VILLAGE OF GREENVILLE

OUTAGAMIE COUNTY, WISCONSIN

WASTEWATER SYSTEM MASTER PLAN

DECEMBER 2021

1696 BELLEVUE STREET
GREEN BAY, WI 54311

PROJECT NO. 05992-0052

CONTENTS

1 INTRODUCTION

1.1 Purpose

This Sanitary Sewer System Future Master Plan provides the background information, analysis of the existing system, description of the proposed sanitary sewer system improvements, and the basis for design of project components within the study area.

1.2 Project Description

The Village of Greenville owns and operates a sanitary sewer collection system within the Village boundaries. The Sewer System Master Plan will serve to evaluate the existing sewer system facilities and capability to meet future Village demands over the 30-year planning period. The hydraulic evaluation of the system was completed using sewer-specific modeling software. Village geographic information system (GIS) files for gravity mains, interceptors, force mains, lift stations, and customers are input into the model for a representation of the study area.

Future projections for population and demand will be made for a 30-year planning period. Location of projected demands will be based on the Village's indicated areas of expected development. Proposed necessary system improvements established from results from the hydraulic model and cost estimates will be presented in this Master Plan.

1.3 Scope

The scope of the Wastewater System Master Plan includes:

- Review the study area characteristics and generate population projections to estimate flows for the Village's indicated growth areas.
- Review existing and future wastewater flows.
- Create a hydraulic model of the existing sewer system from the Village's GIS data.
- Utilize the hydraulic model to review the existing collection system and lift stations for areas of insufficient operation.
- Input projected future expansions and demands into the hydraulic model to identify system improvements within the 30-year planning period.
- Provide recommendations for potential collection system upgrades.
- Provide preliminary estimates of probable costs and schedules for the proposed collection system improvements.

2 BACKGROUND CHARACTERISTICS

2.1 General Information

This section discusses characteristics relevant to the development of the sewer system Master Plan, including physical environment, climate, soils, land use, and population projections.

2.2 Geographic Location

The Village of Greenville is located in the southwest portion of Outagamie County, Wisconsin. The current Village boundaries are North Mayflower Drive to the east, County Highway JJ to the north, and County Highway BB to the south. The western border is north on Municipal Drive from County Highway BB, west on Wisconsin Avenue, north on Julius Drive, northwest on Greenville Drive, and north on North Road to County Highway JJ.

The Village of Greenville is bordered by the Town of Grand Chute on the east, Town of Ellington on the north, Town of Dale to the west, and the Town of Clayton and Village of Fox Crossing to the south. Figure 2-1 shows the location of the Village of Greenville within the surrounding area. The study area for this Master Plan is also identified on Figure 2-1.

A map of the Village's existing sewer collection system within the Village boundaries is provided as Figure 2-2.

2.3 Topography

In general, the Village drains to the northeast into Bear Creek, to the west into the Rat River, and the southeastern portion near the airport drains towards the Fox River.

Elevations in the Village range from approximately 920 feet above sea level at the northernmost and south-central part of Municipal Drive to 790 feet above sea level at Bear Creek, north of Everglade Road.

A topographic map of the Village is provided as Figure 2-3. An additional version of this map, showing both the existing sewer collection system and the topography is provided as Figure 2-4. The topographic maps were created using Outagamie County LIDAR data and should be considered approximate.

2.4 Climate

The climate of the Village is classified as a northern continental climate. There are extreme differences in climate temperatures from summer to winter. The median date of last frost, signalizing the start of spring is between May 21st – 31st. Spring is often slow in arriving and is a mixture of warm and cold periods. As summer approaches, precipitation is less frequent, but

increases in intensity. Hot and humid periods can occur in summer; however, they are short in duration. Peak average daily summer temperatures occur in July and are around 81-degrees F. Cool temperatures can occur in any summer month. On average, there are 187 sunny days per year in Greenville.

The median date of first frost, signalizing the start of fall is between October 1st - 10th. Fall typically lasts until mid-November. Nearly every year, after the first killing frost, there are short periods of days that are abnormally warm. The change from fall to winter is abrupt. The lowest average winter daily temperatures are around 9-degrees F.

Rainfall precipitation falls predominately in the five-month period from May to September. The Village receives an average of 32 inches per year of rainfall. The United States average is 38 inches per year. Snowfall precipitation falls predominately between November to March. For this five-month period, an average of 41 inches falls per year. The United States average is 28 inches per year. On average, Greenville receives some kind of precipitation on 112 days per year.

2.5 Land Use

The Village's Year 2040 Comprehensive Plan, completed by the East Central Wisconsin Regional Planning Commission (ECWRPC) provides a map of expected land use designations within the Village's boundary for the year 2040. A copy of this land use map is provided as Figure 2-5 and is used as a basis for the planning of future sewer system extensions.

The existing land use map shows the Village is approximately one-third undeveloped land, primarily agricultural, located north of Everglade Road to the Village limits and the central west area of the Village. Single family residential accounts for the majority of the developed land and is focused at the eastern center of the Village along STH-15 and surrounding area of St. Mary School. Future residential areas are grouped into three separate "Tiers" based on the expected population density of these areas. Future residential population distribution and tiers are discussed in detail in Section 5 of this Master Plan.

Commercial land is generally located within various areas of the STH-15 corridor and areas around the Appleton International Airport. Industrial land use comprises more land than commercial. Multiple industrial parks exist on the northeast side of the airport and a few industrial lots to the north of the Municipal Drive and Greenville Drive intersection. The Appleton International Airport accounts for a large fraction of Village land located in the southern-most area of the Village.

The ECWRPC Comprehensive Plan for Greenville projected a decrease in overall undeveloped/agricultural land and large increases in residential land. All commercial and industrial growth is expected to occur within the Village boundaries. The commercial and industrial parks to the northeast of the airport are predicted to expand significantly to the north.

It is anticipated that these predicted trends in the Comprehensive Plan will continue through current design year 2051.

2.6 Environmentally Sensitive Areas

Environmentally sensitive areas are defined by the Wisconsin DNR as "areas such as wetlands, steep slopes, waterways, underground water recharge areas, shores, and natural plant and animal habitats that are easily disturbed by development." In review of WDNR Surface Water Data Viewer, there are primarily wetlands surrounding Bear Creek within the block of Everglade Road, North Mayflower Road, Municipal Drive, and County Highway JJ; the northwestern-most corner of the Village; and the southwest corner of the intersection of Greenville Drive and Municipal Drive. These areas are generally indicated by the "Open Space & Natural Resource" land use designation shown on the Village's 20-year Land Use Map (Figure 2-5).

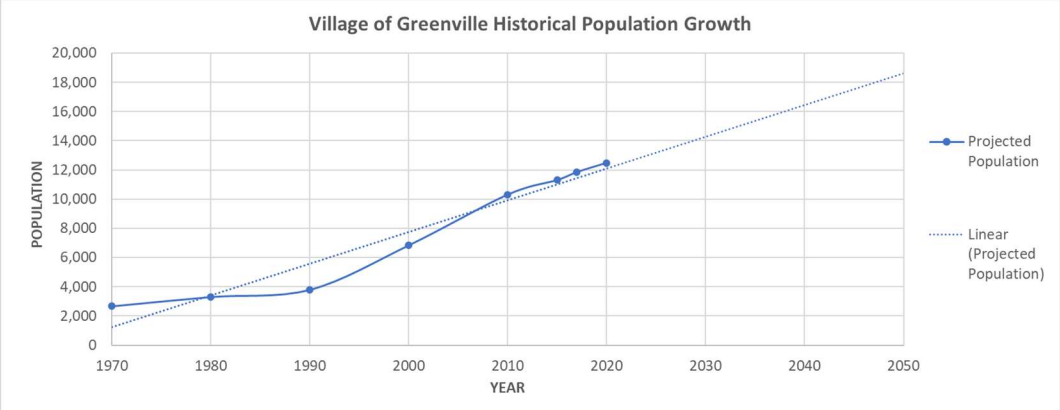
In review of FEMA floodplains, the flood-prone areas within the Village are the surrounding areas of Bear Creek. The floodplains cover the majority of the entire block of Everglade Road, Municipal Drive, County Highway JJ, and extending to the northeast of North Mayflower Road.

