Wisconsin's Capacity Development Program
for Public Drinking Water Systems

Report to the Governor
State Fiscal Years 2021-2023

Department of Natural Resources
Bureau of Drinking Water and Groundwater
dnr.wi.gov

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EXECUTIVE SUMMARY

The 1996 amendments to the Safe Drinking Water Act (SDWA) emphasize the management of public water systems effectively as a way to prevent contamination of water supplies and ensure the delivery of safe drinking water. Each state is required to have a strategy for helping its public water systems achieve and maintain "capacity," the ability to meet the SDWA's requirements and consistently provide safe drinking water. The strategy for assisting public water systems is called *Capacity Development*.

The goal of Wisconsin's Capacity Development Program is to help owners and operators of public drinking water systems, particularly small systems, improve their technical abilities, managerial skills, and financial viability to achieve the SDWA's public health protection objectives now and in the future. The Department of Natural Resources, Bureau of Drinking Water and Groundwater, is responsible for the program. As a result of Wisconsin's Capacity Development Strategy, the majority of Wisconsin's public water systems meet all the health-based standards for drinking water quality and consistently provide safe drinking water.

This report is compiled every three years for the Governor, all members of government, and the public, as required by the SDWA. The report covers the period from July 2021-June 2023 (state fiscal years 2021-2023). It will be made available to the public on DNR's Capacity Development webpage, http://dnr.wi.gov/topic/DrinkingWater/CapacityDevelopment.html.

Wisconsin's progress toward improving the capacity of public water systems during this period includes the following:

- During SFYs 2021-2023, more than 99% of the state's public water systems met all health-based standards for water quality Maximum Contaminant Levels (MCLs).
- Compliance rates for correcting significant deficiencies identified during sanitary surveys have consistently improved.
- The Safe Drinking Water Loan Program has funded 200 projects to improve public water systems over the past three years, funding 109 projects in SFY2023 alone. A complete list of the communities receiving assistance can be found in Appendix I, at the end of this report.
- Water quality data for the state's public water systems are available to the public on DNR's Drinking Water website, and the information is updated daily.
- The DNR has improved the online tools it provides to public water system owners and operators, to make their recordkeeping and reporting tasks easier.
- The DNR has enhanced and improved its Drinking Water System database to provide quick identification of problems or contaminants and enable a rapid response whenever corrections are needed. This included a multi-year complete overhaul of DNR's Drinking Water System database, which has resulted in improved data tracking and data management.
- The DNR has consistently reviewed and tailored DNR-sponsored technical assistance at small public drinking water systems, which has resulted in a continued decline in monitoring and reporting violations over the past two decades.
- In 2022, the DNR created a $10 million Well Compensation Grant Program to help private well owners address drinking water contamination in their wells.

- Wisconsin's 2019-21 biennial budget provided two full-time (FTE) researcher positions to focus on PFAS and other emerging contaminants, and $200,000 for emerging contaminants research.
- During this reporting period, multiple project staff were hired and onboarded to assist the Drinking Water Program with the massive increase in both loan and grant funding as a result of the Bipartisan Infrastructure Law Funding over the next five years.
- The DNR began reviewing and planning for updates to its *Capacity Development Strategy* during CYs 2020 and 2021. The updated *Strategy* was submitted to the EPA for review and approval in December 2022 and was approved in April of 2023.
    - The updated *Strategy* includes a summary of the DNR's efforts towards encouraging asset management at public water systems in WI, as is required under America's Water Infrastructure Act (AWIA) of 2018.
    - Other notable updates and highlights from the *Strategy* include DNR's efforts at climate change adaptation; risk and resiliency planning; cybersecurity; emergency response planning; supporting public water system partnerships; and addressing the challenges posed by emerging contaminants in Wisconsin. DNR's *Capacity Development Strategy* can be accessed on the DNR's Capacity Development webpage.
- Over the past 3 years, the DNR has funded 9 infrastructure projects at small, underserved, and disadvantaged systems utilizing funding from the EPA's *Small, Underserved, and Disadvantaged Communities Grant Program* (SUDC WIIN). These 9 projects have helped to resolve Maximum Contaminant Level violations and/or Treatment Technique violations at these small and disadvantaged systems. The SUDC WIIN grant funding ultimately helped these water systems to drill and construct new wells or to install treatment to ensure consumers had access to safe and reliable drinking water.
- During this reporting period, the DNR has been actively carrying out a PFAS sampling program at all of the state's Municipal Community (MC), Other-than-Municipal Community (OC), and Non-transient Noncommunity (NN) water systems to address contamination across the state with perfluoroalkyl and polyfluoroalkyl substances (PFAS). This initial monitoring continues through the end of CY2023. The DNR has already been working on setting up multiple funding programs to address PFAS contamination at these systems, and this will be a continued effort in the years to come.
    - Wisconsin established a drinking water standard for PFAS contaminants during 2022. About 1,950 of the state's public water systems are now required to test for PFAS and take corrective action if they exceed the Maximum Contaminant Level in the Safe Drinking Water rule.
    - More information can be found on the DNR's PFAS webpage, including a link to *Wisconsin's PFAS Action Plan*.
- During 2022, the DNR awarded almost $35 million through the Private Lead Service Line Replacement Program, allowing 57 communities around the state to replace lead services last year.

WHAT IS CAPACITY DEVELOPMENT?

Capacity Development is the process through which public water systems acquire and maintain adequate technical, managerial, and financial capabilities or 'capacity' to enable them to consistently provide safe drinking water. Capacity has three main components:

- **Technical capacity** includes an adequate water source and system infrastructure, along with the technical knowledge and ability to operate and maintain them.
- **Managerial capacity** includes effective organizational structure, ownership accountability, adequate staffing, and communication with the water system's customers and regulators.
- **Financial capacity** includes adequate revenue, credit worthiness, budgeting, and financial planning.

Wis. Admin Code NR 810.24 states:

"*Water system capacity. All new community and non-transient non-community water systems shall develop and maintain adequate financial, managerial and technical capacity to meet the requirements of this chapter and 42 USC 300f to 300j-26. New community and non-transient non-community water systems are defined as those constructed after September 1, 1999, or those that upgrade system type after that date to become a community or nontransient noncommunity water system.*"

Wisconsin Statutes 281.17(9) asserts:

"*The department may require owners of water systems to demonstrate the technical, managerial and financial capacity to comply with national primary drinking water regulations under 42 USC 300g-1 and may assist owners of water systems to develop that capacity*."

WISCONSIN'S CAPACITY DEVELOPMENT PROGRAM

The SDWA amendments place a strong emphasis on creative and innovative Capacity Development Strategies designed to meet each state's needs. Wisconsin's goal is to enhance, integrate, and improve its existing drinking water programs to ensure that all public water systems maintain adequate capacity and meet the requirements of the SDWA.

Wisconsin submitted its revised *Capacity Development Strategy* to the US Environmental Protection Agency (EPA) for review and approval in December 2022, and it was approved in April 2023. Wisconsin's Program is, in part, maintained through funds from the Drinking Water State Revolving Fund (DWSRF) that is authorized under the SDWA.

To meet federal requirements, Wisconsin's Program assists both new and existing public water systems.

- **New public water systems** must demonstrate adequate capacity before beginning to serve water to the public.
    - New systems submit a capacity evaluation to the DNR, with information about the water system design and ownership, water quality in the local area, proposed water use, potential sources of contamination, and the population to be served.
    - DNR approves new water systems after a review indicates that adequate capacity has been achieved. (Some of the state's smallest systems—Transient Noncommunity systems, are exempt from this requirement).
- **Existing public water systems** have their capacity evaluated regularly, and the state assists the systems that need help.

- The sanitary survey is DNR's primary tool for evaluating water system capacity. A sanitary survey is a detailed, on-site inspection of the water system that is designed to evaluate its capability for providing safe drinking water. Sanitary surveys are conducted at regular intervals.
- DNR uses a variety of tools to help maintain capacity at public water systems. These include technical assistance, loan and grant assistance, engineering review of construction plans, source water protection, groundwater research projects, operator certification, continuing education for operators, and the county contract program.

The SDWA amendments include initiatives to increase the assistance available to small public drinking water systems. These small systems—including schools, daycares, small businesses, factories, and mobile home parks—often do not have full-time, specialized staff, and providing drinking water is often not their primary business. As a result, they may have more difficulty complying with drinking water regulations. The most common barriers faced by small system owners and operators include:

- lack of technical knowledge about regulatory requirements and how to meet them;
- lack of financial planning and adequate management;
- lack of technological or IT knowledge or experience; and
- inability to finance necessary water system component and well upgrades.

