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Reserve Capacity Assessment Needs Assessment

Report

Village of

Lannon, WI

September 2022

STRAND ASSOCIATES®

Report for

Village of Lannon, Wisconsin

Reserve Capacity Assessment Needs Assessment

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SECTION 1
INTRODUCTION

1.01 INTRODUCTION

One of the most important functions of local government is to provide for the planning, design, construction, and maintenance of public facilities and infrastructure. Along with this function comes the responsibility to finance these improvements in a manner that is fiscally sound and within the statutory authority granted to local municipalities. Wisconsin cities, villages, and towns have multiple financial mechanisms available to pay for anticipated capital costs associated with infrastructure improvements. One financial method used by many municipalities is the special assessment. In contrast with impact fees, special assessments allow municipalities a method to help pay for existing infrastructure deficiencies as well as improvements that benefit the municipality's infrastructure as a whole.

The purpose of this needs assessment report is to calculate and provide background information necessary in order to implement a Reserve Capacity Assessment (RCA) for the Village of Lannon's (Village) water system improvements.

The RCA is intended to amend and supersede the special assessment authorized by Resolution No. 2020-11 dated November 9, 2020, and to be used in all land development situations or new connections to the municipal water system where the Village Water Impact Fee Ordinance, Chapter 63 would have been applicable before its termination. The RCA is the result of past policy decisions made by the Village Board and based on the document "Report on Proposed Reserve Capacity Assessments for Water System Improvements for the Village of Lannon," September 2022, by Trilogy Consulting, LLC.

1.02 IMPETUS AND AUTHORITY FOR REPORT

In accordance with Wisconsin State Statutes §66.0703(4), "a report on the special assessment proposal shall be made before the exercise of any powers granted by Subchapter VII of Chapter 66 of the State Statutes." The intent of this report is to satisfy the requirements of Wisconsin State Statutes §66.0703(4) and §66.0703(5). The following is a brief summary of the history of bacteriological contamination of private wells in the Village.

More than 20 years ago, the Village did not have municipal sewer or water. Village residents had private wells (not built to modern standards) and septic systems, which allowed wastewater to leak into the ground. Several private wells were contaminated by bacteria at that time because the septic systems would discharge onto the bedrock, which is high in elevation, and quickly flow toward private wells. This issue was so prevalent that the Wisconsin Department of Natural Resources (WDNR) created a special well casing area on December 31, 1958, that acknowledged the contamination potential relative to the high bedrock elevation. This special casing area requires that cement grouted casing be required for the top 100 feet of the well depth. The intent of the casing is to eliminate holes in the bedrock where contaminants traveling on top of the bedrock could easily penetrate to the shallow aquifer. However, wells installed before 1958 (most likely) do not satisfy this requirement.

The Village contemplated installing both sewer and water in the 1990s to alleviate the issue of private wells with bacteriological contamination, but the cost was overly burdensome. The WDNR allowed the Village to first install Village-wide sewer in order to see whether that would fix the issue. That sewer system was installed in 1997 with United States Department of Agriculture (USDA) funding. Residents were required to abandon their septic systems and connect to the municipal sanitary sewer.

The drinking water quality seemed to improve, and the issue was largely forgotten until the Lannon Elementary School (School) tested positive for *E. coli* in fall 2018. The well could not be cleaned, despite several attempts by qualified professionals. The WDNR issued a Notice of Violation to the School on January 15, 2019, citing the following:

> "Section NR 809.30, Wis. Adm. Code - Distribution system microbiological contaminant maximum contaminant levels. The following are the maximum contaminant levels for coliform bacteria applicable to public water systems.
>
> (1) MCL for Escherichia coli (*E. coli*).
>
> (a) The MCL for *E. coli* is exceeded if any of the following occurs:
>
> 1. The public (in this case the Lannon Elementary School is considered public because the private well serves a public population of students) water system has an *E. coli* positive repeat sample following a total coliform positive routine sample.
>
> From September 11, 2018 to November 18, 2018, 24 water samples were collected from the School water system. Of the 24 samples collected, 14 were total coliform positive and 4 were *E. coli* positive. *E. coli* positive source water samples from the School well confirm "fecally contaminated source water" and corrective action is required per s. NR 809.327 (2)(b), Wis. Adm. Code."

The Notice of Violation also cited several Findings of Fact, listed in the following, that implicated not only that the contamination issue was related to bacteria in the shallow aquifer, which impacts additional surrounding private wells, but also that the well casing was deficient, and that the remedy is the extension of municipal water to the School.

> "9. From September 26, 2018 to October 31, 2018, water samples from private domestic wells in the vicinity of the School were tested by Waukesha County Department of Health. Of the 56 samples collected, 33 were total coliform positive and 12 were *E. coli* positive.
>
> 10. The School is in a known area with shallow bedrock that is susceptible to surficial contamination.
>
> 11. The School is within the Special Well Casing Area "Village of Lannon - Area 59b" which requires new potable well construction to have at least 100 feet of cement grouted casing due to the potential for bacterial contamination.
>
> 12. WUWN ES799 (the School's well) has 17 feet of cement grouted casing with no description of annular seal material from 17 feet to 87 feet where the 6-inch steel well casing is set in limestone. WUWN ES799 does not conform to the Special Well Casing Area requirements.
>
> 13. WUWN ES799 is located in the School's basement and may pose a sanitary hazard to safe drinking water. The department has not allowed well terminations in basements since April 10, 1953."

The WDNR, the School, and the Village concluded that the only reasonable solution was for the School to request an extension of municipal water service to the School. The Village declared a public health emergency at the October 8, 2018, Village Board Meeting to extend water service to the School. Municipal water was extended, and the School was connected during summer 2019. The School

indicated that it continued to test its well until the point of connection to the municipal water system; the private well continued to test positive for bacteria.

The Notice of Violation letter also cited deficient well casing and construction as contributing factors to the positive coliform and *E. coli* tests. In addition to designating a Special Well Casing Area in 1958, the WDNR has conducted updates to codes that govern the construction of private wells in: April 1953, October 1975, October 1981, January 1991, October 1994, October 2014, and new revisions proposed for May 2020. Therefore, the majority of private wells in the Village are likely out of compliance with current codes.

Therefore, the Village Board has pursued the extension of municipal water to several existing. The Village commenced the expansion of the municipal water system in 2021 with assistance from the USDA Rural Development (RD) loan and grant. The Village Board has most recently adopted Tax Increment Finance District (TID) project plans in August 2022 that include several water main extensions and the installation of new source and supply. This RCA is intended to establish a uniform fee for connections to the municipal water system that will be applicable through the build-out of the water system.

1.03 AUTHORITY TO IMPOSE SPECIAL ASSESSMENTS UNDER WISCONSIN STATUTES

Wisconsin Statute §66.0703(1)(a) states that "as a complete alternative to all other methods provided by law, any city, town or village may, by resolution of its governing body, levy and collect special assessments upon property in a limited and determinable area for special benefits conferred upon the property by any municipal work or improvement; and may provide for the payment of all or any part of the cost of the work or improvement out of the proceeds of the special assessments." This statute allows for special assessments to be used on a wide variety of public improvement projects.

Wisconsin Statute §66.0701(2) states that "an ordinance under this section may use police power as the basis for a special assessment." The Village intends to use police power as the basis for this special assessment. Police powers are defined in Wisconsin Statute §62.11(5), which says

> "the (common) council shall have the management and control of the city property, finances, highways, navigable waters, and the public service, and shall have power to act for the government and good order of the city, for its commercial benefit, and for the health, safety, and welfare of the public, and may carry out its powers by license, regulation, suppression, borrowing of money, tax levy, appropriation, fine, imprisonment, confiscation, and other necessary or convenient means. The powers hereby conferred shall be in addition to all other grants and shall be limited only by express language."

In short, the special assessment enacted using police powers must be used for "the health, safety, and welfare of the public."