2.7 Population

2.7.1 Existing Population

The Wisconsin Department of Administration (DOA) makes annual population estimates and periodic population projections based on prior census data and analysis of contemporary data such as housing units, automobile registrations, dormitory and institutional populations, and other indicators of population changes.

A graph depicting population growth for the Village since 1970 is provided below, based on U.S. Census and DOA data. The DOA's 2020 population estimate for the Village of Greenville, as of January 1, 2020 was 12,450 people. This projection is for the Village of Greenville as a whole and is not necessarily representative of the current sewer service area, as many current Village residents are not connected to the collection system. In general, the Village is one of the fastest growing communities within the Fox Cities metropolitan area.



According to the 2040 Comprehensive Plan, it is estimated that there were approximately 4,662 housing units in the Village as of 2020, with most of the population living in single-family homes. Based on this, the approximate persons per household for the Village for 2020 is 2.67. For reference, the Wisconsin DOA 2020 state-wide average for persons per household is approximately 2.396.

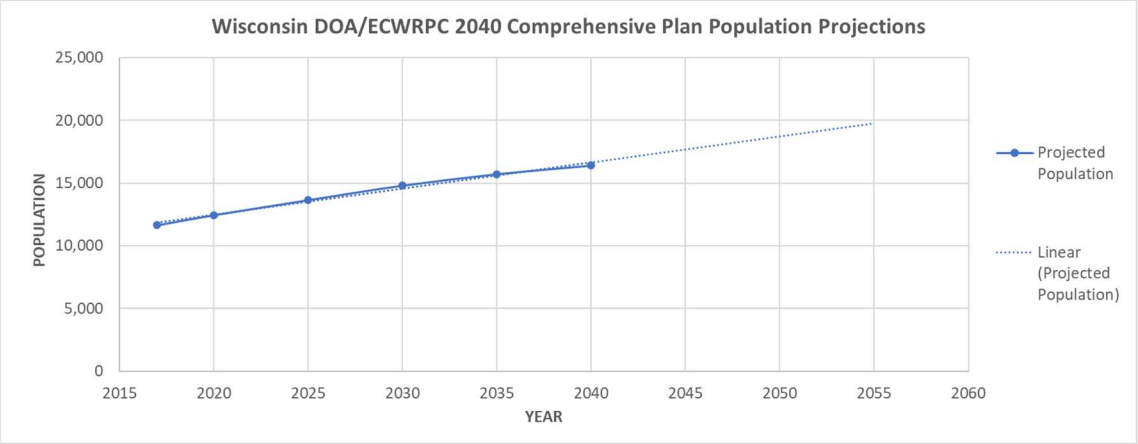
Future population projections for the Village are discussed in Section 2.7.2 below.

2.7.2 Projected Future Population

The Village's 2040 Comprehensive Plan uses the DOA population projections as the basis of future planning. This Master Plan will base the planning of future sewer service areas according to population estimates and projections provided by the DOA.

According to DOA projections, the estimated the 2020 population for the Village is 12,450 people and the 2040 population is projected to be 16,390 people. See Figure 2-7 below for the estimated and projected DOA populations. Population projections beyond the year 2040 have not yet been published by the DOA; however, projected population growth for the Village generally follows a linear trend.

Figure 2-7: Village of Greenville Population Projections



To estimate the 30-year design population for the Village, the existing projections were extrapolated to the year 2051. Based on this, the estimated Village population for the year 2051 is estimated to be 18,951 people, corresponding to a growth of 6,501 people over the 31-year period. This growth corresponds to the addition of approximately 210 people per year to the Village.

Commercial and industrial growth within the Village is also expected to occur over the next 30 years within designated land use areas. Contribution of wastewater from new commercial and industrial users will be accounted for in the development of future sewer service planning and is discussed further in Section 5 of this Master Plan.

3 EXISTING SANITARY SEWER SYSTEM

3.1 General Definitions

Several terms are used to evaluate demands and needs for different components of the sewer collection system. This Master Plan will frequently use the following terms, which are defined below:

Average Day Flow – The volume of wastewater that is expected to be produced by a sewer customer or municipal entity on a normal day. This parameter is typically expressed in gallons per day (gpd) or million gallons per day (MGD).

When analyzing historical data, this value is calculated by measuring daily wastewater flow rates and determining an average value for a defined period of time. To compare large periods of data, an Average Day Flow is normally calculated over a period of months or years.

Peak Month Flow – When evaluating data over an annual period or greater, the Peak Month Flow is defined as the largest average day volume of wastewater generated by a sewer customer or municipal entity in a single month period. This parameter is typically expressed in gallons per day (gpd) or million gallons per day (MGD).

In general, the peak month flow is between 1.1 and 1.4 times the Average Day Flow.

Peak Day Flow – When evaluating flow data over an annual period or greater, the Peak Day Flow is defined as the largest volume of wastewater that is expected to be produced by a sewer customer or municipal entity on any given day. This parameter is typically expressed in gallons per day (gpd) or million gallons per day (MGD).

In general, the peak day flow is between 2 to 3 times the Average Day Flow.

In this Master Plan, the Peak Day Flow is typically used as the planning basis for sewer piping and lift station characteristics.

Per Capita Flow – The average volume of wastewater generated per person. For historical basis, this value is calculated by dividing the population of the Village by the average day flow rate. This parameter is normally expressed in gallons per capita per day (gpcd).

To project future flow rates from a population or service area, a per capita flow rate metric is used and is estimated based on historical data and other relevant factors.

Peaking Factor – This factor is used to numerically compare the Peak Month Flow or Peak Day Flow to the Average Day Flow for a defined evaluation period. The purpose of the Peaking Factor is to estimate respective above average flow conditions for future planning or for other periods with unavailable data.

3.2 Existing Collection System

The existing collection system serves a majority of residents and businesses within the Village limits. Most residents with private septic systems are located in the western portion of the Village. The collection system consists of approximately 1,550 manholes and 81.5 miles of gravity sanitary sewer and force main piping.

Gravity sanitary sewer lines with 8-inch diameters are predominate and the oldest existing mains were installed in the early 1980's. All gravity sanitary sewer and force mains are constructed of polyvinyl chloride (PVC) with the exception of a small segment of reinforced concrete pipe on County Road BB. See Figure 2-2 for a map of the existing sanitary sewer system with pipe diameters.

The gravity sanitary sewers collect wastewater from the customer laterals and transfer the wastewater through the collection system to a lift station or to the metering station. The Village currently has three lift stations, which are described in Section 3.3 below.

The sanitary sewer collection system drains to the metering station located at the southeastern corner of the Village limits on County Road BB. Flow is measured at the metering station and transported through a 42-inch interceptor sewer to the Fox West Wastewater Treatment Facility located on the west shore of Little Lake Butte des Morts. The Village's metering station is discussed further in Section 3.4.

3.3 Existing Lift Stations

The existing sanitary sewer collection system has three lift stations: Joan Street Lift Station, Lift Station No. 1 (Everglade Lift Station), and Lift Station No. 2 (Meadow Lift Station). A map showing the approximate drainage basins for the existing lift stations is provided as Figure 3-1.

3.3.1 Joan Lift Station

The Joan Lift Station is located south of the intersection between Joan Street and Hummock Drive. The contributary area of the Joan Lift Station is approximately 354 acres and serves 50 existing homes. Collected wastewater enters the Joan wet well through an 8-inch gravity sewer line.