There are many important areas where Capacity Development is used as a tool for encouraging improvements at public drinking water systems in Wisconsin, including:

- Identifying systems that need technical assistance
- Identifying needs for additional training for water system personnel
- Identifying water systems with noncompliance issues or continued violations
- Follow-up assistance to correct problems
- Identifying water systems in need of a certified operator
- Evaluating water quantity and quality
- Identifying needs for water system infrastructure improvements
- Locating funding for water system improvements
- Financial management and planning
- Identifying opportunities for cooperation between state agencies that will assist water systems
- Encouraging asset management programs as well as public water partnerships between water systems
- Identifying system consolidation opportunities, where mutually beneficial

More detail about Wisconsin's program, including the state's *Capacity Development Strategy*, is available on DNR's Capacity Development website. A copy of this *2023 State Capacity Development Program Report to the Governor* can also be found at this website.

WISCONSIN'S PUBLIC WATER SYSTEMS

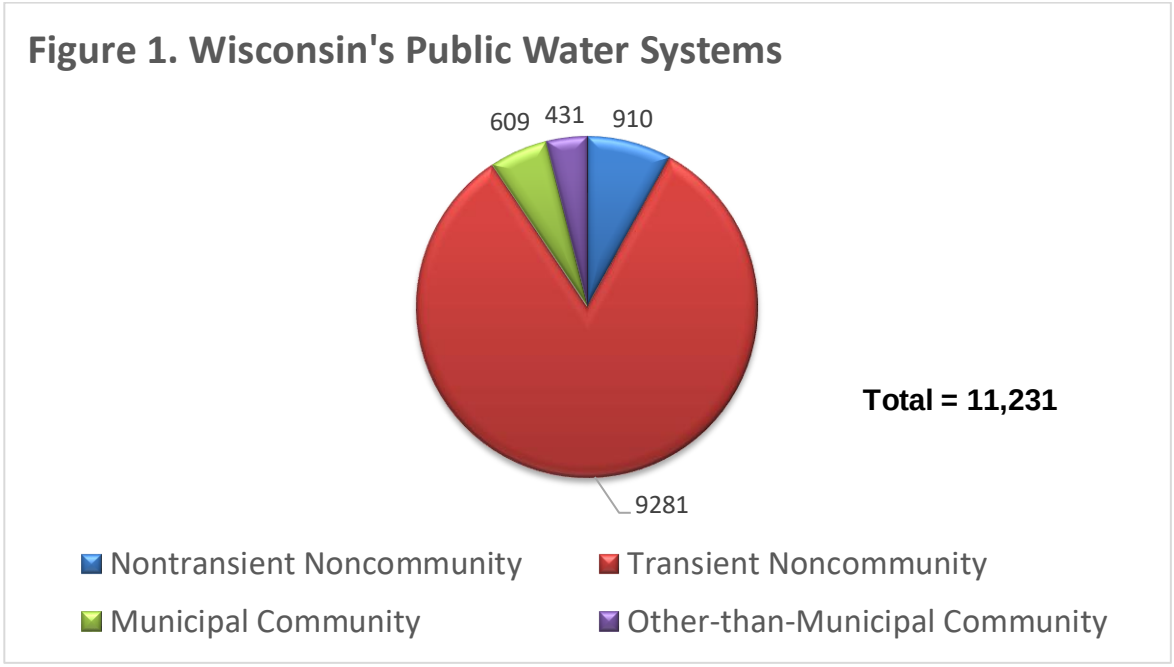
Wisconsin has more than 11,200 public water systems, the most of any state in the United States (note: this number does vary throughout the year). Public water systems are those that provide water for human

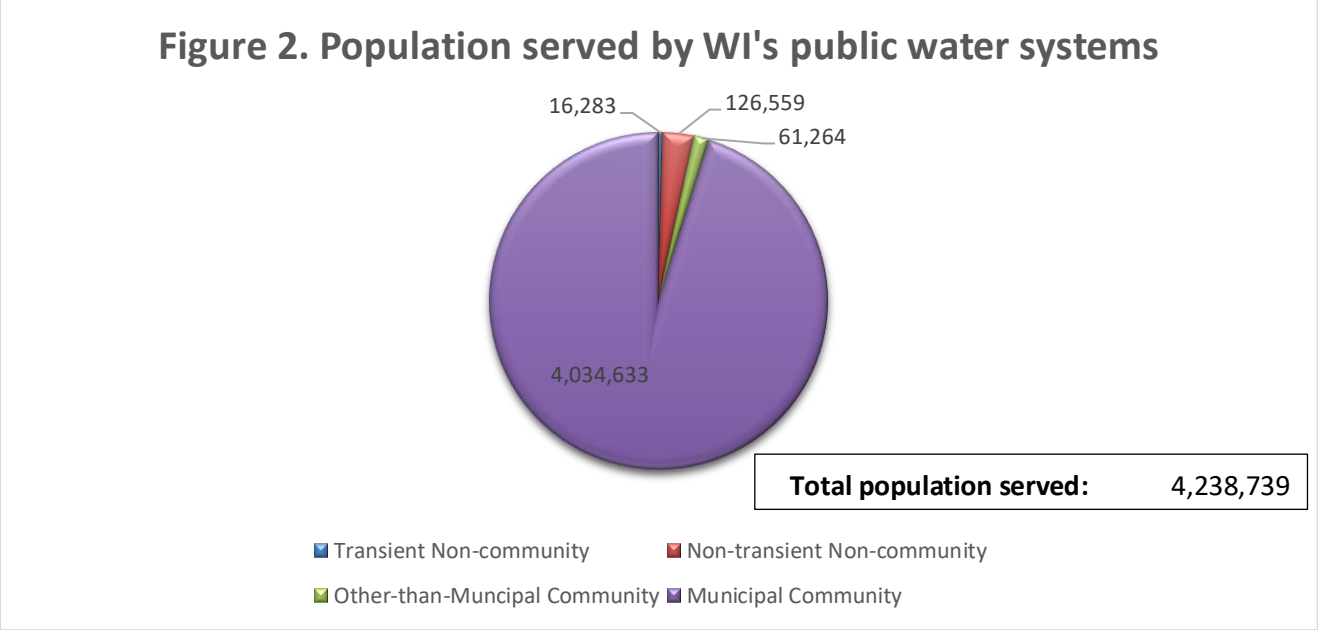
consumption to at least 15 service connections, or regularly serve at least 25 people. Federal and state drinking water regulations define four types of public water systems:

- **Community** water systems serve water to people where they live.
    - **Municipal Community** (MC) water systems are those owned by cities, villages, towns or sanitary districts. Milwaukee Waterworks is the state's largest municipal water system, serving almost 650,000 people. The smallest municipal systems in Wisconsin, by comparison, serve fewer than 100 people each.
    - **Other-than-Municipal Community** (OC) water systems operate from privately-owned wells and serve residents for at least six months of the year. These systems include mobile home parks, HOAs, apartment buildings, condominium complexes, and long-term care facilities.

- **Non-community** water systems serve water to people where they work, attend school, or gather for food or entertainment.
    - **Non-transient Non-community** (NN) water systems regularly serve at least 25 of the same people for six months per year or longer. They include schools, daycare centers, factories, dairies, and other businesses.
    - **Transient Non-community** (TN) water systems serve at least 25 people for 60 days of the year or longer. They include motels, restaurants, taverns, churches, parks, and campgrounds.

Figure 1 and Figure 2 below show the breakdown of the number of public water systems and the population served by these in Wisconsin. While most of the public water systems are Transient Non-community systems, the majority of the state's population is served by Municipal Community systems (Figure 2).