Wisconsin Statute §66.0703(1)(b) further expands on police powers, stating that "if an assessment represents an exercise of the police power, the assessment shall be upon a reasonable basis as determined by the governing body of the city, town or village." According to Wisconsin Statute §66.0703(14), "under a police power type special assessment, the benefits do not need to be precisely determined, however, they must exist and must be special as opposed to benefits

conferred on an entire community (*Berkvan v. City of Glendale*).” Benefits are special to each property in this assessment, as the improvement to each property is the provision of safe, reliable, municipal drinking water, which alleviates the concern over property owner’s consuming private well water contaminated with *E.coli* and coliform bacteria. This benefit is special to the properties within the special assessment area as they will receive municipal water service, whereas areas existing outside of the special assessment area will not receive municipal water services. This project promotes the health, safety, and welfare of the public as defined in Wisconsin Statute §62.11(5).

1.04 ABBREVIATIONS AND DEFINITIONS

CCI	Construction Cost Index
CSM	Certified Survey Map
E. Coli	*Escherichia coli*
EMC	Equivalent Meter Connection
ENR	Engineering News Record
gpm	gallons per minute
LF	linear foot
OPC	Opinion of Probable Cost
PSCW	Public Service Commission of Wisconsin
PUD	planned unit development
RCA	Reserve Capacity Assessment
RD	Rural Development
ROW	right-of-way
School	Lannon Elementary School
TID	Tax Increment Finance District
USDA	United States Department of Agriculture
Village	Village of Lannon
WDNR	Wisconsin Department of Natural Resources

SECTION 2
PROPOSED WATER SYSTEM IMPROVEMENTS

2.01 INTRODUCTION

Figure 2.01-1 shows a map of the current distribution system with the locations of the water facilities. The Village provides potable water pumping, storage, and distribution to areas served by the Village's distribution system. The Village water supply system currently consists of two water sources (wells), storage (ground level reservoir and hydropneumatic tank), pumping (two redundant booster pumps), and a mode of transmission (water mains).

The water main ranges from 6 to 16 inches in diameter. Table 2.02-1 summarizes the quantity of water main in the distribution system as reported to the Public Service Commission of Wisconsin (PSCW) in the 2020 Annual Report. The 2021 USDA-RD Water System Expansion Project water mains are not included in this table as "existing" because these water mains are to be incorporated into the RCA.

Water Main Diameter (inches)	Length (feet)	Percentage of Total
6	90	0.5%
8	5,102	26.5%
12	11,950	62.1%
16	2,116	11.0%
Total	**19,258**	**100.0%**

Table 2.01-1 Existing Distribution System Water Main Inventory (2020)

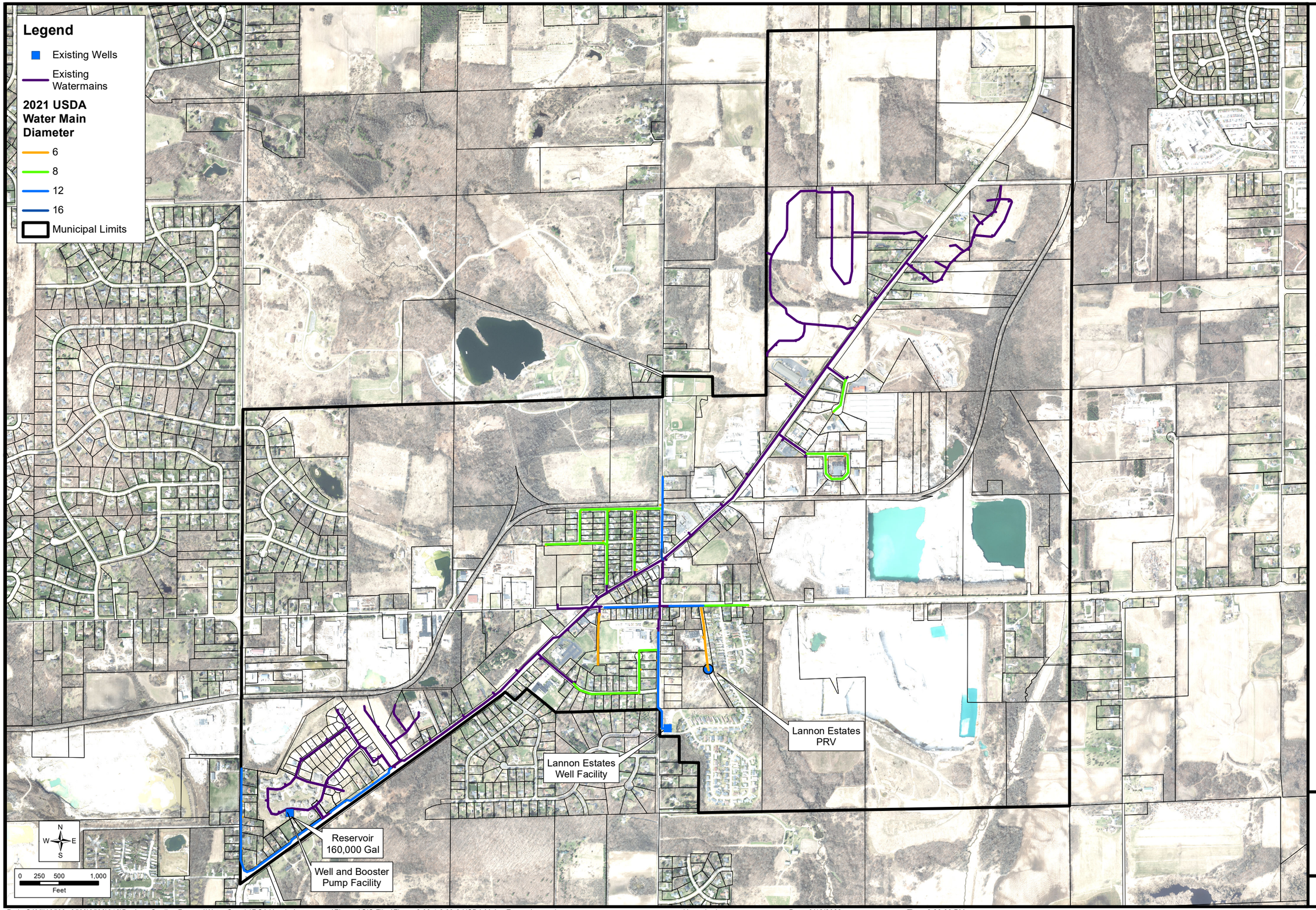
2.02 DESCRIPTION OF EXISTING WATER SYSTEM FACILITIES

Figure 2.02-1 displays a map of the water system and the year that a project was constructed. If the project is not yet constructed, it is identified as "future" or "proposed." Developer contributed projects are also shown in Figure 2.02-1 but are not included in the assessment. Water system improvements implemented before 2021 are not intended to be included in the RCA, as they were paid for primarily through impact fees. However, a description of those water mains is still included in the following to provide a more comprehensive description of the entire system.

A. 1997 and 2008 Water Mains and Well Station No. 1 (Main Street and Bid Alternates)

The Village began to install water mains in 1997 in conjunction with a Village-wide sanitary sewer installation project. Two segments of water main were installed on Main Street before the Village Board halted the project. The water mains were left in the ground, dry, with no source of municipal water.

Whispering Ridge Condominiums were developed in the mid-2000s on the southwest end of the Village. In 2006, the developer built Well Station No. 1, referred to as "Whispering Ridge Wellhouse," that included a 300-gallon-per-minute (gpm) shallow well (WDNR approved maximum pumping rate of 250 gpm), a 160,000 gallon concrete reservoir, and two 550 gpm booster pumps. This well station was built to municipal standards and dedicated to the Village.