The wet well is a 6-ft diameter, 9-ft high structure buried 8.5 feet below ground surface. Two submersible pumps are installed in the wet well. A drawdown test of the wet well determined the typical pumping rate for the station is approximately 100 gpm. Based on lift station data provided by the Village for years 2019 and 2020, the Joan Street Lift Station pumps for an average of 1.3 hours per day.

Discharge from the Joan Street Lift Station is completed through a 4-inch force main, which discharges to an 8-inch gravity sewer on Municipal Drive. This location is within the contributary area of Lift Station No. 1, therefore, all flow from the Joan Street Lift Station service area is also pumped by Lift Station No. 1.

3.3.2 Lift Station No. 1 (Everglade Lift Station)

As of 2019, Lift Station No. 1 serves 1,556 homes and has a contributary area of approximately 1,309 acres. There are also multiple churches, medical/dental clinics, assisted living facilities, schools, and other businesses located within the contributary area for Lift Station No. 1. The lift station is located on the northwest side of the Municipal Drive and Everglade Road intersection.

Wastewater enters the wet well from two service areas; a 12-inch gravity line from the southwest and a 15-inch gravity line from the east. The current average day flow rate to Lift Station No. 1 is estimated to be 443,709 gpd.

In 2021, a major construction upgrade was completed for Lift Station No. 1. During this project, new pumps were provided for the lift station, a new valve vault was constructed, chemical feed system components replaced, and the discharge force main was re-routed. Following the project, Lift Station No. 1 has design capacity for an average day flow of approximately 777,000 gpd and a peak day flow of 2.3 MGD.

The lift station's concrete wet well has a diameter of 9.5 feet and depth of approximately 30 feet. The wet well houses two new submersible Fairbanks Morse 5" pumps, guiderails, and discharge piping. Design parameters for the pumps are 1,600 gpm each at 167 feet TDH and are equipped with VFDs. The discharge piping is routed to the valve vault where each discharge line is combined into a single force main. A magnetic flow meter is provided for flow measurement prior to exiting the valve vault.

A 14-inch diameter force main transfers wastewater from Lift Station No. 1, south along Municipal Drive (STH-76), and discharges directly into the existing 16-inch force main outside Lift Station No. 2. The total length of the 14-inch force main is approximately 4,350 feet, and the existing 16-inch forcemain is approximately 10,200 feet. Prior to reconstruction, the force main pumped wastewater from Lift Station No. 1 and discharged into the collection area of Lift Station No. 2.

A chemical feed system is provided at Lift Station No. 1 for odor and corrosion control. The system consists of a dual-walled chemical tank and a wall-mounted skid assembly. The chemical used is Aqua Hawk and is injected into the wet well.

Lift Station No. 1 is equipped with a generator to provide sufficient standby power to the submersible pumps and controls system in the event of a power outage. A SCADA control panel is also provided for Lift Station No. 1 located inside the controls building.

3.3.3 Lift Station No. 2 (Meadow Lift Station)

As of 2019, Lift Station No. 2 had a contributory area of 1,423 acres and served approximately 1,060 residential homes, two schools, churches, a YMCA, and various businesses. The lift station is located at the cul-de-sac of Meadow Park Drive and south of the Greenville Community Park.

In 2021, a major construction upgrade was completed for Lift Station No. 2. During this project, a new wet well and valve vault were provided. The project also included installation of new pumps, a chemical feed system, and a new controls building.

Wastewater from the collection system enters the lift station wet well through a 21-inch gravity sewer main from the east and 18-inch interceptor sewer from the southwest. The current average day flow rate to Lift Station No. 2 is estimated to be 326,793 gpd. Following the construction upgrade, Lift Station No. 2 has design capacity for an average day flow of approximately 446,000 gpd and a peak day flow of 1.56 MGD.

The new concrete wet well has a 10-foot diameter and was constructed to accommodate the two (2) submersible pumps, discharge piping, and guide rail systems. The pumps are submersible Fairbanks Morse 5” designed for 1,250 gpm each at 128 feet TDH and have VFDs.

Wastewater is pumped from the Lift Station No. 2 wet well through a 10-inch force main which expands to a 16-inch force main approximately 80 ft east of the lift station where the force main from Lift Station No. 1 ties in. The combined force main travels south on Municipal Drive and routes east to connect to the 18-inch gravity line on Charleen Lane.

The precast concrete valve vault houses piping from each submersible pump, emergency bypass piping, a magnetic flow meter, and appurtenant valves and fittings. The valve vault can be accessed by double-door hatches at the ground surface.

Odor and corrosion control is achieved through use of the chemical Aqua Hawk in the manually controlled chemical feed system. The chemical feed system is located in the controls building and consists of a 160-gallon storage tank, wall mounted chemical feed skid, and appurtenant piping, valves, and fittings. The controls building also houses the SCADA control panel.

3.4 Existing Outfall

The sanitary sewer system drains to the southeast corner of the Village to a metering station for flow measurement.

An inter-municipal agreement was made between Greenville and the Fox Crossing Utility District to share construction costs and capacity in a 24-inch interceptor sewer along a portion of CTH BB as well as a 42-inch interceptor sewer which transports wastewater to the Fox West Regional Wastewater Treatment Facility.

3.5 Historical Wastewater Flows

The Village of Greenville does not own or operate a dedicated wastewater treatment plant. All wastewater from the collection system (other than the Crestview Development) is treated by the Fox West Regional Wastewater Treatment Facility located approximately 1.9 miles southeast of the Village.

Flow data for the Village collected by Fox West was reviewed for the period of January 2017 through December 2020 and is summarized below in Table 3-1. Table 3-1 shows the average annual, peak month, and peak day wastewater flows obtained from the Village of Greenville's outfall metering station.

Table 3-1
Historical Village of Greenville Collection System Flow Rates
(January 2017 – December 2020)

	2017	2018	2019	2020	AVERAGE
AVERAGE DAY FLOW, MGD	0.709	0.788	0.907	0.877	0.820
PEAK MONTH FLOW, MGD	0.876	0.990	1.06	1.21	1.04
PEAKING FACTOR	1.24	1.26	1.17	1.38	**1.26**
PEAK DAY FLOW, MGD	1.26	2.16	3.15	2.08	2.16
PEAKING FACTOR	1.78	2.74	3.47	2.37	**2.59**

A general examination of the four years of flow data shows the highest average flow rates occurred in 2019. The cumulative four-year average annual flow rate from the collection system is approximately 0.820 MGD (820,000 gallons per day). The ECWRPC estimated the 2020 population of Greenville to be 12,450 people. This equates to a daily contribution per capita of 65.9 gallons, however not all residents within the Village are currently have sewer service, and this calculation is also considering flows from non-residential sources. Therefore, a per-capita flow rate estimate of 65.9 gpcd is likely low.

NR110 states that municipalities over 5,000 people are expected to have a per-capita flow rate within 65 to 80 gpcd. It is anticipated based on the above calculation that the Village's current flows are within this range.

The Environmental Protection Agency (EPA) criterion for non-excessive infiltration at average conditions is 120 gpcd. The Village does not appear to have excessive infiltration in their collection system based on this criteria.

The peaking factors for peak month flow and peak day flow are calculated by dividing the annual value by the respective average flow rate. These factors are discussed later in the Master Plan and are used to estimate peak flow rates for future, fully-developed service conditions.

3.6 Description of Hydraulic Model

3.6.1 Methods and Assumption

A hydraulic model of the Village of Greenville's existing sanitary sewer system was created with SewerCAD by Bentley Systems Incorporated. GIS data provided by the Village regarding gravity sewer mains, interceptors, force mains, lift stations, manholes, and customer meters were entered into SewerCAD to create an approximate representation of the system. Lift station pumps, wet wells, and necessary valving were added to the model manually in their respective locations.