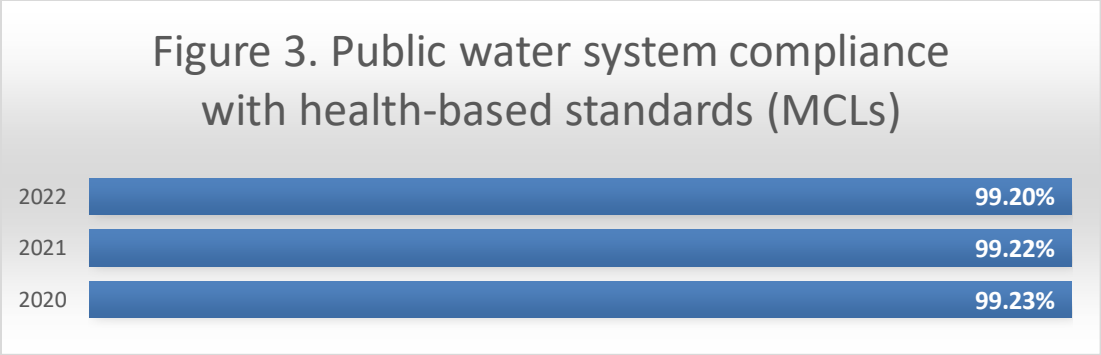




PROGRESS TOWARD IMPROVING THE TECHNICAL, MANAGERIAL AND FINANCIAL CAPACITY OF PUBLIC WATER SYSTEMS IN WISCONSIN

Improving the capacity of Wisconsin's public water systems is a continual process. The state has made progress by working with new systems to educate owners and operators about drinking water requirements, enhancing the tools used by DNR staff and water system owners and operators, tracking and measuring water system performance, increasing and targeting technical assistance, and promptly working with systems to correct any contaminant problems or violations that may occur. During the past three years, Wisconsin has made progress toward improving capacity in several areas, including:

- **Compliance rates** — Wisconsin's public water systems have an excellent record for consistently providing safe drinking water. In calendar years 2020-2022, more than 99% of the state's systems provided water that met all health-based quality standards for contaminants (Figure 3). DNR's *2022 Annual Drinking Water Report* contains additional details about water system performance and compliance. Water quality data for all the state's public water systems are available to the public on the DNR's website.



- **Sanitary surveys** — The sanitary survey is a critical tool for assessing and improving system capacity. Sanitary surveys provide comprehensive and accurate records of public drinking water systems, evaluate the operating conditions and adequacy of the systems, and determine if previous problems or deficiencies have been corrected. These in-depth inspections also give opportunities to offer recommendations and assistance that may help systems meet and maintain capacity. Sanitary surveys help the DNR target water systems that are, or may soon be, experiencing capacity shortcomings. Because public water systems are inspected at regular intervals, the sanitary survey can be used for measuring improvements over time. During the past three years, more than 8,048 sanitary surveys were completed by DNR and contracted county staff (Table 1).

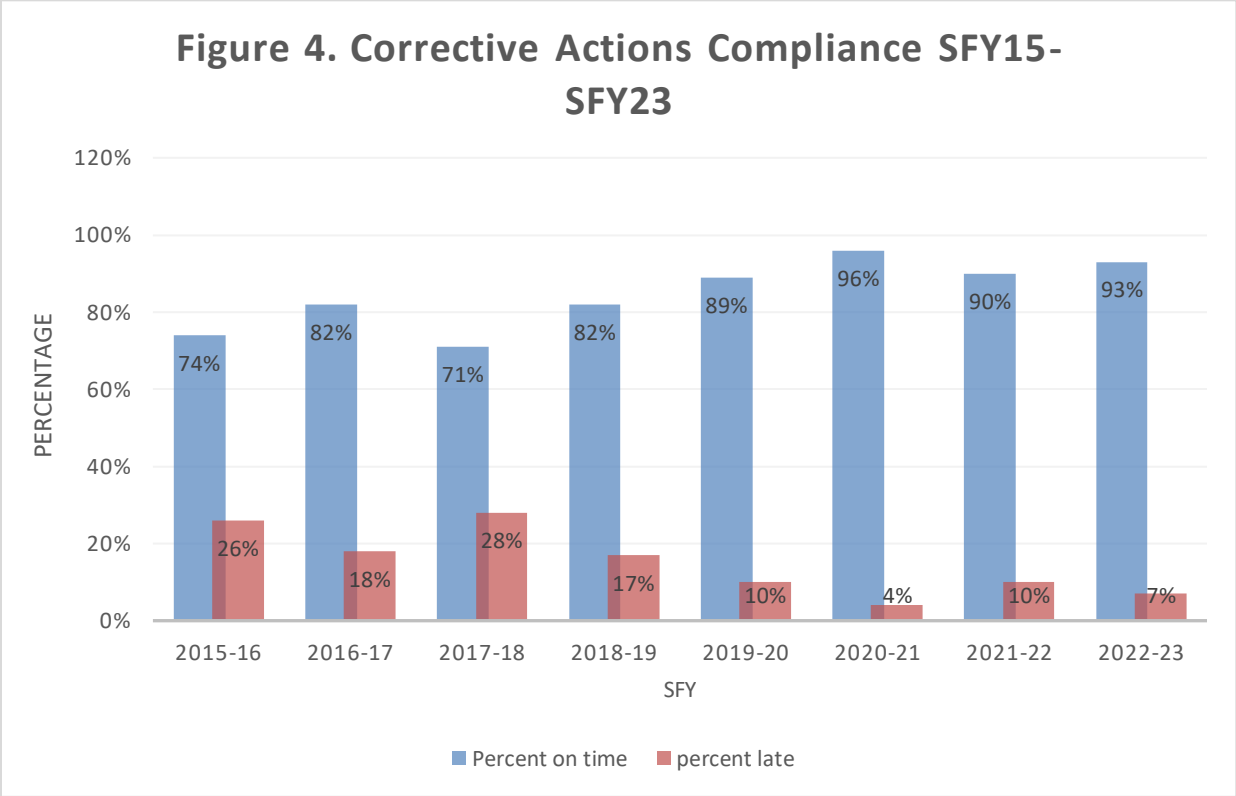
Table 1. Sanitary surveys completed during state fiscal years 2021-2023.

Water system type	State fiscal year		
	2020-21	2021-22	2022-23
Municipal community	241	197	193
Other-than-Municipal community	175	154	115
Non-transient Non-community	219	205	215
Transient Non-community	2435	2009	1890
Total	**2942**	**2547**	**2408**

Sanitary surveys allow DNR staff to corroborate in-person what is reported by water systems throughout the year, and they also serve as an opportunity to build rapport and communication between field staff and water system owner and operators.

The DNR has established timelines for correcting significant deficiencies identified during sanitary surveys. Significant deficiencies are any defects or malfunctions in a public water system that could cause health risks for people consuming the water. The DNR enhanced its Drinking Water System (DWS) water quality database to track deadlines and automatically measure compliance, including tracking formal corrective actions in the DWS since 2015. The data show that the percentage of public water systems that completed corrective actions for significant deficiencies by the agreed upon due dates has increased substantially since 2015 – see Figure 4 below. During the current reporting

period, the average of corrective actions not completed on time was 7%, a significant improvement over previous years. Close to 93% of corrective actions were completed on time during the final fiscal year of this reporting period, which demonstrates a high percentage of noncompliant water systems working towards maintaining or regaining capacity. Increased consistency and coordination between DNR field staff, enforcement staff, and central office staff has helped to improve compliance with corrective actions.



- **Plan reviews** — Drinking water regulations require the DNR to review and approve plans and specifications for all new construction and modifications of community water systems and some new non-community systems (for example, schools and systems with pumping capacity of 70 gallons per minute or higher) prior to construction. DNR Plan Review provides the initial assessment of a water system's ability to meet capacity and supply safe drinking water. During the previous three years, the DNR conducted over 3,300 engineering reviews (see Table 2 below).

Due to an unprecedented amount of funding from the Bipartisan Infrastructure Law this past year, DNR's Plan Review received a total of 171 projects submitted for BIL/SDWLP funding, with a total amount requested of $419,012,182. This includes 11 applications for 'emerging contaminants' (mainly PFAS-related projects), totaling $94,391,845; 40 applications for lead service line removal, totaling $73,377,800; and 120 applications for watermain installations and other facility improvement projects, totaling $251,242,537. This is a significant increase from the previous fiscal year of 51 applications, totaling $106,321,559. The Public Water Engineering section reviews all the Intents to

Apply (ITA)/ Priority Evaluation Ranking Formulars (PERFs), Eligibility Determinations, Evaluations of Completeness, Scoring, and plans and specifications submitted to the DNR for engineering approval.

The City of Waukesha is on schedule to begin drawing Lake Michigan water (scheduled for Fall 2023). The Public Water Engineering section has been involved with this project from the beginning, reviewing plans and specifications associated with this project and drafting the Engineering Report for *Water Supply Transition* for the City.