EXISTING WATER SYSTEM

WATER SYSTEM IMPROVEMENTS
VILLAGE OF LANNON
WAUKESHA COUNTY, WISCONSIN

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FIGURE 2.02-1
3500.016

Path: S:\MIL\3500--3599\3500\016\Designs-Studies-Reports\Water Supply\RCA Needs Assessment\Figures\GIS Files\Figure 2.03-1 2.02-3 USDA Mains Expansion.mxd User: thadn Date: 9/12/2022 Time: 2:26:28 PM

In 2008, the Village installed additional water mains along Main Street that were necessary to connect the well facility to the water mains previously installed in 1997. The Village extended the water mains north along Main Street to areas of the Village for which development seemed imminent at the time. Furthermore, Main Street was scheduled for road reconstruction by the state (as it was State Highway 74 at the time) and the Village authorized several bid alternates to extend water main into the side streets and out of the Main Street right of way (ROW).

The 1997 and 2008 water system improvements are summarized in Table 2.02-2.

These improvements were intended to be paid for through impact fees and were accounted for in the 2008, 2018, and 2020 Impact Fee Studies and the correlating Village Board Resolutions that adopted the associated impact fee schedule.

Facility Name	Description	Year Installed
Main Street Transmission Main	12-inch Main (2,400 LF); 16-inch Main (1,200 LF)	1997
Well Station No. 1 (Whispering Ridge)	250 gpm shallow well; 160,000-gallon reservoir, two 550 gpm booster pumps	2006
Second Source and Water Tower Property Acquisition, Engineering, and Administration	Funds used to acquire and conduct original design of second source and water tower. Bids were not awarded.	2008
Main Street Local Water Main	8-inch Equivalent Main (5,120 LF)	2008
Main Street Transmission Main Oversizing (Backbone)	12-inch Main (5,120 LF)	2008
Water Main Extensions (2008 Bid Alternates)	8-inch Equivalent Main (3,200 LF) from 2008 Water Main Bid Alternates	2008

LF=linear foot

Table 2.02-2 1997 and 2008 Water System Improvements

C. 2019 Elementary School Water Mains

The Village extended 697 feet of 16-inch and 121 feet of 12-inch water main to the Lannon Elementary School in 2019. This was in response to a consent agreement entered into between the Hamilton School District (School District) and the WDNR that acknowledged that the School's well repeatedly tested positive for *E. Coli* contamination in fall 2018. The School District paid the water main costs associated with the extension of an 8-inch equivalent water main in accordance with the Village's water main extension rule, local ordinance 74-216. The oversizing cost, cost of water main stubs extended at the intersection of Good Hope Road and Lannon Road, and the cost of the individual public service laterals installed as part of this project were incorporated into the water impact fee as amended in 2020.

D. Existing Source and Supply

The Village's water supply system currently consists of two water sources, the Whispering Ridge Wellhouse and the Lannon Estates Well Facility. The capacities of these wells are shown in Table 2.02-3.

Well	Capacity (gpm)
Whispering Ridge	250
Lannon Estates	120
Total Capacity	370
Firm Capacity	120

Table 2.02-3 Existing Well Capacity

All storage within the system is built within the Whispering Ridge Wellhouse. Storage consists of one 160,000-gallon-belowground reservoir. The reservoir can be filled directly by the well or from system pressure (Lannon Estates Well) through a refill valve installed as part of the USDA–RD project in 2022. The Whispering Ridge booster pumps are of equal capacity and serve as a source of redundancy within the system and as a means to deliver high flow for a short period of time, if needed. Booster pumping capacity is shown in Table 2.02-4.

Booster Pump	Capacity (gpm)
Whispering Ridge, (3) 550 gpm each*	1,650
Lannon Estates	0
Total Capacity	1,650
Firm Capacity	1,100

*Booster Pump No. 3 will be installed in 2022 as part of the USDA-RD project.

Table 2.02-4 Existing Booster Pumping Capacity

2.03 DESCRIPTION OF WATER SYSTEM PROJECTS TO BE ASSESSED

This section of the report satisfies Wisconsin Statutes §66.0703(5)(a) and §66.0703(5)(b) that require the report to include preliminary plans and specifications and a cost opinion of the proposed improvements. Final plans and specifications for the 2021 improvements are available for viewing at Village Hall. The preliminary specifications for future water mains should be considered as the current version of the Village's standard specifications, which are available for viewing at Village Hall. The preliminary plans for future water main are included in the figure referenced in Section 2.03(B).

A. 2021 USDA Water System Expansion Project (Water Mains and Lannon Estates Well Facility)

In 2021, the Village constructed more than three miles of water mains in several areas throughout the Village with the goal of providing water service to as many residents as possible while keeping project costs within the capacity of the Village to obtain USDA-RD financing. Figure 2.02-1 displays a map of the

water system improvements related to the 2021 USDA Water Main Expansion Project. Table 2.03-1 outlines the quantities of water main that the Village installed as part of the 2021 project.

As part of this project, the Village also acquired and improved the Lannon Estates Well Facility (Well Station No. 2). The Lannon Estates Well Facility has a 120 gpm well pump that draws water from the shallow aquifer. The Well Station No. 2 is intended to be useful to the Village for at least five years until the nearby Lannon Stone Products Quarry begins to excavate below its current depth limit. The Lannon Estates Well may produce water to the Village for several years beyond that time.

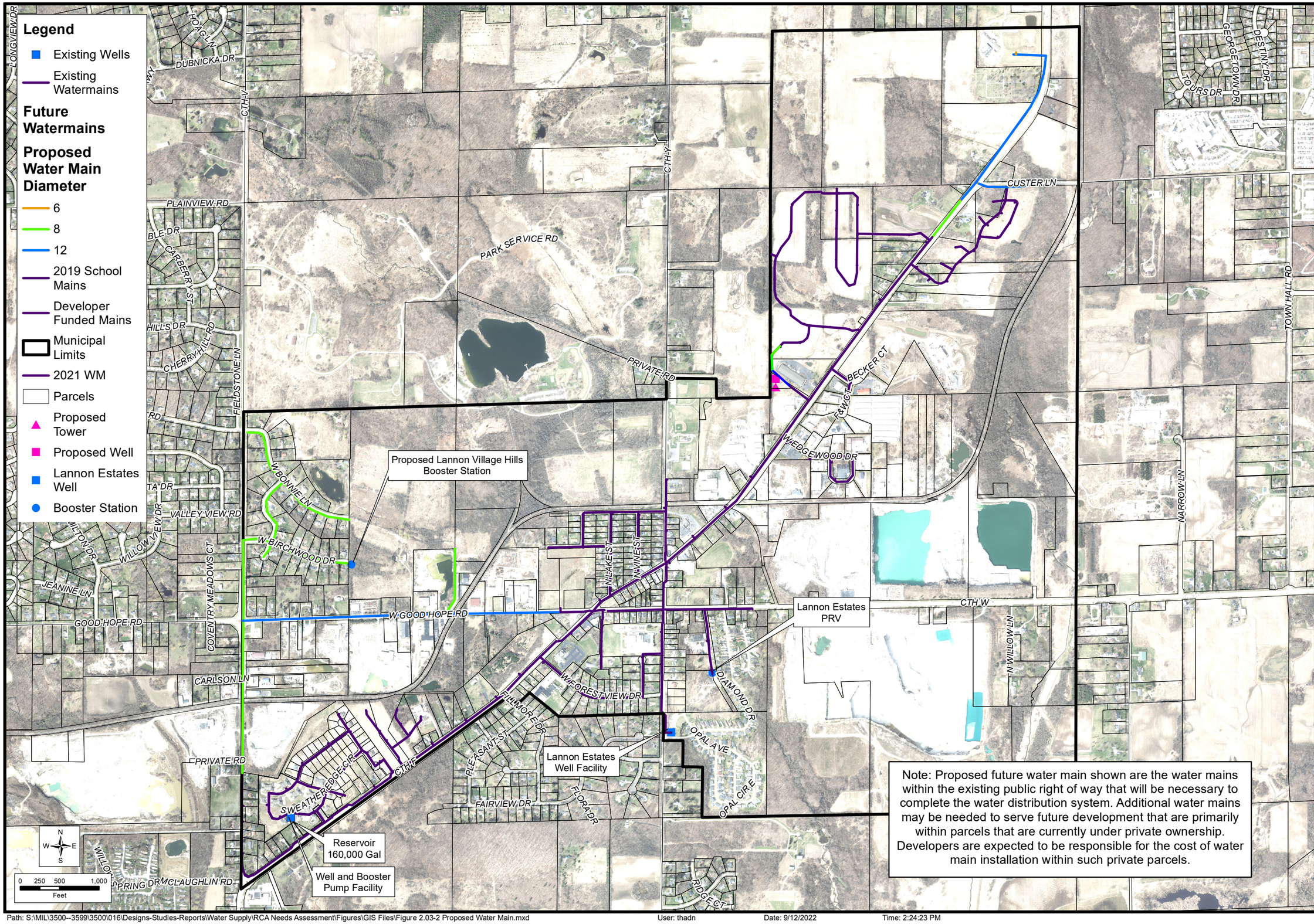
Water Main Diameter (inches)	2021 USDA Water Main Expansion (feet)
4	199
6	1,681
8	7,887
12	7,105
16	0
Total	**16,872**

Table 2.03-1 2021 Village Water Main Improvements (USDA-RD)

The project also includes the addition of a third 550 gpm booster pump at the Whispering Ridge Wellhouse.