Pump operational data for each lift station pump was used to allow the model pumps to function under realistic conditions as in the actual system. The model is calibrated to run as a steady-state simulation of either average or peak flow conditions.

Each customer meter was placed into a category of residential, commercial, industrial, or public authority. Contribution of each customer into the sewer system was assigned to each customer meter based on category. For residential customers, a per-capita flow rate metric was used to model flow. For non-residential customers, the Wisconsin Public Service Commission (PSC) 2019 Annual Report for Greenville's water system was used to estimate contributions. For these users, it was assumed that typical water demand would likely be representative of sewer contribution.

Residential contributions generally follow a diurnal curve as highest water demand occurs in the morning and evening. Therefore, multiplication factors for the residential category were greatest during the morning and evening, but lower in the middle of the day and through hours of the night.

Each water well in the Village of Greenville has on-site water treatment, which generates a backwash/waste stream that discharges into the collection system, which was also considered in the hydraulic model. To account for this flow, data sheets from each well that quantify the backwash/waste were used to estimate daily sewer contributions.

To account for the contribution of inflow and infiltration, the resultant flows from all typical users were increased by 15%.

3.6.2 Use of Model Output

The hydraulic model was used to evaluate wastewater flows through the Village's collection system and determine areas that may be subject to bottlenecks or other limitations that would restrict the ability of wastewater to flow through. Critical areas of the collection system are discussed in Section 4.4 of this Master Plan.

Estimated expansions of the Village's collection system (discussed in Section 4) were also entered into the model to verify impacts on the existing collection system. As new developments are constructed in the future and their sanitary sewer infrastructure is finalized, the model can be revised as needed.

4 FUTURE SANITARY SEWER SYSTEM

4.1 Overall Projected Future Wastewater Flows

The future average annual wastewater flow rate was determined based on existing flows, projected population growth, and projected commercial and industrial growth within the sewer service area.

The 2017-2020 wastewater flows were summarized previously in Table 3-1. The estimated average annual flow was 0.820 MGD. The estimated current per capita flow rate for Greenville customers was stated in Section 3 to be 65.9 gpcd.

The population served by the collection system is expected to increase by a total of 6,501 people over the design period. This population growth is anticipated to require expansion efforts to the existing collection system. Future wastewater flows from customer growth will be based on a calculated per capita rate of 77 gpcd, which was determined based the Village's existing data and the estimated unsewered existing population that would be sewered in future development projects. This per-capita flow rate is discussed further in this Master Plan.

Based on the above, it is projected there will be an approximate additional 501,000 gallons per day from residential growth in the design year 2051.

Future industrial, commercial, and public authority customer growth is anticipated to occur but quantity is uncertain as there are no plans for new significant customers. An assumed 10% of current average day demand will be used as the projected non-residential growth. This growth is calculated to be an additional 0.082 MGD.

The projected 2051 average daily flow rate is the sum of the existing average flow rate and the projected additional flow from new sewer users. The current average annual flow rate is 0.820 MGD and the projected flow from new users is 0.583 MGD. Therefore, the projected 2051 average day flow rate for Greenville is approximately 1.40 MGD.

The peaking factors for peak month and peak day flows were stated in Section 3.2 and are 1.26 and 2.59, respectively. These factors were used to estimate the respective flows for the design year 2051.

The projected 2051 average annual, peak month, and peak day wastewater flow rates are summarized below in Table 4-1. These flows correspond to the flow measurements that would occur at the existing Fox West outfall metering station.

Table 4-1
Summary of Current and Projected Flows – Village of Greenville Collection System

	2017-2020	2051 DESIGN
AVERAGE ANNUAL FLOW, MGD	0.820	1.40
PEAK MONTH FLOW, MGD	1.03	1.77
PEAK DAY FLOW, MGD	2.16	3.63

4.2 Development of Future Sewer Service Area

4.2.1 General Information

A template for future sewer service areas was developed based on areas identified by the Village and the Village's Comprehensive Plan. Future areas were assigned "section numbers" based on geographic location to assist in developing estimates for future wastewater flow contributions.

In total, 19 primary planning sections were created to examine areas within the Village of Greenville boundary where sewer service is not currently provided, but may be developed and/or connected within the 30-year design period. The geographic extents of each block are defined on the attached Figure 4-1. A detailed list of planning sections with additional information regarding population and wastewater flow rates is provided in Appendix A.

Following discussions with the Village regarding current development plans, some of the analyzed development sections have been excluded from the final 30-year design planning map and are not discussed further in this Master Plan. For clarify, these sections are stated below.

- Section 10:
  - South of Wisconsin Ave (Hwy WI-96), West of Municipal Drive (Hwy WI-76).
  - Legal Description of Section 27, T21N, R16E.

- Section 11:
  - South of Spencer Road, West of Hwy WI-76.
  - Legal Description of Section 34, T21N, R16E.

- Section 12:
  - East of Hwy WI-76, North of County Road BB, West of Airport.
  - Legal Description of W ½, Section 35, T21N, R16E.

4.2.2 Methods for Determination of Planning Area and Wastewater Flows

4.2.2.1 Classification of Future Service Areas and Sections

A template for future sewer service areas was developed based on areas identified by the Village and the Village's Comprehensive Plan. Future areas were assigned "primary section numbers" based on geographic location to assist in developing estimates for future wastewater flow contributions.

The boundary of each section was assigned an identification number and represents a hypothetical future "sewer main" that would provide service to existing, unsewered users within a block and anticipated future users.

Within each block, further classifications were made based on contours and elevation data. Development of user population and expected wastewater flows were determined based on these sub-section areas. Each subsection was then assigned a three digit ID number based on the primary section number and the anticipated direction of wastewater flow.

A comprehensive list of subsections analyzed in the Master Plan is provided in Appendix A and Appendix B of this Master Plan.

4.2.2.2 Quantification of Existing Users in Future Service Areas

For each analyzed section, the number of existing users and connections was estimated by review of aerial imagery. The quantity of existing, unsewered people in the section's service area was determined by multiplying the number of existing users by 2.396 in accordance with Wisconsin DOA 2020 estimates.

As of 2021, the estimate of existing population in the modeled sections who are not currently connected to the Village's sewer system is 1,833 people.

4.2.2.3 Quantification of New Users in Future Service Areas

The estimated number of new sewer users for each service section was calculated by multiplying the developable area for each section by various population density factors. The following methodology was used for this calculation:

1. The area within the section suitable for construction of future homes was determined through review of aerial imagery and existing wetland databases. The quantity of "open/developable" acres for each section was assumed equal to all area that did contain existing construction, occur within a road right-of-way, a body of water, or an established wetland.
2. The estimated "open/developable" acreage determined in #1 above for each section was multiplied by 50%; the resultant area is the assumed area that will be used by new sewer users.

3. The quantity of new sewer users for each block was calculated based on a "houses per acre" estimation. The assumed housing density for each block was determined according to the projected land use designation from the 2040 Greenville Comprehensive Plan. The following metrics were used:
    a. Tier 1 Residential Land Use: 2.55 houses per acre
        i. 90% of projected Tier 1 houses were assumed as single-family homes.
        ii. 10% of projected Tier 1 houses were assumed as two-family homes.
    b. Tier 2 Residential Land Use: 0.75 house per acre
        i. All projected Tier 2 houses were assumed as single-family homes.
    c. Tier 3 Residential Lane Use: 0.2 houses per acre
        i. All projected Tier 3 houses were assumed as single-family homes.
4. Each new user was assumed equivalent to a population of 2.396 people based on the Wisconsin DOA's 2020 estimates.

The methods stated above result in a total forecasted new population of 6,513 people served by the modeled blocks. The previously stated 30-year population projection for the Village of Greenville included 6,501 additional people. All following analysis and recommendations are based on flow contributions from an additional new service population of 6,513 people.