Table 2. Plan Review in the Public Water Engineering Section	
Type of review	**Total Reviews**
After-the-Fact Review	55
Chemical Dose/Type Change	35
Elevated Tank Painting	24
Engineering Report	66
Facility Maintenance, Rehabilitation, Replacement	419
New Facilities	210
New Wells (Construction)	74
Water Mains	1,913
Wellhead Protection Plans	39
Existing Well Rehabilitations	194
Corrosion Control Treatment Recommendation or Study	106
Other	209
Total	**3,344**

- **Safe Drinking Water Loan Program** (SDWLP) — Wisconsin cumulatively uses more than 75% of its federal DWSRF allotment to make low-interest loans and principal forgiveness for infrastructure improvements at eligible MC systems (Providing opportunities for principal forgiveness has been required by EPA since SFY 2011). The state executed loans for 200 projects during the past three years – see Table 3 below.

Table 3. Summary of SDWLP financial assistance agreements awarded during SFYs 2021-2023

State fiscal year	**Number of financial assistance agreements**	**Total amount of financial assistance agreements**
2021	36	$57,964,689
2022	55	$103,710,230
2023	109	$85,688,835
Total	**200**	**$247,363,754.00**

- A complete list of the communities receiving assistance can be found in Appendix I. Since this program began in 1998, the total amount of principal forgiveness and loans provided to Wisconsin communities is over $1 billion.
- The Water Infrastructure Fund Transfer Act (WIFTA), passed in October 2019, allowed states to transfer funds, as principal forgiveness, from their Clean Water State Revolving Fund to their Drinking Water State Revolving Fund for the purpose of funding lead-related DWSRF-eligible projects. Wisconsin was one of only nine states to make this transfer, which amounted to $63,809,549. This funding was then mixed with principal forgiveness that had been released from the 2017-18 Private LSL Replacement Program. The *WIFTA Private LSL Replacement Program* was run on a calendar year (CY) basis: in CY 2021, 60 awards totaling $33,314,937 were made; and in CY 2022, 77 awards totaling $41,755,686 were made (some of the CY 2022 awards were executed in early CY 2023).
- During this reporting period, the City of Waukesha received SDWLP funds for projects to address a MCL violation for radium.
- The 2019-2021 Biennial Budget included the authority to issue revenue bonds for the SDWLP. These revenue bonds will be issued under the EIF Revenue Bond Program created by the State in 2015. At the time the EIF Revenue Bond Program was created, the State worked extensively with EPA to ensure the proposed EIF Revenue Bond Program addressed federal requirements for both the SDWLP and the Clean Water Fund Program (CWFP). The Program Resolution for the EIF Revenue Bond Program includes provisions for the issuance of SDWLP revenue bonds and the tracking of those proceeds and repayments. Revenue bonds will be issued for the required state match on the annual Capitalization Grant for the SDWLP and will also result in the funding of additional SDWLP projects through the leveraging of assets within the SDWLP, similar to the current structure of the CWFP.

- **Drinking Water System database** — Wisconsin's Public Drinking Water System (DWS) has been acknowledged as one of the top drinking water data management systems in the nation. It is the primary tool for recording information and water quality data for all the state's public water systems. The DWS allows DNR to track compliance with regulatory requirements and upcoming deadlines, follow resolution of any violations, and promptly identify water quality and contaminant problems.
  - DNR staff rely on the DWS to monitor critical public health data from over 11,000 public water systems, allowing Department staff to follow up immediately on any significant threats or hazards. The DWS is also used by public water systems and the general public to monitor the quality of their own drinking water via the internet.

  - The DWS is unusually complex, as it integrates many of the Department's water-related programs. It was developed over thirty years ago in Oracle Forms and Reports, and this technology is no longer supported. Over a five-year span, the Public Drinking Water Data Team finished a complete overhaul of the DWS using modern, ASP.Net technology for

improved maintainability and functionality. This rewrite improved stability, productivity, and efficiency for users, and offers inclusion of many requested enhancements and bug fixes.

- The final product was completed in June 2023. Initial feedback shows it is a significant improvement over the older version. Users find the system easy to use, and work-flows easier to follow resulting in less time spent on data entry. Users can more easily determine upcoming work requirements and which water systems are under threat of missing compliance requirements. The reporting tool is also much more user-friendly and supports a more flexible transfer of information.

- The DWS rewrite is also key to supporting several program goals, as follows:

  - **Goal 1: Protect public health**- The DWS supports the implementation of the Safe Drinking Water Act in WI.
  - **Goal 2: Work culture is attractive and supports staff success** – The DWS is the main tool for running the Drinking Water and Groundwater Program. The newer platform is also more attractive and intuitive to future staff and programmers.
  - **Goal 3: Customer service through consistency and communication** – The DWS has consistency and communication tools built in. For example, automated reports and template letters assist staff in completing work tasks.
  - **Goal 4: Collaborate with partners** – Data from the DWS is used by other state agencies and partners, as well as researchers, other states, and national organizations.
  - **Goal 5**: **Better utilize technology** – This technology allows for the program to deliver excellent service with comparatively few staff. The DWS helps the Drinking Water Program do more with less.

- **Sanitary surveys and water quality monitoring at TN systems** — The DNR contracts with county health departments around the state to conduct sanitary surveys and monitor water quality at TN systems. This program began in 2004 with 13 counties and has grown significantly since its inception to 54 counties across the state. The county program now conducts sanitary surveys at and provides assistance to 6,897 TN systems. County health department staff, trained annually by the DNR, visit the water systems, collect all required samples, and ensure that samples are submitted on time. They also help TN system owners understand their monitoring results and address problems identified during sanitary surveys. Since this program started, monitoring and reporting violations at TN systems have declined, as have violations caused by failing to provide public notices and completing corrective actions.

  - In Fall 2022, the DNR began to offer grants to qualifying Transient Non-community and Non-transient Non-community public water systems to help owners address exceedances of MCLs and high levels of PFAS and other contaminants that exceed DHS and EPA health advisory levels. The expanded Well Compensation Program was made possible through a $10 million Federal American Rescue Plan Act (ARPA). The grant program, which is available

for 2 years or until funds have been exhausted, is helping well owners replace contaminated wells with new ones or install appropriate treatment. Staff in the DNR's Private Well Program and in the Public Water Program collaborate to provide corrective action recommendations for well owners applying for grants. Additionally, the availability of ARPA funding is helping the DNR move forward with a goal of having all Transient Non-community systems return to compliance with nitrate MCLs.

- **Technical assistance** — The DNR continuously offers technical assistance to public water systems to promote improving capacity. Some examples include:
    - The DNR contracts with the Wisconsin Rural Water Association (WRWA) to provide a technical assistance program for OC and NN systems. These are some of the state's smallest water systems; many do not have full-time drinking water staff and, as a result, they may have more difficulty complying with all the requirements. OC and NN systems that need help can get on-site assistance for dealing with operational problems, water quality monitoring, recordkeeping, funding assistance, or regulatory requirements. In 2013, DNR expanded this program, and now all the state's OC and NN systems also receive regular reminders of their water quality monitoring requirements and upcoming deadlines. In addition, new personnel—new samplers, owners, and operators—receive extra assistance, to help them learn about the requirements and correct sampling procedures. Monitoring and reporting violations have declined significantly at these systems since this effort began, allowing more small systems to avoid incurring violations and allowing DNR field staff to spend more time educating and providing technical assistance at water systems and less time on noncompliance issues.
        - DNR staff provide technical assistance (TA) directly, as needed, to help water system owners, managers, and operators understand and comply with all requirements. Individualized technical assistance is a successful method for improving system capacity and helping to maintain (or return to) compliance. Built in to DNR's *Capacity Development Strategy* is a focus on proactive Capacity Development—that is, supporting water systems through technical assistance, training, and, education to prevent noncompliance issues before they begin.
        - WRWA provides over 600 on-site technical assistance visits annually across the state of WI to small public drinking water systems. The drinking water systems are specifically targeted by DNR and WRWA based on a variety of factors, including new certified operator/sampler/system owner; new water system; noncompliance issues and system violations; water quality issues; vulnerable populations (i.e., schools, daycares, nursing homes, etc.); and general recalcitrance or lack of communication with the DNR. WRWA also provides telephone and email monitoring reminders to all of the state's 1,341 OTM and NN water systems multiple times per year. These monitoring reminders have helped reduce quarterly monitoring violations from over 2,000 per quarter (when the Small System TA contract began) to around 100 per quarter.