B. Future Watermain

Figure 2.03-1 presents a map of the proposed water main that is expected to be installed by 2045, the time that the Village's TID No. 2 must close. Table 2.03-2 shows the lengths associated with each size of water main installed. Approximately 16,450 feet of water main is to be installed. This information should be considered as the preliminary plans for the future water mains. The preliminary specifications should be considered as the current version of the Village's standard specifications, which are available for viewing at Village Hall.



PROPOSED FUTURE IMPROVEMENTS

WATER SYSTEM IMPROVEMENTS
VILLAGE OF LANNON
WAUKESHA COUNTY, WISCONSIN

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FIGURE 2.03-1
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Path: S:\MIL\3500--3599\3500\016\Designs-Studies-Reports\Water Supply\RCA Needs Assessment\Figures\GIS Files\Figure 2.03-2 Proposed Water Main.mxd User: thadn Date: 9/12/2022 Time: 2:24:23 PM

Water Main Diameter (inches)	Existing Length* (feet)	Proposed Length (feet)	Total Length (feet)	Percentage of Total
4	90	0	90	0.2%
6	1,790	0	1,790	3.4%
8	12,952	8,500	21,452	41.1%
12	18,689	7,950	26,760	51.3%
16	1,419	0	2,116	4.1%
Total	**34,940**	**16,450**	**52,208**	**100.0%**

*Existing length includes previous water mains, developer installed water mains, and 2021 USDA-RD water mains.

Table 2.03-2 Proposed Distribution System Water Main Inventory (2045)

C. Future Source and Supply

Table 2.03-3 shows the proposed future improvements in source and supply to the distribution system. The proposed location of these improvements is also shown in Figure 2.03-2.

A third source of supply is needed to continue to support new development and the connection of additional existing structures to the system. A water tower will be necessary to pressurize the system in the event of power outages, to provide storage to buffer daily fluctuations in demands, and to provide storage for fire protection.

A small booster station and pressure reducing valve (PRV) facility may be required at the time water main is installed in Lannon Village Hills, and specifically Birchwood Drive. This area is higher in elevation than the rest of the Village and a small booster station would provide additional pressure for normal daily use, while a combination check valve and PRV would allow water to flow into the area to supply fire hydrants during emergencies.

Facility Name	Description	Anticipated Year Required
Third Source of Supply	Deep Aquifer Well with Treatment (500 gpm) or Interconnect to Neighboring System	2024
Water Tower	Elevated Storage–250,000 gallons	2026
Lannon Village Hills Booster Station	Booster Station and PRV–25 to 50 gpm pump for normal daily demands	2030 to 2040

Table 2.03-3 Proposed Water Supply and Storage Facilities

This information should be considered as the preliminary plans and specifications for the future facilities and should be supplemented by the current version of the Village's standard specifications, which is available for viewing at Village hall.

2.04 SUMMARY OF COSTS

This section provides a summary of costs to be included in the RCA.

A. Summary of 2021 USDA Water System Expansion Project

Table 2.04-1 shows the costs of the USDA Water System Expansion Project and remaining costs associated with the Lannon Estates Well Facility Acquisition. The total costs to date are approximately $7,446,870, and include Bid Contract 1 for the water main installation and Bid Contract 2 for the Lannon Estates well acquisition and upgrades and the Whispering Ridge well upgrades. These costs also include the engineering, legal, and financial costs associated with the project. The project (as a whole) is on track to finish less than the $8,916,000 budget, and the Village intends to use the balance (all of which is USDA-RD grant funds) to fund future water main extensions.

Facility Name	Cost
Acquisition and Rehabilitation of Lannon Estates Well, Rehabilitation of Whispering Ridge Well	$553,356
USDA Project Cost for Water Mains, Services, and Hydrants	$6,913,514
Total Estimated Cost	**$7,466,870**

Note: The project finished under the $8.916 million budget. Therefore, the Village intends to use the remaining available funds (all of which are grant funds) to fund future water main installations.

Table 2.04-1 2021 USDA Water System Expansion Project Costs

B. Future Water Main Improvements Cost Opinion

A summary of the opinion of probable costs (OPC) of the future water main expansions is shown in Table 2.04-2. The total OPC for these water main improvements is $6,700,000. This OPC is based on a unit cost of approximately $400 per LF of water main and includes construction, engineering, legal, acquisition, contingency, and is inclusive of public services, hydrants, valves, and surface restoration. This unit cost is based on the bid results of the Village's 2021 Water System Expansion project. Some project areas, such as Town Line Road and Good Hope Road, assume a higher unit cost because of the known presence of extensive bedrock.

Facility Name	OPC
Townline Road from Quarries to Bugline Road (1,100 LF)	$500,000
North Main Street Extension Toward Calvary Baptist Church (1,000 LF)	$350,000
Main Street and Gross Property Frontage (1,350 LF)	$550,000
Custer Lane and Main Street (1,500 LF)	$600,000
Townline Road from Bugline Road to Good Hope Road (1,000 LF)	$400,000
Lannon Village Hills (5,600 LF)	$2,250,000
Good Hope Road (4,100 LF)	$1,750,000
Dudovich Drive (800 LF)	$300,000
Total OPC	**$6,700,000**

Table 2.04-2 Future Water Main Improvements–OPC

C. Future Source and Supply OPC

A summary of the OPC of the future source and supply projects is shown in Table 2.04-3. These cost estimates include construction costs, nonconstruction related costs, and contingencies. The total probable OPC for these facilities is $5,800,000.

Facility Name	Cost
Lannon Village Hills Booster Station	$500,000
Future Well and Elevated Storage	$5,300,000
Total OPC	**$5,800,000**

Table 2.04-3 Future Supply and Source Improvements

D. Summary of Costs

A summary of all project costs is shown in Table 2.04-4. This provides an opinion of the total construction and nonconstruction related costs for the improvements to the Village's water system that need to be assessed. The total OPC is $19,966,870.

Project Name	Cost
2021 Water Main Improvements	$7,466,870
Future Water Main Improvements	$6,700,000
Future Supply and Source Improvements	$5,800,000
Total OPC	**$19,966,870**

Table 2.04-4 Future Improvements

2.05 PROJECT COST OFFSETS

The Village has received multiple sources of funding toward the build-out of its water system that will offset the cost of the reserve capacity assessments.

A. USDA-RD Grant Funds

The total cost offset from USDA-RD Grant Funds is $3,493,000. This grant is in the form of principal forgiveness and can only be spent on projects identified in the Preliminary Engineering Report for the 2021 Water System Expansion project. Those projects include the 2021 water main installations, the Lannon Estates Well Facility acquisition and upgrades, the Whispering Ridge Well upgrades, and contingency projects that include future water main, leak detection and repairs, and meter replacements, and others as may be allowed by USDA-RD through an amendment to the Preliminary Engineering Report.