4.2.2.4 Design Residential Population for Future Service Areas

The design residential population for the projected 2051 sewer system expansion is equal to 8,346 people, including the total of existing and projected new sewer users as stated above.

4.2.2.5 Future Residential Wastewater Flows

Residential wastewater flow rates for each section were determined based on the size of the anticipated service population and the Village's historical wastewater flow rates. As stated in Section 3, the current estimated per capita flow rate for the Village of Greenville is approximately 65.9 gallons per capita per day (gpcd). For estimation of future flow contributions, this value was revised to discount the estimated existing 1,833 people within the Village boundary but not contributing wastewater to the collection system.

The revised per-capita flow rate is approximately 77 gpcd, and is the basis for all future wastewater flow calculations. This per-capita flow rate was addressed previously in Section 4.1.

The modeled design average daily flow rate of wastewater generated from each section to a future extension of the collection system is equal to the projected population of the section multiplied by the per capita flow rate of 77 gpcd. Peak month and peak day flows for each sub-block were calculated according to the peaking factors stated in Section 4.1.

New residential flows are assumed to be diverted through "sewer mains", or projected sewer pipe extensions of the existing collection system to provide service to new development areas. Sizing and layout of the sewer mains is discussed in Section 4.3.

4.2.2.6 Allocation of Future Commercial/Industrial Flows in Planning Area

Sections 3 and 16 of the planning area include land designated as "Industrial/Employment" according to the 2040 Comprehensive Plan. The estimated developable area for these two sections is close to equivalent; therefore it is assumed that the future commercial/industrial wastewater flow contribution of the two section areas will be approximately equal.

As stated in Section 4.1, there is expected to be approximately 82,000 gallons per day from future commercial and industrial growth within the Village. It is assumed that half of this flow will occur in the two aforementioned industrial sections.

The 2040 Comprehensive Plan also identifies an "Urban Overlay District" designation for areas anticipated to feature high traffic and are intended to be used for future commercial and retail growth. For sections designated as residential land use that fall within the Urban Overlay District area, the calculated average, the remaining 41,000 gallons per day of future flow will be allocated evenly across affected sections.

Future commercial/industrial flows are assumed to enter the existing collection system through proposed sewer mains with the new residential flows.

4.2.2.7 Summary of Future Flows in Planning Area

A summary of projected service population and all wastewater flows from future service areas is provided in Appendix B.

4.2.3 Sizing and Location of Future Sewer Mains

4.2.3.1 Future Sewer Main Network

Following estimation of design flows from individual planning sections, a network of future collection system sewer pipelines was created to illustrate general connection locations and routing for the future planning area. The proposed network of future sewer mains was developed to utilize gravity flow as much as possible and connect to the existing system at non-critical locations that would minimize impact.

The service areas for each future sewer main were estimated based on aerial imagery and contour data. These areas are roughly based on the boundaries of the future planning sections discussed previously. The boundary of each planning section was defined such that all users located within a single planning section would discharge to a single future sewer main.

All future sewer mains are indicated on the proposed future sewer service map (Figure 4-2).

4.2.3.2 Future Sewer Main Characteristics

A complete summary of all proposed future sewer service mains and relevant design information is provided in Appendix C. The following characteristics are included:

- An ID number assigned to each sewer main. The numbering system starts at No. 1 and ascends in numerical order based on the sewer main's location and contribution from local planning sections.
- Planning sections which contribute flow into the future sewer main.
- The estimated population and flow served by each individual sewer main.
- The estimated bury depth for each sewer main based on best available elevation data.
- The intended connection point of the main in the greater collection system, to one of the following conditions:
    - A separate future sewer main.
    - A manhole within the Village's existing system, identified by GIS code number.
    - An existing or future lift station.
- The estimated diameter of the sewer main, as determined by the following NR110 code requirements:
    - Sized for the estimated peak day flow rate (259% of average flow, a minimum of 250% is required).
    - Sized according to minimum installation slope requirements, based on best available elevation data.
- Approximate sewer main length and approximate elevation drop.

4.2.4 Future Lift Stations

4.2.4.1 General

It is estimated that seven additional lift stations would be required to provide full sewer service to all evaluated planning areas discussed in previous sections. A brief description of each new lift station is provided below. An informational summary for each lift station is provided in Appendix D, which includes the following:

- Planning sections which contribute flow into the lift station.
- The estimated population and flow served by each lift station.
- The intended connection point of the lift station in the greater collection system. Connection points were selected to minimize additional instances of pumping as much as possible.

- A preliminary estimated pump quantity and size as needed to operate the lift station. A recommended minimum pump flow rate is provided based on the estimated flow service requirements.

Each future lift station is identified by a blue circle on the Village's proposed future collection system map (Figure 4-2). An additional map which visualizes the approximate service areas for the proposed future lift stations is provided as Figure 4-3.

A brief description is provided for each of the lift stations below.

4.2.4.2 Lift Station No. 3

Lift Station No. 3 is tentatively planned to be located in the southeastern corner of Section 1-A-1, near the identified "Natural Resource" land use designation. This lift station is planned to provide service for all customers located within sections 1-A-1 and 1-A-2. The estimated 30-year design population for the lift station is 1,350 people and the station will pump approximately 104,000 gallons per day on average.

The planning area for Lift Station No. 3 has been considered so that the existing Joan Street Lift Station (Joan Lift Station) can be demolished if requested by the Village. In this case, users who currently drain into the Joan Lift Station would be served by Lift Station No. 3.

The preliminary discharge location for Lift Station No. 3 has been identified as a manhole located upstream of Lift Station No. 1 on Municipal Drive. If utilized, all flow from Lift Station No. 3 would need to be pumped a second time by Lift Station No. 1. An alternative discharge location can be considered in the future which eliminates the need for double pumping; however, the length of force main to achieve this may not be cost-effective.

The discharge gravity sewer is currently an 8" pipe and is expected to require a future upgrade to ensure sufficient capacity for Lift Station No. 3's wastewater flows, in addition to other planned developments. A minimum of 12" sewer pipe is anticipated to be required and is discussed further in Section 4.4. The expected wastewater flow rate that will be contributed by Lift Station No. 3 is within the projection for Lift Station No. 1's design range.

4.2.4.3 Lift Station No. 4

Lift Station No. 4 will provide service for residential customers located within planning section 2-A-1 and will be located at the northeast corner of the section along Mayflower Drive. The estimated 30-year design population for the lift station is 1,032 people and will pump approximately 80,000 gallons per day on average.

The preliminary discharge location for Lift Station No. 4 is an existing manhole near the intersection of Everglade Road and Greenwood Road. This manhole is connected to 15" sewer and drains into Lift Station No. 1. An alternative discharge location can be considered in the future which eliminates the need for double pumping; however the length of force main to achieve this may not be cost-effective.

The discharge gravity sewer is 15" piping and is expected to have sufficient capacity for Lift Station No. 4's wastewater flows without requiring an upsize. Additionally, the expected wastewater flow rate is within the projection for Lift Station No. 1's design range.

4.2.4.4 Lift Station No. 5

Lift Station No. 5 will provide service for customers located within planning sections 3-A-1 and 3-B-1. The lift station will be located along Mayflower Drive and north of the railroad crossing. The estimated 30-year design population for the lift station is 150 people. The station is expected to pump approximately 34,000 gallons per day on average and will include service for commercial/industrial users located in Section 3-A-1.

The planned discharge location for Lift Station No. 5 is a manhole on a gravity sewer located at the intersection of Mayflower Drive and Neubert Road. This sewer is 10" diameter and flows by gravity to the Village's metering station. Secondary pumping of flow is not expected to be required if this discharge location is used.

The discharge gravity sewer is expected to have sufficient capacity for Lift Station No. 5's wastewater flows without requiring an upsize.