- **Operator Certification** — Federal and state drinking water regulations require that all MC, OC, and NN public water systems have and maintain certified operators, and the DNR administers

Wisconsin's Operator Certification Program (OpCert). During the past few years, DNR has made several important improvements to Wisconsin's program:

- Several operator certification exams have been updated to ensure that operators are tested on knowledge of the most current requirements and regulations.
- DNR, working with its training partners, continued to enhance the continuing education training for certified operators (continuing education is required for certification renewal). New training classes and curricula, designed to address topics of timely interest, have been added to the operator training programs. Classes were developed and instructed on topics that have recently experienced updated regulations, including the Lead and Copper Rule and lead and copper monitoring and sampling. Additional classes were developed on topics related to common noncompliance issues at Wisconsin's drinking water systems, including RTCR sampling; Level 1 and 2 Assessments; well disinfection; and bacteria sampling and monitoring. DNR's continuing education partner Moraine Park Technical College (MPTC) also developed a class called *A Day in the Life of a Small Water* Operator, to help give prospective operators and technical college students a feel for what it is like to work as an operator. The DNR meets quarterly with its continuing education providers—MPTC and Wisconsin Rural Water Association—to ensure that current training needs of operators around the state are being met.
- DNR utilizes an electronic system for recording operators' continuing education credits. In the past, paper credit slips were distributed after trainings, and operators had to save them until renewal time. Using the new system, credits are awarded right after training classes are completed. This has improved operators' ability to track their progress toward meeting the training requirements.
- DNR hosts a very popular online tool for reviewing operator certification records and credentials on its Operator Certification webpage-- the *Operator Certification Lookup* —— allows operators (along with the public) to check their certification status, renewal dates, certification subclasses, and continuing education credit history. The *Operator Certification Lookup* is by far, the most commonly used tool on the Operator Certification webpage with 22,170 views in SFY23. The *Operator Certification Lookup* is available here.
- Following the COVID-19 pandemic, and in part because of it, the DNR contracted with a third-party to offer its operator exams both virtually, via remote-proctor, and in smaller settings, at testing centers around the state. In early 2023, the Operator Certification Program decided to cancel the remote-proctor portion of the contract, due to continued and unresolved technical and technological issues examinees were experiencing. At present, the DNR has continued to offer two exam formats: testing center web-based on demand; and in-person paper exams several times during the year. The DNR decided to bring back paper exams due to overwhelming demand from operators around the state, and to improve its customer service. The Operator Certification Program continues to meet regularly and is currently evaluating whether or not it will continue its exam contract with its contractor Water Professionals International (WPI) after the contract term expires in February 2024. OpCert currently has multiple in-person exam dates scheduled for the end of 2023 and early 2024.

- The COVID-19 pandemic also provoked the DNR to work prudently to transition its contracted continuing education classes for small water system and municipal waterworks operators to a virtual format. Moving forward from the pandemic, the DNR has elected to continue with a hybrid format for its continuing education classes—that is, it now offers both virtual and in-person classes. Operator feedback on the hybrid format has been very positive.

- **Wellhead protection** — Wellhead protection is a preventive program designed to protect public water supply wells and reduce infrastructure costs and public health risk. The program strives to prevent contaminants from entering public water supply wells by supporting land management in areas that contribute water to the wells. The DNR has delineated wellhead protection areas and identified potential contamination sources for all the public water wells in the state and updates these inventories regularly. More information on wellhead protection can be found here.

- **Source water assessments** —Source water assessments are available for all public water systems in Wisconsin—they provide basic information about the origin of a system's drinking water and how it may be affected by potential sources of contamination. These assessments are monitored and updated regularly. Assessment results help to educate citizens about protecting sources of public drinking water and facilitate developing and implementing effective strategies for managing potential contamination sources. More information on source water protection can be found here.

- **Monitoring schedules and requirements** —The DNR notifies the state's MC, OC, and NN system owners and samplers about their annual water quality monitoring requirements twice per year. Preliminary notices, sent ahead of time, contain information on requirements for the upcoming year and estimated analysis costs, allowing water system owners to budget for their water quality monitoring. Final monitoring schedules are sent at the beginning of the year. Each packet contains the annual monitoring requirements for the water system, report forms, and information on certified analytical laboratories. New Maximum Contaminant Level (MCL) standards for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) became effective in Wisconsin's drinking water code NR 809 Wis. Admin. Code on August 1, 2022. Community and Non-transient Non-community drinking water systems are required to monitor for PFOA and PFOS under the revised NR 809 Wis. Admin. Code. The State Lab of Hygiene analyzes coliform bacteria samples for most public water systems at no cost, which helps ensure a high rate of compliance with monitoring requirements. Monitoring requirements for the state's public water systems are always available—to system personnel and the public—on DNR's website.

- **Water Infrastructure Improvements for the Nation Act - Small, Underserved, and Disadvantaged Communities Grant Program (WIIN SUDC)—**During SFY20, the DNR developed a grant program for Other-Than-Municipal Community (OTM) and Non-transient Non-community (NN) water systems, which qualified as small, disadvantaged, and underserved drinking water systems. These water systems had experienced a noteworthy level of noncompliance and economic hardship in complying with different state and federal regulations over time. Due to this, the DNR chose to focus on the most disadvantaged water systems and those with the greatest drinking

water health risks, when establishing its *WIIN Grant Program for Small & Disadvantaged Water Systems* and its funding prioritization process. Utilizing WIIN SUDC funding, the DNR has helped fund projects at 6 OCs, 2 NNs, and 1 disadvantaged and underserved MC system.

- **Emerging Contaminants (EC) in Small or Disadvantaged Communities Grant (SDC)—**Building off some of the successes of the WIIN SUDC program, the Drinking Water Program has been developing an *EC SDC Grant Program* for OTMs and NNs that exceed PFAS limits and that exceed other emerging contaminant health-based limits. The DNR has proposed to set aside $4 million of Bipartisan Infrastructure Law (BIL) funding in 2023 and 2024, specifically to help OTMs and non-profit NNs facing issues with emerging contaminants. PFAS and manganese will be the first targeted EC, with other potential EC in years 3, 4, and 5 of BIL funding. More information on Wisconsin's BIL funding allocations can be found here.

- **Public Water Partnerships**—The DNR encourages both formal and informal water system partnerships around the state of Wisconsin. Beginning in 2018, the DNR began incentivizing documented public water system partnerships through its state Safe Drinking Water Loan Program, by offering five points towards principal forgiveness on loans. The DNR now offers 10 incentive points for projects where the applicant has executed a new agreement between two or more water systems to improve technical, managerial, and/or financial capacity. The municipality must submit proof of a public water partnership by June 30th of each year in conjunction with a SDWLP application to receive the bonus points. DNR's Capacity Development Program reviews all partnership submittals to determine point eligibility. Criteria for awarding public water system partnership points is available on the DNR's website. The DNR has been an active proponent of water system partnerships at training workshops as well as through its technical assistance providers. Water system partnerships provide an additional tool which can be used to increase the overall TMF capacity of water systems small and large. Whether the partnership involves sharing equipment and tools or staff and other resources, it can be one of the most useful resources for a water system to maintain capacity. Certified operator conferences and continuing education classes serve as apt opportunities for operators to initiate conversations regarding potential partnerships with other water systems.

- **Lead and Copper Rule Implementation—**During this reporting period, the DNR implemented several processes and policies to support Lead and Copper Rule implementation in WI, including:
  - Continuing to work through the corrosion control re-optimization process for all large public water systems (12), which are those serving greater than 50,000 people;
  - A new Lead and Copper Section was created in 2022. Its creation was prompted by new requirements for controlling lead and copper in drinking water. Water systems have a 2024 deadline to meet the initial lead service line inventory requirements. Systems also need to prepare for more rule changes that the EPA will add in the near future. Fortunately, systems have new funding opportunities through the BIL. Lead and Copper Section staff assist public water systems with understanding and meeting the drinking water requirements and also help

water systems take advantage of federal infrastructure funding available specifically to address these issues.
  - Documenting the service line, premise plumbing, and non-existence of treatment devices at active Other-than-Municipal Community water system has been an ongoing effort.
  - Wisconsin is one of four states partnering with the U.S. Environmental Protection Agency to "accelerate" lead service line removal. The Bipartisan Infrastructure Law provides dedicated funding to replace 100% of lead service lines –water pipes made of lead that contaminate drinking water. The Lead Service Line Replacement (LSLR) Accelerators will provide technical assistance services to aid communities in Wisconsin in support of tasks that will help accelerate their identification and replacement. The accelerator will build on existing efforts and provide additional guidance to up to 40 water systems across the four partner states in 2023. The goal is to fast-track the removal and replacement of lead service lines while eliminating technical, operational, legal, and financial barriers.
  - Using BIL funding to offer free lead service line inventory technical assistance to public water systems.
  - Developing a lead service line inventory tracking database for tracking lead service line inventories.