B. Village Contribution to the USDA-RD Loan

The total cost offset from Village Contribution to the USDA-RD loan associated with the 2021 project is $143,000. This amount is planned to be reimbursed to the Village by the Waukesha County Community Foundations Village of Lannon Quarry Grant Fund (WCCF Quarry Grant Fund).

C. TID Eligible Costs

The total cost offset from TID eligible projects is $8,320,000. This value reflects the TIDs 1 and 2 project plans. This can be spent on the future supply source and water tower and water mains.

D. Total Collected Funds

A summary of the cost offsets is shown in Table 2.05-1.

Funding Source	Cost Offset
USDA Grant Funds	$3,493,000
Village Contributions to the USDA-RD Loan	$143,000
TID 1 & 2 Project Plan Related to Water	$8,320,000
Total Offset Funds	**$11,956,000**

Table 2.05-1 Project Cost Offsets

These costs directly offset the costs that need to be assessed. The remainder of the costs that need to be assessed after applying funding is $8,010,870.

SECTION 3
CALCULATION OF SPECIAL ASSESSMENT

3.01 INTRODUCTION

This section of the report presents the calculation of the special assessment. In order to satisfy Wisconsin Statute §66.0703(1)(b)'s requirement of the special assessment being conducted on a "reasonable basis" when the assessment represents an exercise of the police power. This section includes the description of equivalent water meter connections (EMC) as the "reasonable basis" to treat similarly situated properties similarly, as well as an explanation of how the RCA amount was allocated based on the EMCs.

In general, the reasonable basis for the RCA amount adheres to the following formula:

$$RCA\ Amount = \frac{Total\ Project\ Cost\ Net\ of\ Financial\ Offsets}{Number\ of\ Equivalent\ Meters\ in\ Project\ Area}$$

3.02 EQUIVALENT METER CONNECTIONS

A. Methodology

An EMCs was chosen as the most reasonable basis as this method recognizes that the meter size represents the amount of water that can be drawn by a property through an individual meter. Similarly situated properties will have similar meter sizes and will be treated fairly based on the size of the individual meter. Other common methodologies considered were based on the length of property frontage abutting water main or based on the area of the parcel of land abutting the water main. The Village Board recognized that these options do not reasonably reflect the benefit received by the abutting property. For example, most single-family houses have the opportunity to draw the same amount of water from the municipal system regardless of the length of frontage or area of the parcel. Another method considered was based on the number of service lateral connections per property. The Village Board recognized that while each property may only have one service lateral connection to the distribution system, some users may draw more water than others and that this method may not be equitable. The EMC method was further explored in a report commissioned by the Village Board in 2021 titled *Review of Village Policies for Connection to Water and Charges for the 2021 Water Service Extension Project* by Trilogy Consulting, LLC, November 2021. Therefore, the Village Board recommended the EMC method as the most equitable approach to treat similarly situated properties similarly.

An EMC is defined in this case as the ratio flow capacity of the meter to be installed compared to a base meter flow capacity. The base meter in this case was selected to be a 5/8- or 3/4-inch meter. These sizes of meter were chosen as the base meter because these are the two most common meter sizes for residential properties. These meters can be treated as the same size for EMC purposes in accordance with the Lannon Municipal Water Utility's establishment of initial water rates and quarterly meter charges, as indicated in the PSCW Final Decision for Docket 3045-WR-100 including Schedule Mg-1 mailed to the Village on September 26, 2008.

Once the base meter was selected, the flow capacity of larger meter sizes was compared to the flow capacity of the base meter to determine their EMC value. The meter capacities of Badger Meter, Inc. (a prominent manufacturer and global distributor of water meters) were used for this calculation. A Badger

Meter 5/8-inch Recordall Disc Series meter is rated at 25 gpm, and this was set as the "base" meter capacity. The capacity for larger meters was determined from other common offerings from Badger Meter. A 3-inch Compound Series meter is rated at 450 gpm, and a 3-inch Turbo Series meter is rated at 550 gpm. Therefore, the average capacity of a 3-inch meter is 20 times larger than the base meter capacity and will be assessed 20 times the base assessment. The EMC values can be found in Table 3.02-1.

Meter Size (inches)	Meter Capacity (gpm)	EMCs
5/8[a]	25	1[a]
3/4[a]	35	1[a]
1	70	2
1 1/2	200	8
2	310	12
3	500[b]	20
4	1,250	50
6	2,500	100

[a]5/8-inch and 3/4-inch meters are treated as the same size according to the PSCW.
[b]This value is the average capacity of a Compound and Turbo Series Badger Meter.

Table 3.02-1 EMC

B. Number of EMCs

Figure 3.02-1 displays a map of the service area that will be impacted by the reserve capacity assessment. The service area pertains to an area that encompasses the entire Village limits except for those areas previously connected to the municipal water system in 2020, or earlier, or any property for which a water connection charge has been paid. As a result, water customers before the start of the 2021 water system expansion project and those dwelling units that connected since the start of the project for which a developer paid an impact fee are not included in the RCA and will not be assessed.

Figure 3.02-2 shows a map of the areas of the Village that will result in new connections to the municipal water system since the time that the 2021 water system expansion project began for which impact fees were not paid by a developer. The map shows multiple subareas of the Village that correspond to the subareas presentenced in Table 3.02-2. Table 3.02-2 summarizes the number of anticipated connections for each subarea with a description of property. The number of EMCs represents a projection of anticipated growth that corresponds to the year 2045, which is the projected year by or before that the water system improvements will be installed. The Village modified its compulsory connection ordinance, Section 74-157 of the municipal code of ordinances, in conjunction with the 2021 water system expansion project to require connection to the municipal water system within 6 months of municipal water being made available to a property. As a result of that ordinance, several proprieties connected to previously existing mains that were installed between 1997 and 2019, and several properties connected to new water mains installed in 2021. These properties are accounted for in subarea 1. Subarea 1 includes Lannon Estates, which installed a 3-inch meter and therefore was counted as 20 EMCs.

In total, 741 EMCs are projected to be connected to planned improvements.

Legend

- Well and Booster Pump Facility
- Municipal Limits
- Future Water Mains
- Existing Water Mains
- Future Connection (likely by 2045)

The RCA applies to the water service area that encompasses the entire Village limits except for those areas previously connected to the municipal water system in 2020 or earlier or any property for which a water connection charge has been paid.

PLAINVIEW RD
BRAMBLE DR
CARBERRY ST
FOREST HILL LN
WOODED HILLS DR
CHERRY HILL RD
FIELDSTONE LN
CHESTNUT HILL RD
ALTA VISTA DR
HAMILTON DR
WILLOW VIEW DR
VALLEY VIEW RD
COVENTRY MEADOWS CT
JEANINE LN
GOOD HOPE RD
CARLSON LN
PRIVATE RD
WILLOW SPRING DR
MCLAUGHLIN RD
W BONNIE LN
W BIRCHWOOD DR
PARK SERVICE RD
PRIVATE RD
HEMLOCK LN
W STATE ST
N LAKE ST
N VINE ST
CTH Y
W GOOD HOPE RD
W FOREST VIEW DR
FILLMORE DR
PLEASANT ST
HI MOUNT CT
FAIRVIEW DR
FLORA DR
WOODWARD CT
ORCHARD CT
OPAL AVE
TOPAZ TRL
RIDGE CT
EMERALD DR
DIAMOND DR
CTH F
BECKER CT
SWICT
W EDGEWOOD DR
CTH W
N WILLOW LN
LEMONS DR
INDEPENDENCE LN
DESTINY DR
TOURS DR
CUSTER LN
TOWN HALL RD
NARROW LN
MARCY RD
SWEATHEREDGE CIR
NWEATHEREDGE CIR

