	miles	$484,120,000	$1,452,360	$19,364,800	$159,759,600	$36,793,120
Roads/Trails	WMA trails	832	miles	$5,408,000	$8,112	$216,320	$648,960	$289,328
Roads/Trails	WMA culverts	792	each	$7,920,000	$23,760	$316,800	$950,400	$435,600
Roads/Trails Total				**$1,496,368,000**	**$4,048,866**	**$59,854,720**	**$480,169,080**	**$111,920,494**
Public Water Access (PWA)	PWA—asphalt parking area	283	each	$78,447,600	$509,909	$3,137,904	$9,413,712	$4,589,185
Public Water Access	PWA—gravel parking area	1,097	each	$172,777,500	$1,123,054	$11,524,259	$20,733,300	$14,720,643
Public Water Access	PWA—natural parking area	309	each	$1,545,000	$10,043	$103,052	$185,400	$131,634
Public Water Access	Misc site amenities—fences, gates, sidewalks, etc.	NA	multiple	$11,035,000	$16,553	$551,750	$1,324,200	$700,723
Public Water Accesses Total		**1,689**		**$263,805,100**	**$1,659,558**	**$15,316,965**	**$31,656,612**	**$20,142,184**
Marina	Small craft harbors, marinas and protected accesses—not including buildings	10	each	$82,000,000	$533,000	$3,280,000	$20,500,000	$5,863,000
Marina Total		**10**		**$82,000,000**	**$533,000**	**$3,280,000**	**$20,500,000**	**$5,863,000**
Camps	Park campsites	4,579	each	$160,265,000	$1,041,723	$6,410,600	$27,084,785	$10,160,801
Camps	Park swimming areas	35	each	$15,400,000	$100,100	$616,000	$2,602,600	$976,360
Camps	Park group camps	107	each	$29,425,000	$191,263	$1,177,000	$4,972,825	$1,865,545
Camps	Forest rec areas—campsites	763	each	$15,260,000	$99,190	$610,400	$1,831,200	$892,710
Camps	Forest rec day use areas	29	each	$5,800,000	$37,700	$232,000	$696,000	$339,300
Camps Total		**5,513**		**$226,150,000**	**$1,469,975**	**$9,046,000**	**$37,187,410**	**$14,234,716**
Nursery	Nursery (equipment, infrastructure)	1	each	$7,000,000	$45,500	$280,000	$840,000	$409,500
Nursery Total		**1**		**$7,000,000**	**$45,500**	**$280,000**	**$840,000**	**$409,500**
Fish Hatcheries	Hatcheries (equipment, infrastructure)	15	each	$111,000,000	$721,500	$4,440,000	$22,200,000	$7,381,500
Fish Hatcheries Total		**15**		**$111,000,000**	**$721,500**	**$4,440,000**	**$22,200,000**	**$7,381,500**
Dams	Dams (high hazard)	2	each	$30,000,000	$45,000	$600,000	$15,000,000	$2,145,000
Dams	Dams (medium hazard)	12	each	$24,000,000	$36,000	$480,000	$7,200,000	$1,236,000
Dams	Dams (low hazard)	297	each	$68,310,000	$102,465	$1,366,200	$20,493,000	$3,517,965
Dams Total		**311**		**$122,310,000**	**$183,465**	**$2,446,200**	**$42,693,000**	**$6,898,965**
Water Control Structures	Water control structures (all types)	1,554	each	$233,100,000	$349,650	$6,666,660	$27,972,000	$9,813,510
Water Control Structures Total		1,554		$233,100,000	$349,650	$6,666,660	$27,972,000	$9,813,510
Wells	Monitoring wells	1,130	each	$22,600,000	$56,500	$904,000	$2,712,000	$1,231,700
Wells Total		**1,130**		**$22,600,000**	**$56,500**	**$904,000**	**$2,712,000**	**$1,231,700**
DNR Totals (rounded)				$3,489,320,000	$14,680,000	$118,770,000	$777,700,000	$211,220,000

DEPARTMENT OF NATURAL RESOURCES

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