- **Proactive Capacity Development**—The DNR has seen evidence and results since the implementation of the Capacity Development Program that *proactive* Capacity Development—through technical assistance, operator certification, continuing education and training, primacy guidance, communication with external stakeholders, the SDWLP, public water partnerships, and asset management—is more effective than reactive Capacity Development. With this in mind, the DNR continues to use the aforementioned tools and practices to lead proactive Capacity Development measures throughout Wisconsin and, in doing so, reduce noncompliance and violations on the front end.

ENCOURAGING ASSET MANAGEMENT AT PUBLIC WATER SYSTEMS

Under America's Water Infrastructure Act of 2018 (AWIA), several amendments were made to the Safe Drinking Water Act. One of those amendments, under Section 2012 of AWIA, established the following:

> *"States must amend their state capacity development strategies to include a description of how the state will encourage the development of asset management plans that include best practices, training, technical assistance and other activities to help with implementation of those plans. States also must include an update of these activities to encourage asset management practices in the Governor's report."*

To that end, the Wisconsin DNR has taken multiple steps and implemented policies to encourage asset management planning at water systems throughout the state.

Following is a list of actions the DNR has taken to **encourage asset management (AM) planning**—note—this list is not all-inclusive:

- Created and published an Asset Management webpage for public access, which includes tools, resources, guides, trainings, FAQs, and a broad introduction to the practice and benefits of asset management for drinking water systems. The website includes an introduction to the topic of asset criticality, taking into account the concepts of *risk* and *consequence of failure.*
    - The AM website also provides information on how to create a system asset inventory.
- Over the past few years, the DNR has partnered with Wisconsin Rural Water Association (WRWA), the Environmental Finance Center Network (EFCN), Great Lakes Community Action Partnership (GLCAP), and the Public Service Commission (PSC) on multiple asset management trainings and classes around the state of WI, with specific emphasis on small drinking water systems. The DNR continues to request that its TA and continuing ed partners WRWA, GLCAP, and MPTC provide training and special emphasis on asset management.
- The DNR continues to include asset management plan incentives in its annual Intended Use Plan (IUP). Water systems may submit new or updated asset management plans to earn additional overall project scoring points on their SDWLP application:
    - 20 additional points are granted for projects where the applicant has submitted a new asset management plan (AMP) for its drinking water utility. Minimum requirements for AMPs are available on the program website. AMPs must be submitted by June 30th of each year in conjunction with a SDWLP application. DNR's Capacity Development Program reviews and approves all AMPs.
    - 15 points will be granted for projects where the applicant has submitted a revised/updated AMP for its drinking water utility. Updated plans must be submitted by June 30th of each year in conjunction with a SDWLP application. DNR's Capacity Development Program reviews and approves all revised/updated AMPs. Criteria for updated plans is available on the AM webpage. Municipalities are encouraged to update their asset management plans annually, as AM is an ongoing process, with no end date.
        - The SDWLP incentivization has drawn interest from municipalities around Wisconsin. This interest has manifested in an increase in seminars and trainings on asset management at annual water industry conferences and throughout the year. It has also led to an increase in the use of asset management software and mapping technologies at Wisconsin's water utilities.
- Over the past few years, DNR staff have presented on the topic of asset management at various conferences, which has greatly increased interest and communication in the public sector on developing AMPs
- The Department has promoted instruction on the topic of asset management in both its municipal waterworks and small water system operator continuing education courses, which are paid for by federal Set-Aside funding
- In 2022, the DNR submitted a revised *Capacity Development Strategy* to the EPA, which included a new section on AM. This was done both as a requirement of 2018's America's Water Infrastructure Act (AWIA) and because the DNR fully supports the practice of asset management

at WI's public water systems. AM is another tool in DNR's *proactive* Capacity Development toolbox.

- During SFY20 & 21, the DNR partnered with Moraine Park Technical College (MPTC) on the development of four online training modules in Capacity Development—specifically, the modules expand on the topics of utility management, financial planning, and asset management. The training modules are catered towards local governing bodies and local decisionmakers, and they aim to increase the understanding and dialogue between decisionmakers and water operators. Asset management and analysis-based planning are central to each of these training modules. The first two modules launched in December 2020, the third launched in June 2021, and the fourth was launched in January 2022.
    - These four training modules aim to give local decisionmakers a sound foundation in asset management. The modules can be accessed on the Capacity Development webpage and directly through MPTC's website.
    - The DNR is incentivizing certified operators to take the trainings by offering continuing-education credits, one per module completed. The DNR also offers additional SDWLP incentive for utility boards that have at minimum 50% of their members take the trainings. Those utilities who meet this goal are eligible for an additional 10 project scoring points. More information on this incentive can be found on the Bureau of Community Financial Assistance's webpage.
- DNR staff regularly attend asset management trainings and talks at water industry conferences, and the topic of AM has become a mainstay at all of DNR's meetings with its TA partners.
- DNR's Capacity Development and Operator Certification Coordinator has implemented a process of fast-tracking quality asset management trainings, webinars, and courses for continuing-education credit approval for Wisconsin's drinking water operators. Many of these trainings are approved for both Municipal Waterworks as well as Small Water System operators, as asset management is considered a beneficial practice at all sizes of water system.
    - Trainings for drinking water operators can be found on the Operator Certification Program's Training Calendar, which is updated regularly with new trainings.

Per Section 2012 of AWIA, the *Five Core Question Framework of Asset Management* is as follows:

Five Core Question Framework – Asset Management

• What is the current state of the utility's assets?
• What is the utility's required "sustainable" level-of-service?
• Which assets are critical to sustained performance?
• What are the utility's best "minimum life-cycle cost" capital improvement plan and operations and maintenance strategies?
• What is the utility's best long-term financing strategy?

The DNR commits to ensuring that this *Five Core Question Framework* is an integral part of all of the asset management policy and activities the DNR supports as a part of its *Capacity Development Strategy*.

The DNR's Bureau of Drinking Water and Groundwater strongly and enthusiastically supports and promotes the practice of asset management at public drinking water systems across Wisconsin, and it continues to proactively identify novel opportunities for the promotion of asset management. Like an asset management plan that requires commitment, enhancement, and regular updating over time, so too does the Department commit to improving and updating its strategies to promote and encourage asset management over time.

EFFECTIVENESS OF WISCONSIN'S CAPACITY DEVELOPMENT STRATEGY

Wisconsin's *Capacity Development Strategy* continues to be effective—this is evidenced in the DNR's Annual Drinking Water Report, and is further exhibited by the information provided in this report. New public water systems demonstrate adequate technical, managerial, and financial capacity before beginning to serve water to the public, and existing systems continue to build and improve their capacity, both with the help of DNR staff and DNR's technical assistance providers. Wisconsin's emphasis on enhancing the tools for assessing system capacity, measuring system performance, acting quickly to correct violations and contaminant problems, and assisting systems in need has helped the state's water systems improve capacity over time. The vast majority of Wisconsin's 11,200+ public water systems met all the health-based standards for drinking water quality and consistently provided safe drinking water this past year. Capacity Development is an ongoing process to ensure adequate capacity at all water systems in the state, and the Wisconsin DNR is committed to this goal. Each year, the Department places special emphasis on public water systems which fail to provide safe drinking water, with an ultimate goal of 100% of the state's water systems providing safe drinking water to the public. This is a goal the DNR will continue to strive for into the future.

APPENDIX I. Financial assistance awarded to Wisconsin communities through the Safe Drinking Water Loan Program during state fiscal years 2021-2023.