N W E S

0 250 500 1,000 Feet

WC Land Information Office, WLIP, SEWRPC, Ayres Associates

SPECIAL ASSESSMENT MAP

WATER SYSTEM IMPROVEMENTS
VILLAGE OF LANNON
WAUKESHA COUNTY, WISCONSIN

STRAND ASSOCIATES®

FIGURE 3.02-1
3500.016

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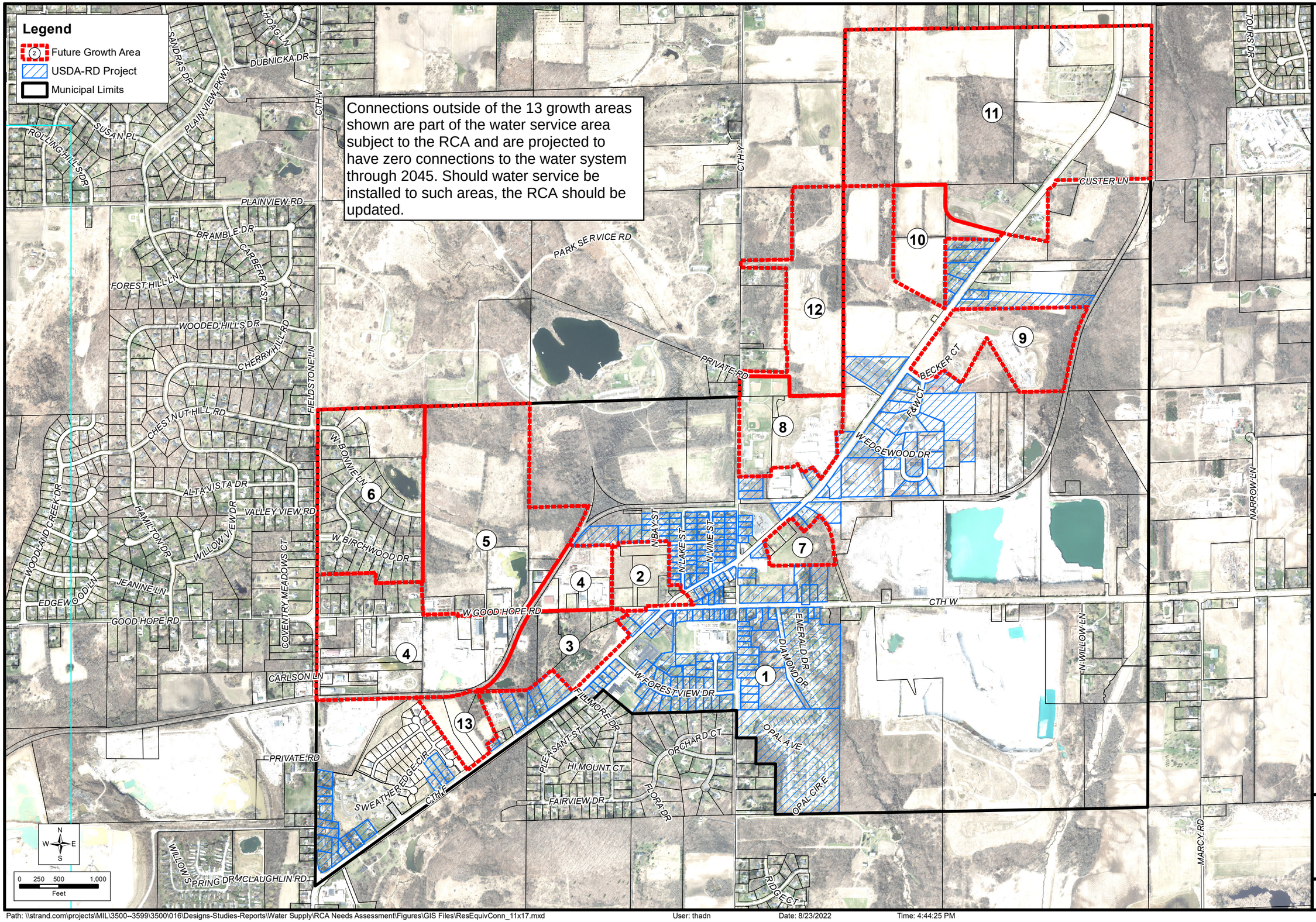

WATER SYSTEM DEVELOPMENT AREAS

WATER SYSTEM IMPROVEMENTS
VILLAGE OF LANNON
WAUKESHA COUNTY, WISCONSIN

STRAND ASSOCIATES®

FIGURE 3.02-2
3500.016

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Table 3.02-2 Count of Equivalent Meter Connections by Subarea

Area	Description	Projected Future Development (EMCs)	Existing Structures (EMCs)	Total (EMCs)
1a	2021 Water Main Project Area: Properties within USDA Project Area (existing structures required to connect to new water mains, includes Lannon Estates at 20 EMCs)	0	181	181
1b	2021 Water Main Project Area: Three existing structures without plumbing, no service line installed, and not expected to connect by 2045 counted as zero EMCs	0	0	0
1c	Vacant Lots on Existing Water Main: Vacant lots with a service line installed and expected to connect by 2045	8	0	8
1d	Existing Structures on Existing Water Main: 53 existing structures abutting 1997, 2008, or 2019 water main required to connect counted as one EMC	0	53	53
2	Barnes and Blaze Property: Projected as three units per acre in 2018 Water Impact Fee Study	38	0	38
3	TID No. 2 Central Residential: Quataro property projected as 36 units; existing buildings counted as one EMC each	36	3	39
4	Good Hope Rod and Town Line Roads: Existing structures counted as one EMC; quarry properties not counted; WE Energies site counted as one EMC	0	23	23
5	Cawley Farm: Restoration plan indicates 100 dwelling units; Dudovich Drive counted as three EMCs; two existing commercial properties on Good Hope Road counted as one EMC	101	4	105
6	Lannon Village Hills: Existing structures counted as one EMC	0	45	45
7	Halquist Greenfield: No growth anticipated by 2045	0	0	0
8	Circle S Storage and Joeck's Park: Circle S Storage is counted as one EMC because of no anticipated development by 2045; park counted as one EMC	0	2	2
9	Rams Contracting: 5.5 acres of commercial development anticipated and counted as one EMC per acre; contractor's yard will remain	6	0	6
10	Overstone Phase 3: 69 units remain to be connected as of the drafting of this report	69	0	69
11	Northeastern Area: Existing structures counted as one EMC; 2.5 units per acre projected for 60 acres of buildable area by 2045; cemetery not expected to connect; church assumed to be a 1-inch meter; seven existing structures counted as one EMC	150	9	159
12	Overstone Menomonee Falls: No connections to Lannon utilities anticipated.	0	0	0
13	Whispering Ridge Estates North: 13 properties remain to be connected as of the drafting of this report	13	0	13
	Total	**421**	**320**	**741**

3.03 ALLOCATION OF COSTS

As outlined in Section 2 of this needs assessment, the project costs for the performed and proposed projects are $19,966,870, and the total project cost offsets are $11,956,000. This leaves a net project cost of $8,010,870 to be assessed through the RCA. With a total of 741 EMCs anticipated, the RCA amount per EMC is:

$$\boldsymbol{RCA\ Amount} = \frac{Total\ Project\ Cost\ Net\ of\ Financial\ Offsets}{Number\ of\ Equivalent\ Meter\ Connections}$$

$$= \frac{\$8{,}010{,}870}{741}$$

$$= \$10{,}810.89 \text{ per EMC}$$

This RCA amount includes the cost of the public water main, the public portion of the water service lateral, and future storage and supply projects. The RCA does not include private property costs such as the private water service lateral, private well abandonment, and private plumbing.

A typical residential or commercial property will receive either a 5/8- or 3/4-inch meter and will be assessed the base rate of $10,810.89 for one EMC. Current vacant and buildable single-family and two-family residential lots will be special assessed at the base rate and will receive a public service lateral.

The Village anticipates two connections larger than the base EMC meter size. One is Lannon Estates. Lannon Estates had a 3-inch meter installed and will be assessed 20 EMCs, resulting in an RCA of $216,217.80. Calvary Baptist Church is expected to have a 1-inch meter connection that would result in 2 EMCs resulting in a total RCA of approximately $21,621.78.