4.2.4.5 Lift Station No. 6

Lift Station No. 6 is planned to be located near the intersections of planning sections 6, 7, 17, and 18, and will provide service to many users located within these areas depending on final development designs. The lift station is expected to provide service for a 30-year design population of 419 people and will pump approximately 52,000 gallons per day at design average conditions.

The planned force main discharge for Lift Station No. 6 is an existing 8" stub located on Julius Drive, just north of the intersection with Highway 15. This manhole is connected to 8" sewer and drains into Lift Station No. 1. An alternative discharge location can be considered in the future which eliminates the need for double pumping; however the length of force main to achieve this may not be cost-effective.

The discharge gravity sewer is an 8" stub followed by a 10" main, and is expected to have sufficient capacity for Lift Station No. 6's wastewater flows without requiring an upsize. Additionally, the expected wastewater flow rate is within the projection for Lift Station No. 1's design.

4.2.4.6 Lift Station No. 7

Lift Station No. 7 is the smallest anticipated new station and would serve approximately 81 users located in planning sections 7-B-1 and 7-B-2. This lift station would be located on North Road at the bottom of the valley between sections 7-B-1 and 7-B-2. On average this lift station would pump approximately 6,200 gallons per day.

Most users that would be served by Lift Station No. 7 occupy existing dwelling units, as little development is anticipated in the service area. Lift Station No. 7 is only anticipated to be necessary if planning Section 7-B will be connected to the existing collection system.

The planned discharge location for Lift Station No. 7 is to an existing manhole located at the intersection of Julius Drive and Spring Road. This location is within the service area for Lift Station No. 1. An alternative discharge location can be considered in the future which eliminates the need for double pumping; however the length of force main to achieve this may not be cost-effective.

The discharge gravity sewer is 12" piping and is expected to have sufficient capacity for Lift Station No. 7's flows without requiring an upsize. The additional flows are also within the design range of Lift Station No. 1.

4.2.4.7 Lift Station No. 8

Lift Station No. 8 is planned to be located near the intersection of North Road and Wisconsin Avenue. This station will provide service for residential users in planning sections 8, 9, and 13, depending on final development designs. This lift station is planned for a 30-year service population of 1,223 people and an average day flow of approximately 94,000 gallons per day.

The planned discharge location for Lift Station No. 8 is to an existing manhole located just north of Wisconsin Avenue near the Village's Well No. 5. This location is within the service area for Lift Station No. 2 and is likely the most cost-effective option.

The discharge gravity sewer is 15" piping and is expected to have sufficient capacity for Lift Station No. 8's flows without requiring an upsize. The additional flows are also within the design range of Lift Station No. 2.

4.2.4.8 Lift Station No. 9

Lift Station No. 9 is planned to be located near the intersection of North Road and Wisconsin Avenue. This station will provide service for residential users in planning sections 18 and 19, depending on final development designs. This lift station is planned for a 30-year service population of 251 people and an average day flow of approximately 20,000 gallons per day.

The planned discharge location for Lift Station No. 9 is to an existing manhole located at the intersection of Julius Drive and Spring Road. To reach this location, a force main over 4 miles would be required. The discharge location was selected because it is part of the Village's existing collection system. Evaluation of a closer, alternative discharge location is recommended in the future as extensions of the Village's collection system are completed.

This location is within the service area for Lift Station No. 1. The discharge gravity sewer is 12" piping and is expected to have sufficient capacity for Lift Station No. 9's flows without requiring an upsize. The additional flows are also within the design range of Lift Station No. 1.

4.3 Analysis of Individual Planning Sections

4.3.1 General Information

For each distinct planning section which will contribute future wastewater to the Village's collection system, a brief description and analysis of the planning section is provided, which includes the following:

- A "zoomed-in" map providing a more-detailed view of the planning section, approximate boundary, estimated direction of flow, and estimated sewer main size.
- The geographic location of the planning section and estimated service area.
- The anticipated sewer user base of the planning section, including existing users, new users, and user classification and population density.
- The estimated average daily and peak wastewater flows from the planning section.
- The proposed location to connect the planning section to the existing collection system, and whether or not a lift station is required to convey flow.
- Important considerations that would potentially impact the flow or design of sewer piping in the planning section.

4.3.2 Section 1

The enlarged sewer planning map for planning Section 1 is provided as Figure 4-4. Section 1 is located in the northeast corner of the Village, south of County Road JJ and east of Municipal Drive. The total area of Section 1 is approximately 559 acres.

Land use in Section 1 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Three sub-sections are estimated for Section 1 based on topography and area available for development. Key planning information for each sub-section is provided in Table 4-2 below.

Table 4-2
Planning Section 1 Key Information

SECTION NAME	1-A-1	1-A-2	1-B-1
APPROXIMATE SERVICE AREA, ACRES	302	204	53
EXISTING DWELLING UNITS IN SECTION	5	53	0
30-YEAR DESIGN RESIDENTIAL POPULATION	616	734	103
AVERAGE DAY WASTEWATER FLOW, GPD	47,432	56,518	7,931
PEAK DAY WASTEWATER FLOW, GPD	122,832	146,362	20,539
FUTURE SEWER MAIN CONNECTION ID	1	2	3
ESTIMATED SEWER SERVICE SIZE, IN.	8	10	8
LIFT STATION SERVICE	LIFT STATION NO. 3 / NO. 1	LIFT STATION NO. 3 / NO. 1	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E10700	MANHOLE E10700	MANHOLE E10500

Other Notes:

- All flow from Section 1 is anticipated to be serviced by Lift Station No. 1. The anticipated tie-in location upstream of the lift station is expected to require a hydraulic capacity upgrade in order to provide service for a fully developed area. This point is discussed further in Section 4.4.
- The existing Joan Street Lift Station is not required to continue providing service for existing users in Section 1-A-2 as development occurs in the future, as existing customers can be serviced by proposed Lift Station No. 3. The Joan Street Lift Station can be abandoned or demolished in this case.

4.3.3 Section 2

The enlarged sewer planning map for planning Section 2 is provided as Figure 4-5. Section 2 is located in the northeast corner of the Village, west of Mayflower Drive and north of Everglade Road. The total area of Section 2 is approximately 320 acres.

Land use in Section 2 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Only one section is estimated for Section 2 based on topography and area available for development. Key information for Section 2 is provided in Table 4-3 below.

Table 4-3
Planning Section 2 Key Information

SECTION NAME	2-A-1
APPROXIMATE SERVICE AREA, ACRES	320
EXISTING DWELLING UNITS IN SECTION	9
30-YEAR DESIGN RESIDENTIAL POPULATION	1,032
AVERAGE DAY WASTEWATER FLOW, GPD	79,464
PEAK DAY WASTEWATER FLOW, GPD	205,784
FUTURE SEWER MAIN CONNECTION ID	4
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	LIFT STATION NO. 4 / NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E11634

Other Notes:

- All flow from Section 2 is anticipated to be serviced by Lift Station No. 1. The anticipated tie-in location upstream of the lift station is not expected to require a hydraulic capacity upgrade in order to provide service for a fully developed area.
- Depending on final development design, gravity flow from the southwestern portion of Section 2-A-1 to the existing collection system may be possible. Any users located north of the Mayflower Drive/Edgewood Drive intersection will most likely need to be pumped by a lift station.

4.3.4 Section 3

The enlarged sewer planning map for planning Section 3 is provided as Figure 4-6. Section 3 is located in the eastern portion of the Village, west of Mayflower Drive and between Rawley Point Drive and Neubert Road. The Canadian National Railroad passes through Section 3 and is the basis for the boundaries of Section 3-A-1 and 3-B-1. The total area of Section 3 is 284 acres.

Land use in Section 3-A-1 is Industrial/Employment with a small number of existing dwelling units. This section will include growth from future commercial/industrial development and also an assumed additional flow contribution from being located within the Urban Overlay district.