Municipality	SFY Funded	FAA Total	Current Non-SRF Funding	Total Project Cost
Alma Center, Village of	2021	$217,003.00	$0.00	$217,003.00
Amery, City of	2021	$1,066,194.00	$2,505,143.00	$3,571,337.00
Antigo, City of	2021	$455,000.00	$0.00	$455,000.00
Baraboo, City of	2021	$99,000.00	$0.00	$99,000.00
Bonduel, Village of	2021	$45,000.00	$0.00	$45,000.00
Bruce, Village of	2021	$856,312.00	$1,630,415.00	$2,486,727.00
Cambria, Village of	2021	$1,316,333.00	$0.00	$1,316,333.00
Cassville, Village of	2021	$584,803.00	$1,078,691.00	$1,663,494.00
Columbus, City of	2021	$145,000.00	$0.00	$145,000.00
Eau Claire, City of	2021	$847,600.00	$0.00	$847,600.00
Grantsburg, Village of	2021	$925,886.00	$0.00	$925,886.00
Green Bay, City of	2021	$1,411,635.00	$0.00	$1,411,635.00
Iron River SD #1	2021	$481,121.00	$804,707.00	$1,285,828.00
Janesville, City of	2021	$1,950,000.00	$0.00	$1,950,000.00
Kenosha, City of	2021	$1,950,000.00	$0.00	$1,950,000.00
Ladysmith, City of	2021	$873,690.00	$1,071,025.00	$1,944,715.00
Lake Mills, City of	2021	$280,000.00	$0.00	$280,000.00
Lone Rock, Village of	2021	$462,939.00	$732,500.00	$1,195,439.00
Maiden Rock, Village of	2021	$400,719.00	$607,139.00	$1,007,858.00
Manitowoc, City of	2021	$1,568,445.00	$0.00	$1,568,445.00
Mayville, City of	2021	$960,000.00	$0.00	$960,000.00
Menasha, City of	2021	$408,000.00	$0.00	$408,000.00
Menasha, City of	2021	$997,383.00	$60,375.00	$1,057,758.00
Milwaukee, City of	2021	$27,323,813.00	$1,530,527.00	$28,854,340.00
Mosinee, City of	2021	$125,000.00	$0.00	$125,000.00
Muscoda, Village of	2021	$556,080.00	$883,500.00	$1,439,580.00
Nekoosa, City of	2021	$1,318,380.00	$2,369,662.00	$3,688,042.00

Reeseville, Village of	2021	$318,651.00	$463,643.00	$782,294.00
Shawano, City of	2021	$1,250,950.00	$16,087.00	$1,267,037.00
Shelby Sanitary District #2	2021	$714,964.00	$0.00	$714,964.00
Somers, Village of	2021	$4,456,404.00	$0.00	$4,456,404.00
Sun Prairie, City of	2021	$562,500.00	$0.00	$562,500.00
Thorp, City of	2021	$561,415.00	$0.00	$561,415.00
Two Rivers, City of	2021	$1,352,967.00	$2,718,267.00	$4,071,234.00
Waupaca, City of	2021	$160,090.00	$0.00	$160,090.00
Wausaukee, Village of	2021	$961,412.00	$500,000.00	$1,461,412.00
	SFY 2021 Totals:	$57,964,689.00		$74,936,370.00

Municipality	**SFY Funded**	**FAA Total**	**Current Non-SRF Funding**	**Total Project Cost**
Ashland, City of	2022	$287,919.00	$0.00	$287,919.00
Bangor, Village of	2022	$2,325,404.00	$4,208,780.00	$6,534,184.00
Beaver Dam, City of	2022	$243,038.00	$93,850.00	$336,888.00
Berlin, City of	2022	$33,750.00	$3,546,643.00	$3,580,393.00
Bloomer, City of	2022	$85,049.00	$239,404.00	$324,453.00
Cadott, Village of	2022	$65,000.00	$0.00	$65,000.00
Campbellsport, Village of	2022	$795,076.00	$2,209,893.00	$3,004,969.00
Cross Plains, Village of	2022	$4,324,964.00	$0.00	$4,324,964.00
Cumberland, City of	2022	$1,911,257.00	$1,390,341.00	$3,301,598.00
Eau Claire, City of	2022	$650,000.00	$0.00	$650,000.00
Edgerton, City of	2022	$373,410.00	$1,425,523.00	$1,798,933.00
Elmwood, Village of	2022	$529,650.00	$1,144,075.00	$1,673,725.00
Fond du Lac, City of	2022	$312,000.00	$0.00	$312,000.00
Fox Point, Village of	2022	$31,994.00	$3,142,941.00	$3,174,935.00
Glendale, City of	2022	$198,692.00	$45,345.00	$244,037.00

Hartford, City of	2022	$100,000.00	$0.00	$100,000.00
Hurley, City of	2022	$220,000.00	$0.00	$220,000.00
Jefferson, City of	2022	$275,000.00	$0.00	$275,000.00
Juneau, City of	2022	$75,000.00	$0.00	$75,000.00
Kaukauna, City of	2022	$435,038.00	$2,197,045.00	$2,632,083.00
Kiel, City of	2022	$176,453.00	$0.00	$176,453.00
Kohler, Village of	2022	$1,993,565.00	$8,689,295.00	$10,682,860.00
Marshfield, City of	2022	$616,500.00	$0.00	$616,500.00
Mayville, City of	2022	$712,801.00	$0.00	$712,801.00
Menomonee Falls, Village of	2022	$1,136,530.00	$785,782.00	$1,922,312.00
Milton, City of	2022	$550,000.00	$0.00	$550,000.00
Milwaukee, City of	2022	$24,022,175.00	$1,225,202.00	$25,247,377.00
Milwaukee, City of	2022	$3,800,000.00	$2,516,336.00	$6,316,336.00
Nekoosa, City of	2022	$129,175.00	$97,574.00	$226,749.00
New Holstein, City of	2022	$530,023.00	$53,800.00	$583,823.00
New Lisbon, City of	2022	$8,827.00	$0.00	$8,827.00
North Fond Du Lac, Village of	2022	$90,000.00	$0.00	$90,000.00
Oconomowoc, City of	2022	$207,500.00	$0.00	$207,500.00
Oshkosh, City of	2022	$280,000.00	$0.00	$280,000.00
Osseo, City of	2022	$6,260,622.00	$0.00	$6,260,622.00
Osseo, City of	2022	$90,896.00	$0.00	$90,896.00
Platteville, City of	2022	$57,000.00	$0.00	$57,000.00
Racine, City of	2022	$1,610,120.00	$0.00	$1,610,120.00
Ripon, City of	2022	$100,000.00	$0.00	$100,000.00
Rothschild, Village of	2022	$251,280.00	$0.00	$251,280.00
Saint Francis, City of	2022	$50,000.00	$0.00	$50,000.00
Schofield, City of	2022	$25,000.00	$0.00	$25,000.00
Shawano, City of	2022	$1,517,335.00	$0.00	$1,517,335.00
Sheboygan, City of	2022	$39,430,018.00	$11,550,000.00	$50,980,018.00
Sheboygan, City of	2022	$285,000.00	$226,580.00	$511,580.00

South Wayne, Village of	2022	$663,861.00	$1,000,000.00	$1,663,861.00
Stoughton, City of	2022	$3,561,281.00	$1,634,275.00	$5,195,556.00
Thorp, City of	2022	$67,500.00	$0.00	$67,500.00
Two Rivers, City of	2022	$310,338.00	$1,596,140.00	$1,906,478.00
Waterloo, City of	2022	$237,041.00	$0.00	$237,041.00
Watertown, City of	2022	$694,938.00	$0.00	$694,938.00
Wausau, City of	2022	$320,000.00	$0.00	$320,000.00
West Allis, City of	2022	$294,210.00	$719,435.00	$1,013,645.00
Whitefish Bay, Village of	2022	$205,000.00	$0.00	$205,000.00
Wisconsin Rapids, City of	2022	$153,000.00	$0.00	$153,000.00
	SFY 2022 Totals:	$103,710,230.00		$153,448,489.00

Municipality	**SFY Funded**	**FAA Total**	**Current Non-SRF Funding**	**Total Project Cost**
Abbotsford, City of	2023	$863,775.00	$512,487.00	$1,376,262.00
Antigo, City of	2023	$2,727,273.00	$483,336.00	$3,210,609.00
Antigo, City of	2023	$357,500.00	$0.00	$357,500.00
Appleton, City of	2023	$505,000.00	$0.00	$505,000.00
Arena, Village of	2023	$3,147,567.00	$0.00	$3,147,567.00
Arlington, City of	2023	$2,036,114.00	$0.00	$2,036,114.00
Ashland, City of	2023	$211,505.00	$0.00	$211,505.00
Augusta, City of	2023	$3,138,981.00	$1,830,918.00	$4,969,899.00
Baraboo, City of	2023	$222,500.00	$0.00	$222,500.00
Beaver Dam, City of	2023	$300,000.00	$275,800.00	$575,800.00
Beloit, City of	2023	$450,000.00	$0.00	$450,000.00
Berlin, City of	2023	$744,492.00	$644,618.00	$1,389,110.00
Blue Mounds, Village of	2023	$1,340,444.00	$0.00	$1,340,444.00
Boscobel, City of	2023	$36,500.00	$0.00	$36,500.00
Bruce, Village of	2023	$1,009,043.00	$1,633,220.00	$2,642,263.00