RCAs will be deferred until the time of connection to the municipal water utility. Time of connection will be considered at the time the building permit is applied for the connection of interior plumbing to the municipal source.

SECTION 4
RECOMMENDED SPECIAL ASSESSMENT SCHEDULE

4.01 INTRODUCTION

This section of the report summarizes the RCA amount per EMC according to the schedule (how much the EMC changes for deferred connections in future years) and the term (the payments due by properties that have connected). This section also covers code requirements that the Village must use for implementing and managing the special assessment.

4.02 RCA REDUCTION FOR THE BENEFIT OF ALL EQUIVALENT METER CONNECTIONS

The WCCF Quarry Grant Fund was established with the reduction in special assessments as a eligible use for the funds. As part of the previous special assessments implemented in 2021, the WCCF Quarry Grant Fund provided a total of $2,234,520 in special assessment reductions to the benefit of each property that was specially assessed in order to reduce their special assessment balance to $15,000 for the typical connection, and $0 for Lannon Estates.

Because the 2021 special assessments are being reconfigured as an RCA, a similar arrangement will be applied to the calculation so the RCA amount for each EMC will be reduced to the benefit of each property to be assessed. WCCF Quarry Grant Fund budget allows for $2887.89 to be reduced from 721 of the 741 total EMCs to reduce the individual EMC RCA balance to $7,923; and for $216,217.80 to applied to reduce the Lannon Estates balance to $0. The total WCCF Quarry Grant Fund contribution required to accomplish this is $2,298,386.49.

Therefore, the RCA amount for one EMC is $7,923.

4.03 RECOMMENDED RCA SCHEDULE FOR DEFERRED ASSESSMENTS

The Village has decided to adopt a policy to defer RCAs until the property connects to the water system. This means that vacant properties, properties with no internal plumbing, or properties that do not yet have access to municipal water will not be assessed in the initial year that the RCA is implemented. Therefore, a schedule must be adopted that accounts for the changes in inflation and construction costs for future years.

The RCA amount for each year will be determined by looking up the construction cost index (CCI) as provided by Engineering News Record (ENR) available for each subsequent year. This percent change shall be presented to the Village Board in January of each year as follows:

- The base RCA amount for one EMC shall be $7,923 and shall be associated with the month of January 2022.
- The CCI shall be checked from ENR as available as of the date of the first regular meeting of the Village Board each January.
- The percent change in the CCI relative to the base month and year (January 2022) shall be applied to the base RCA amount.
- Any EMC connection in that calendar year shall be assessed the RCA amount as adopted by the Village Board in January of that same calendar year.
- This methodology shall be reevaluated by the Board every year or as determined necessary.

The chart in Figure 4.03-1 shows the CCI as published by ENR for the month of January for the last 20 years. The CCI for January 2022 was 12,556, up 8.0 percent from January 2021. The average annual change over the last 3 years was 3.9 percent. The average annual change over the last 5 years was 3.6 percent. The 20-year trend demonstrates that the annual change has reached peaks of 6.9 percent in 2005, 5.7 percent in 2009, 4 percent in 2017, and 8 percent in 2022.

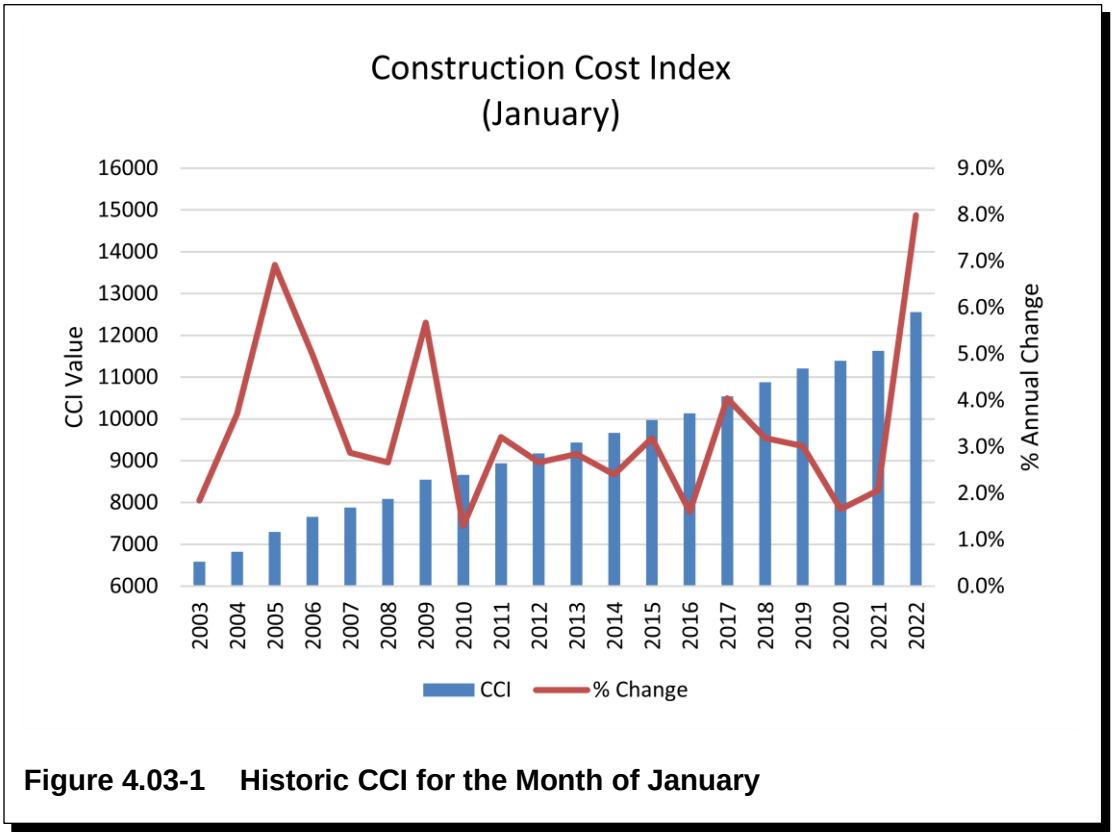

Figure 4.03-1 Historic CCI for the Month of January

Table 4.03-1 shows the potential effect of applying the CCI for future calendar years based on the recent trends. The next 2 years were assigned a 7 percent increase and future years beyond that were assigned a 4 percent increase. Note that the RCA fee could be more or less than the amount shown and will be evaluated in January each year.

Year	Potential RCA Fee Based On Historic Trend*
2022	$7,923
2023	$8,478
2024	$9,071
2025	$9,434
2026	$9,811
2027	$10,204
2028	$10,612
2029	$11,036
2030	$11,478
2031	$11,937
2032	$12,414
2033	$12,911
2034	$13,427
2035	$13,964
2036	$14,523
2037	$15,104
2038	$15,708
2039	$16,336
2040	$16,990
2041	$17,669
2042	$18,376
2043	$19,111
2044	$19,876
2045	$20,671

Note: A 7 percent annual increase was applied to 2023 and 2024, and a 4 percent increase was applied to 2025 and beyond. The actual rate each year is to be determined by the Village Board based on the actual CCI in January for a given year relative to the CCI in January 2022.

Table 4.03-1 Recommended EMC Schedule

4.04 RECOMMENDED RCA TERM AND PAYMENT SCHEDULE FOR A FEE THAT HAS BEEN ASSESSED UPON CONNECTION TO THE WATER UTILITY

Once assessed at the time of property connection, the RCA is expected to be paid in full or payable over a 20-year term by placement on the property tax bill. The interest rate to be applied to the 20-year term will be the prevailing interest rate associated with the water system projects implemented by the Village in that year, plus an allowable amount for Village administrative costs so long as that additional amount is within the limits dictated by Wisconsin State Statutes.

For example, the 2021 special assessments used a 2.25 percent interest rate for the 20-year term based on the approximate 1.75 percent USDA-RD financing and an additional 0.5 percent applied for Village administration. By State Statute, the Village would be allowed to apply up to an additional total 2.0 percent for administrative costs. Each property that was previously special assessed or connected without paying an impact fee (due to the Village Board's temporary moratorium on the collection of impact fees) in 2021 or later will have the 2.25 percent interest rate applied to its term.