Land use in Section 3-B-1 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Two sub-sections are estimated for Section 3 based on topography and area available for development. Key planning information for each sub-section is provided in Table 4-4 below.

Table 4-4
Planning Section 3 Key Information

SECTION NAME	3-A-1	3-B-1
APPROXIMATE SERVICE AREA, ACRES	240	44
LAND USE DESIGNATION	INDUSTRIAL/EMPLOYMENT	TIER 1 RESIDENTIAL
EXISTING DWELLING UNITS IN SECTION	6	1
30-YEAR DESIGN RESIDENTIAL POPULATION	15	135
AVERAGE DAY WASTEWATER FLOW, GPD	23,822	10,395
PEAK DAY WASTEWATER FLOW, GPD	61,690	26,919
FUTURE SEWER MAIN CONNECTION ID	5	6
ESTIMATED SEWER SERVICE SIZE, IN.	10	8
LIFT STATION SERVICE	LIFT STATION NO. 5	LIFT STATION NO. 5
COLLECTION SYSTEM TIE-IN	MANHOLE 3216	MANHOLE 3216

Other Notes:

- Flow from Section 3 will discharge to gravity sewer via Lift Station No. 5. A hydraulic capacity upgrade for the existing gravity sewer is not expected to be required.
- Depending on final design, gravity flow from the southern portion of Section 3-A-1 to the existing collection system may be possible. Users located north of the Mayflower Drive/Capitol Drive intersection will likely need to be pumped by a lift station.

4.3.5 Section 4

The enlarged sewer planning map for planning Section 4 is shown on Figure 4-7. Section 4 is located in the northern portion of the Village, and includes area south of County Road JJ and north of Hillview Road. The total area of Section 4 is approximately 319 acres.

Land use in Section 4 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Three sub-sections are estimated for Section 4 based on topography and area available for development. Key planning information for each sub-section is provided in Table 4-5 below.

Table 4-5
Planning Section 4 Key Information

SECTION NAME	4-A-1	4-A-2	4-A-3
APPROXIMATE SERVICE AREA, ACRES	97	97	125
EXISTING DWELLING UNITS IN SECTION	11	0	7
30-YEAR DESIGN RESIDENTIAL POPULATION	325	298	371
AVERAGE DAY WASTEWATER FLOW, GPD	25,025	22,946	28,567
PEAK DAY WASTEWATER FLOW, GPD	64,806	59,422	73,979
FUTURE SEWER MAIN CONNECTION ID	7	8	9
ESTIMATED SEWER SERVICE SIZE, IN.	8	10	12
LIFT STATION SERVICE	LIFT STATION NO. 1	LIFT STATION NO. 1	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E10800	MANHOLE E10800	MANHOLE E10800

Other Notes:

- All flow from Section 4 is anticipated to be serviced by Lift Station No. 1. The anticipated tie-in location upstream of the lift station is expected to require a hydraulic capacity upgrade in order to provide service for a fully developed area. This point is discussed further in Section 4.4.
- Based on estimated topography, it is intended that a single gravity flow sewer extension can provide service to all future users located in Section 4.
- The proposed tie-in manhole and routing of 12” sewer south of Section 4-A-3 may need to be modified to accommodate an existing drainage ditch at the east end of Hillview Road, near the intersection of Municipal Drive. Alternative tie-in locations should be considered once development plans for the section are established.

4.3.6 Section 5

The enlarged sewer planning map for planning Section 5 is shown on Figure 4-7. Section 5 includes the area between Hillview Road, Greenville Drive, and Municipal Drive and is located northwest of Lift Station No. 1. The Canadian National Railroad passes through Section 5 and is the general basis for the boundaries of Section 5-A-1 and 5-B-1. south of County Road JJ and east of Municipal Drive. The total area of Section 5 is approximately 296 acres.

Land use in Section 5-A-1 and 5-B-1 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Section 5-A-1 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. No commercial flow is anticipated for Section 5-B-1.

Two sub-sections are estimated for Section 5 based on topography and area available for development. Key planning information for each sub-section is provided in Table 4-6 below.

Table 4-6
Planning Section 5 Key Information

SECTION NAME	5-A-1	5-B-1
APPROXIMATE SERVICE AREA, ACRES	113	183
EXISTING DWELLING UNITS IN SECTION	7	13
30-YEAR DESIGN RESIDENTIAL POPULATION	102	383
AVERAGE DAY WASTEWATER FLOW, GPD	10,013	29,491
PEAK DAY WASTEWATER FLOW, GPD	25,930	76,371
FUTURE SEWER MAIN CONNECTION ID	10	11
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 1	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E15020	MANHOLE E10300

Other Notes:

- Flow from Section 5 will discharge to gravity sewer and be pumped by Lift Station No. 1. A hydraulic capacity upgrade for the existing gravity sewer is not expected to be required for Section 5-A-1 but will be required for Section 5-B-1.

4.3.7 Section 6

The enlarged sewer planning map for planning Section 6 is shown on Figure 4-8. Section 6 is located in the northwestern portion of the Village and includes area south of County Road JJ, north of Greenview Drive, and east of North Road. The total area of Section 6 is 571 acres.

Land use in Section 6 is classified as Tier-2 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.75 homes per developable acre.

Three general groups of sub-sections are estimated for Section 6 based on topography and area available for development. The general subsections are discussed below.

4.3.7.1 Section 6-A

Section 6-A includes three sub-sections and consists of approximately 311 acres. Key planning information is provided in Table 4-7 below.

Section 6-A-2 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. No commercial flow is anticipated for Section 6-A-1 or 6-A-3.

Table 4-7
Planning Section 6-A Key Information

SECTION NAME	6-A-1	6-A-2	6-A-3
APPROXIMATE SERVICE AREA, ACRES	98	13	200
EXISTING DWELLING UNITS IN SECTION	8	1	0
30-YEAR DESIGN RESIDENTIAL POPULATION	100	15	70
AVERAGE DAY WASTEWATER FLOW, GPD	7,700	3,314	5,390
PEAK DAY WASTEWATER FLOW, GPD	19,940	8,581	13,958
FUTURE SEWER MAIN CONNECTION ID	12	13	8
ESTIMATED SEWER SERVICE SIZE, IN.	8	8	8
LIFT STATION SERVICE	LIFT STATION NO. 1	LIFT STATION NO. 1	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E10800	MANHOLE E15182	MANHOLE E10800

Other Notes:

- Flow from Sections 6-A-1 and 6-A-3 is anticipated to be serviced by Sewer Main 8 and was included in the planning considerations for size estimating. Flow from these sections is dependent on final development design. The anticipated tie-in location upstream of the lift station for Sewer Main 8 is expected to require a hydraulic capacity upgrade in order to provide service for a fully developed area. This point is discussed further in Section 4.4.
- Section 6-A-2 is anticipated to connect to existing sanitary sewer upstream of Lift Station No. 1. This connection is location is not anticipated to require a hydraulic capacity upgrade.
- A majority of Section 6-A-3 is Natural Resource/Open Space land use and will impact the routing of sewer when developed.

4.3.7.2 Section 6-B

Section 6-B includes two sub-sections and consists of approximately 233 acres. Key planning information is provided in Table 4-8 below.

Section 6-B-1 and 6-B-2 are both assumed to have an additional commercial flow contribution from being located within the Urban Overlay District.