Cedarburg, City of	2023	$600,000.00	$14,700.00	$614,700.00
Cobb, Village of	2023	$407,756.00	$740,500.00	$1,148,256.00
Columbus, City of	2023	$160,000.00	$0.00	$160,000.00
Denmark, Village of	2023	$2,724,627.00	$0.00	$2,724,627.00
Dorchester, Village of	2023	$593,906.00	$1,001,768.00	$1,595,674.00
Edgerton, City of	2023	$645,730.00	$0.00	$645,730.00
Elkhorn, City of	2023	$560,000.00	$0.00	$560,000.00
Elmwood, Village of	2023	$250,000.00	$0.00	$250,000.00
Evansville, City Of	2023	$58,000.00	$0.00	$58,000.00
Fennimore, City of	2023	$1,178,508.00	$1,551,803.00	$2,730,311.00
Fond du Lac, City of	2023	$312,000.00	$0.00	$312,000.00
Green Bay, City of	2023	$1,586,950.00	$0.00	$1,586,950.00
Green Lake, City of	2023	$969,991.00	$823,461.00	$1,793,452.00
Greenwood, City of	2023	$885,636.00	$160,000.00	$1,045,636.00
Gresham, Village of	2023	$820,978.00	$1,247,121.00	$2,068,099.00
Hartford, City of	2023	$786,000.00	$96,323.00	$882,323.00
Haugen, Village of	2023	$565,455.00	$2,900.00	$568,355.00
Hilbert, Village of	2023	$54,350.00	$15,800.00	$70,150.00
Hurley, City of	2023	$347,376.00	$3,345.00	$350,721.00
Hurley, City of	2023	$250,000.00	$0.00	$250,000.00
Iron Ridge, Village of	2023	$30,725.00	$0.00	$30,725.00
Janesville, City of	2023	$3,240,000.00	$0.00	$3,240,000.00
Jefferson, City of	2023	$285,000.00	$0.00	$285,000.00
Juneau, City of	2023	$555,000.00	$0.00	$555,000.00
Kaukauna, City of	2023	$1,147,437.00	$0.00	$1,147,437.00
Kendall, Village of	2023	$981,557.00	$1,084,118.00	$2,065,675.00
Kenosha, City of	2023	$270,000.00	$0.00	$270,000.00
Kenosha, City of	2023	$2,154,125.00	$0.00	$2,154,125.00
Kewaunee, City of	2023	$78,000.00	$0.00	$78,000.00
Kiel, City of	2023	$448,245.00	$888,055.00	$1,336,300.00
Kimberly, Village of	2023	$931,000.00	$1,597,998.00	$2,528,998.00

La Farge, Village of	2023	$493,932.00	$1,097,500.00	$1,591,432.00
Ladysmith, City of	2023	$399,301.00	$473,415.00	$872,716.00
Lake Mills, City of	2023	$190,860.00	$0.00	$190,860.00
Lena, Village of	2023	$613,441.00	$974,800.00	$1,588,241.00
Manitowoc, City of	2023	$1,200,000.00	$0.00	$1,200,000.00
Markesan, City of	2023	$160,000.00	$1,457,850.00	$1,617,850.00
Markesan, City of	2023	$1,316,711.00	$1,586,765.00	$2,903,476.00
Marshfield, City of	2023	$675,000.00	$0.00	$675,000.00
Menasha, City of	2023	$971,263.00	$68,137.00	$1,039,400.00
Menasha, City of	2023	$285,000.00	$0.00	$285,000.00
Merrimac, Village of	2023	$612,681.00	$0.00	$612,681.00
Milton, City of	2023	$300,000.00	$0.00	$300,000.00
Milwaukee, City of	2023	$4,517,063.00	$3,609,215.00	$8,126,278.00
Montreal, City of	2023	$180,000.00	$0.00	$180,000.00
Mosinee, City of	2023	$62,500.00	$0.00	$62,500.00
Mount Horeb, Village of	2023	$1,566,000.00	$0.00	$1,566,000.00
Neenah, City of	2023	$1,200,000.00	$23,210.00	$1,223,210.00
New Glarus, Village of	2023	$165,500.00	$0.00	$165,500.00
New Holstein, City of	2023	$919,890.00	$906,519.00	$1,826,409.00
New Richmond, City of	2023	$122,500.00	$0.00	$122,500.00
North Fond Du Lac, Village of	2023	$90,000.00	$0.00	$90,000.00
Oakfield, Village of	2023	$460,340.00	$2,531,159.00	$2,991,499.00
Oconomowoc, City of	2023	$600,000.00	$0.00	$600,000.00
Omro, City of	2023	$78,000.00	$0.00	$78,000.00
Oregon, Village of	2023	$286,908.00	$45,925.00	$332,833.00
Oshkosh, City of	2023	$382,500.00	$0.00	$382,500.00
Platteville, City of	2023	$94,102.00	$0.00	$94,102.00
Port Washington, City of	2023	$205,000.00	$0.00	$205,000.00
Prairie du Chien, City of	2023	$52,500.00	$0.00	$52,500.00
Prairie du Chien, City of	2023	$423,900.00	$127,160.00	$551,060.00

Racine, City of	2023	$1,104,000.00	$0.00	$1,104,000.00
Rice Lake, City of	2023	$1,755,863.00	$1,032,000.00	$2,787,863.00
Ridgeway, Village of	2023	$553,294.00	$1,125,221.00	$1,678,515.00
Ripon, City of	2023	$150,000.00	$0.00	$150,000.00
Ripon, City of	2023	$743,324.00	$1,765,061.00	$2,508,385.00
Saint Francis, City of	2023	$50,000.00	$0.00	$50,000.00
Sauk City, Village of	2023	$185,000.00	$0.00	$185,000.00
Schofield, City of	2023	$67,500.00	$95,800.00	$163,300.00
Shawano, City of	2023	$488,400.00	$0.00	$488,400.00
Sheboygan, City of	2023	$405,000.00	$0.00	$405,000.00
Shorewood, Village of	2023	$405,000.00	$0.00	$405,000.00
South Milwaukee, City of	2023	$75,000.00	$7,250.00	$82,250.00
Stoughton, City of	2023	$1,659,096.00	$247,053.00	$1,906,149.00
Sturgeon Bay, City of	2023	$250,000.00	$0.00	$250,000.00
Sturgeon Bay, City of	2023	$750,000.00	$0.00	$750,000.00
Sun Prairie, City of	2023	$572,694.00	$8,155.00	$580,849.00
Thorp, City of	2023	$896,892.00	$1,146,615.00	$2,043,507.00
Thorp, City of	2023	$72,500.00	$13,500.00	$86,000.00
Two Rivers, City of	2023	$207,500.00	$1,920,934.00	$2,128,434.00
Two Rivers, City of	2023	$508,537.00	$3,282,811.00	$3,791,348.00
Viroqua, City of	2023	$202,500.00	$0.00	$202,500.00
Waterloo, City of	2023	$194,982.00	$0.00	$194,982.00
Watertown, City of	2023	$2,500,000.00	$0.00	$2,500,000.00
Waupaca, City of	2023	$64,640.00	$0.00	$64,640.00
Waupaca, City of	2023	$280,000.00	$47,800.00	$327,800.00
Wausau, City of	2023	$270,000.00	$0.00	$270,000.00
Wausau, City of	2023	$577,718.00	$0.00	$577,718.00
West Allis, City of	2023	$346,300.00	$615,475.00	$961,775.00
Weyauwega, City of	2023	$2,368,246.00	$1,000,000.00	$3,368,246.00
Whitefish Bay, Village of	2023	$111,961.00	$1,589,100.00	$1,701,061.00

Whitehall, City of	2023	$1,376,852.00	$2,360,831.00	$3,737,683.00
Winneconne, Village of	2023	$5,753,318.00	$0.00	$5,753,318.00
Winter, Village of	2023	$1,148,780.00	$1,278,341.00	$2,427,121.00
	SFY 2023 Totals:	$85,688,835.00		$130,734,708.00

APPENDIX II. List of abbreviations.

DNR	Wisconsin Department of Natural Resources
DWS	Drinking Water System database
DWSRF	Drinking Water State Revolving Fund
EPA	US Environmental Protection Agency
MC	Municipal Community water system
NN	Non-transient Non-community water system
OC or OTM	Other-than-Municipal Community water system
WIIN	Water Infrastructure Improvements for the Nation Act
SDWA	Safe Drinking Water Act
SDWLP	Safe Drinking Water Loan Program
SFY	State fiscal year
OpCert	Operator Certification Program
TN	Transient Non-community water system
AM	asset management
AMP	asset management plan
AWIA	America's Water Infrastructure Act

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington DC 20240.

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