For properties that elect to pay the $7,923 RCA fee over a 20-year term at an interest rate of 2.25 percent, the total amount paid will be $9,926.20 with $7,923 as principal and $2003.20 as interest.

The schedule for payments over the term will be according to one scenario presented in the following.

A. Properties that Previously Paid a $15,000 Special Assessment in Full

Properties that paid the $15,000 special assessment in full before the assessment being placed on the property taxes will be reimbursed $7,077 so their RCA status will remain "paid in full" with a balance of $0 to be assessed.

B. Properties that Paid One of 20 Annual Installments of a $15,000 Assessment

Properties that previously paid their first annual installment of $939.63 of their 20-year term will be credited that amount toward the RCA. The $939.63 consisted of $750 of principal and $189.63 of interest that will be credited to the $7923 of principal and $2003.20 of total interest. This results in a total balance of $8,986.57 of which $7,173 is principal and $1,813.57 is interest. This total will be redistributed over the remaining 19-year term in equal amounts. The resulting annual payment is $472.98 of which $377.53 is principal and $95.45 is interest.

C. Properties Assessed $15,000 That Made a Partial Payment in Excess of One Installment

Properties that partially prepaid the $15,000 assessment or made an additional payment beyond one annual installment will be credited in a similar fashion described previously. The Village Clerk will calculate the balance of principal and interest. If the total payments to date exceeded $7,923, the excess amount will be reimbursed. If the total payments to date are less than $7,923, the remaining balance will be divided over the remaining 19-year term.

D. Properties that Connected to Pre-2021 Water Main but Did Not Yet Pay a Connection Fee

Properties that were previously in impact fee zone 2 (Main Street or bid alternate water main areas or other water main that was not part of the 2021 USDA-RD project) that did not pay an impact fee because the Village Board placed a moratorium on the collection of the impact fees will be assessed an RCA. Properties can pay the RCA amount of $7,923 in full to avoid paying interest.

For properties that do not pay in full, they will be assessed an RCA at the rate of $7,923.00 per EMC over a 20-year term at 2.25 percent interest. The total amount paid will be $9,926.20 with $7,923 as

principal and $2003.20 as interest. This will be divided into 20 annual installments so each annual installment will be $496.31 of which $396.15 is principal and $100.16 is interest.

E. Vacant Properties or Properties with No Plumbing that Were Assessed $15,000.00

Properties that were previously assessed a $15,000 special assessment that either paid in full, or made an annual installment payment, or made a payment of a different amount will be reimbursed in full. The RCA will not be assessed to the property until the property is connected to the municipal water system. The property owner will be assessed an RCA at that time.

F. Properties that Prepaid a Zone 2 Impact Fee or Previously Paid a Zone 2 or 3 Impact Fee

Properties that previously paid a Zone 2 or 3 impact fee or prepaid an impact fee are not part of this RCA calculation. If paid in full, the remaining impact fee balance is $0 and an RCA will not be charged.

4.05 ENACTING AND MANAGING THE SPECIAL ASSESSMENT

In order for the special assessment to be enacted, the process outlined in Wisconsin Statute Subchapter VII of Chapter 66 must be followed. The following code samples and descriptions in this section are intended to summarize the special assessment process; however, Wisconsin Statute Subchapter VII of Chapter 66 should be reviewed for all special assessment code requirements.

1. Wisconsin Statute §66.0703(4)–Preliminary Resolution and Report

To summarize, a resolution must be declared, and a proposal report must be written. The requirements of the proposal report are in Wisconsin Statute §66.0703(5) and are intended to be satisfied by this document.

> *"Before the exercise of any powers conferred by this section, the governing body shall declare by preliminary resolution its intention to exercise the powers for a stated municipal purpose. The resolution shall describe generally the contemplated purpose, the limits of the proposed assessment district, the number of installments in which the special assessments may be paid, or that the number of installments will be determined at the hearing required under sub. (7), and direct the proper municipal officer or employee to make a report on the proposal. The resolution may limit the proportion of the cost to be assessed."*

2. Wisconsin Statute §66.0703(6)–Report Filed with Municipal Clerk

"A copy of the report when completed shall be filed with the municipal clerk for public inspection."

The statute goes on to explain the procedure if property of the state is subject to the assessment. In this case, no property of the state is impacted or benefited by this project.

3. Wisconsin Statute §66.0703(7)–Public Notice and Hearing

The municipality must post a public notice and a copy shall be mailed to each subject property. The notice shall indicate where and when the report can be examined. The notice shall also indicate the date, time and location of the public hearing. The public hearing shall not be held sooner than ten days and not later than 40 days after the notice.

> *"(a) Upon the completion and filing of the report required by sub. (4), the city, town or village clerk shall prepare a notice stating the nature of the proposed work or improvement, the general boundary lines of the proposed assessment district including, in the discretion of the governing body, a small map, the place and time at which the report may be inspected, and the place and time at which all interested persons, or their agents or attorneys, may appear before the governing body, a committee of the governing body or the board of public works and be heard concerning the matters contained in the preliminary resolution and the report. The notice shall be published as a class 1 notice, under ch. 985, in the city, town or village and a copy of the notice shall be mailed, at least 10 days before the hearing or proceeding, to every interested person whose post-office address is known, or can be ascertained with reasonable diligence.*
> *(b) The hearing shall commence not less than 10 nor more than 40 days after publication. The notice and hearing requirements under par. (a) do not apply if they are waived, in writing, by all the owners of property affected by the special assessment."*

4. Wisconsin Statute §66.0703(8)–Adoption and Final Resolution

These statutes describe the steps taken before the adoption of a special assessment. Wisconsin Statute §66.0703(12) should be reviewed for right of appeals, if needed.

> *"(a) After the hearing upon any proposed work or improvement, the governing body may approve, disapprove or modify, or it may rerefer the report prepared under subs. (4) and (5) to the designated officer or employee with directions to change the plans and specifications and to accomplish a fair and equitable assessment.*
>
> *(b) If an assessment of benefits is made against any property and an award of compensation or damages is made in favor of the same property, the governing body shall assess against or award in favor of the property only the difference between the assessment of benefits and the award of damages or compensation.*
>
> *(c) When the governing body finally determines to proceed with the work or improvement, it shall approve the plans and specifications and adopt a resolution directing that the work or improvement be carried out and paid for in accordance with the report as finally approved.*

(d) The city, town or village clerk shall publish the final resolution as a class 1 notice, under ch. 985, in the assessment district and a copy of the resolution shall be mailed to every interested person whose post-office address is known, or can be ascertained with reasonable diligence.

(e) When the final resolution is published, all work or improvements described in the resolution and all awards, compensations and assessments arising from the resolution are then authorized and made, subject to the right of appeal under sub.(12).”

5. Wisconsin Statute §66.0703(10&11)–Amending the Special Assessment Based on Actual Costs

These statutes outline the procedure to amend the special assessments after the actual costs are known and if those costs vary from the projected costs presented in the report.

(10) If the actual cost of any project, upon completion or after the receipt of bids, is found to vary materially from the estimates, if any assessment is void or invalid, or if the governing body decides to reconsider and reopen any assessment, it may, after giving notice as provided in sub. (7) (a) and after a public hearing, amend, cancel or confirm the prior assessment. A notice of the resolution amending, canceling or confirming the prior assessment shall be given by the clerk as provided in sub. (8) (d). If the assessments are amended to provide for the refunding of special assessment B bonds under s. 66.0713 (6), all direct and indirect costs reasonably attributable to the refunding of the bonds may be included in the cost of the public improvements being financed.

(11) If the cost of the project is less than the special assessments levied, the governing body, without notice or hearing, shall reduce each special assessment proportionately and if any assessments or installments have been paid the excess over cost shall be applied to reduce succeeding unpaid installments, if the property owner has elected to pay in installments, or refunded to the property owner.

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