Table 4-8
Planning Section 6-B Key Information

SECTION NAME	6-B-1	6-B-2
APPROXIMATE SERVICE AREA, ACRES	108	125
EXISTING DWELLING UNITS IN SECTION	1	12
30-YEAR DESIGN RESIDENTIAL POPULATION	92	53
AVERAGE DAY WASTEWATER FLOW, GPD	9,243	6,240
PEAK DAY WASTEWATER FLOW, GPD	23,935	16,159
FUTURE SEWER MAIN CONNECTION ID	14	15
ESTIMATED SEWER SERVICE SIZE, IN.	8	10
LIFT STATION SERVICE	LIFT STATION NO. 6	LIFT STATION NO. 6
COLLECTION SYSTEM TIE-IN	MANHOLE E15182	MANHOLE E15182

Other Notes:

- All flow from Section 6-B is anticipated to be served by Lift Station No. 6. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.
- A majority of Section 6-B-2 is Natural Resource/Open Space land use and will impact the routing of sewer when developed.

4.3.7.3 Section 6-C

Section 6-C is one sub-section and is located in the southeastern corner of Section 6 (Figure 4-8). This section is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. The total area of Section 6-C is approximately 27 acres.

Key planning information is provided in Table 4-9 below.

Table 4-9
Planning Section 6-C Key Information

SECTION NAME	6-C-1
APPROXIMATE SERVICE AREA, ACRES	27
EXISTING DWELLING UNITS IN SECTION	2
30-YEAR DESIGN RESIDENTIAL POPULATION	25
AVERAGE DAY WASTEWATER FLOW, GPD	4,084
PEAK DAY WASTEWATER FLOW, GPD	10,575
FUTURE SEWER MAIN CONNECTION ID	19
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E15180

Other Notes:

- Section 6-C-1 is anticipated to connect to existing sanitary sewer upstream of Lift Station No. 1. This connection is location is not anticipated to require a hydraulic capacity upgrade.

4.3.8 Section 7

The enlarged sewer planning map for planning Section 7 is shown on Figure 4-8. Section 7 is located in the northwestern portion of the Village and includes area south of Greenville Drive, west of Julius Drive, north of Spring Road, and east of North Road. The total area of Section 7 is 574 acres.

Land use in Section 7 is classified as Tier-2 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.75 homes per developable acre.

Three general groups of sub-sections are estimated for Section 7 based on topography and area available for development. The general subsections are discussed below.

4.3.8.1 Section 7-A

Section 7-A includes two sub-sections and consists of approximately 125 acres, located in the northwest corner of Section 7. Key planning information is provided in Table 4-10 below.

Section 7-A-2 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. No commercial flow is anticipated for Section 7-A-1.

Table 4-10
Planning Section 7-A Key Information

SECTION NAME	7-A-1	7-A-2
APPROXIMATE SERVICE AREA, ACRES	65	60
EXISTING DWELLING UNITS IN SECTION	26	1
30-YEAR DESIGN RESIDENTIAL POPULATION	100	15
AVERAGE DAY WASTEWATER FLOW, GPD	6,930	3,160
PEAK DAY WASTEWATER FLOW, GPD	17,946	8,183
FUTURE SEWER MAIN CONNECTION ID	16	15
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 6	LIFT STATION NO. 6
COLLECTION SYSTEM TIE-IN	MANHOLE E15182	MANHOLE E15182

Other Notes:

- Flow from Section 7-A is anticipated to discharge to existing sanitary sewer upstream of Lift Station No. 1 via Lift Station No. 6. This connection is location is not anticipated to require a hydraulic capacity upgrade.

4.3.8.2 Section 7-B

Section 7-B includes two sub-sections and consists of approximately 103 acres, located in the southwestern corner of Section 7, west of North Road and north of Spring Road. Key planning information is provided in Table 4-11 below.

No commercial flow is anticipated for Section 7-B-1 or 7-B-2.

Table 4-11
Planning Section 7-B Key Information

SECTION NAME	7-B-1	7-B-2
APPROXIMATE SERVICE AREA, ACRES	15	88
EXISTING DWELLING UNITS IN SECTION	24	3
30-YEAR DESIGN RESIDENTIAL POPULATION	100	15
AVERAGE DAY WASTEWATER FLOW, GPD	5,236	1,001
PEAK DAY WASTEWATER FLOW, GPD	13,559	2,592
FUTURE SEWER MAIN CONNECTION ID	17	18
ESTIMATED SEWER SERVICE SIZE, IN.	8	10
LIFT STATION SERVICE	LIFT STATION NO. 7	LIFT STATION NO. 7
COLLECTION SYSTEM TIE-IN	MANHOLE E15577	MANHOLE E15577

Other Notes:

- Most sewer users within the 30-year design population for Section 7-B occupy existing dwelling units, as only 6 new dwelling units are estimated based on available area.
- All flow from Section 7-B is anticipated to be served by Lift Station No. 7. If Section 7-B is not connected to the existing collection system, Lift Station No. 7 is not expected to be necessary.
- Lift Station No. 7 is anticipated discharge to existing sanitary sewer upstream of Lift Station No 1. This connection is location is not anticipated to require a hydraulic capacity upgrade.

4.3.8.3 Section 7-C

Section 7-C includes three sub-sections and consists of approximately 346 acres, located in the eastern portion of Section 7, south of Greenville Drive, west of Julius Drive, and north of Spring Road. Key planning information is provided in Table 4-12 below.

Section 7-C-1 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay district. No commercial flow is anticipated for Section 7-C-2 or 7-C-3.

Table 4-12
Planning Section 7-C Key Information

SECTION NAME	7-C-1	7-C-2	7-C-3
APPROXIMATE SERVICE AREA, ACRES	87	99	160
EXISTING DWELLING UNITS IN SECTION	3	24	28
30-YEAR DESIGN RESIDENTIAL POPULATION	73	58	176
AVERAGE DAY WASTEWATER FLOW, GPD	7,780	4,466	13,552
PEAK DAY WASTEWATER FLOW, GPD	20,147	11,565	35,095
FUTURE SEWER MAIN CONNECTION ID	19	20	21
ESTIMATED SEWER SERVICE SIZE, IN.	8	8	8
LIFT STATION SERVICE	LIFT STATION NO. 1	LIFT STATION NO. 1	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E15180	MANHOLE E15600	MANHOLE E15600

Other Notes:

- Flow from Section 7-C will discharge to gravity sewer and be pumped by Lift Station No. 1. A hydraulic capacity upgrade for the existing gravity sewer is not expected to be required for full development of Section 7-C.

4.3.9 Section 8

The enlarged sewer planning map for planning Section 8 is shown on Figure 4-9. Section 8 is located in the western portion of the Village and includes area west of Julius Drive, north of School Road, east of North Road, and south of Spring Road. The total area of Section 8 is approximately 571 acres.

Land use in Section 8 is classified as Tier-2 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.75 homes per developable acre.

Three general groups of sub-sections are estimated for Section 8 based on topography and area available for development. The general subsections are discussed below.

4.3.9.1 Section 8-A

Section 8-A includes two sub-sections and consists of approximately 210 acres, located in the northeast corner of Section 8. Key planning information is provided in Table 4-13 below.

No commercial flow is anticipated for Section 8-A-1 or 8-A-2.

Table 4-13
Planning Section 8-A Key Information

SECTION NAME	8-A-1	8-A-2
APPROXIMATE SERVICE AREA, ACRES	105	105
EXISTING DWELLING UNITS IN SECTION	4	23
30-YEAR DESIGN RESIDENTIAL POPULATION	82	97
AVERAGE DAY WASTEWATER FLOW, GPD	6,314	7,469
PEAK DAY WASTEWATER FLOW, GPD	16,351	19,342
FUTURE SEWER MAIN CONNECTION ID	22	21
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 1	LIFT STATION NO. 1
COLLECTION SYSTEM TIE-IN	MANHOLE E15600	MANHOLE E15600

Other Notes:

- Flow from Section 8-A will discharge to gravity sewer and be pumped by Lift Station No. 1. A hydraulic capacity upgrade for the existing gravity sewer is not expected to be required for full development of Section 8-A.

4.3.9.2 Section 8-B

Section 8-B includes two sub-sections and consists of approximately 361 acres, located in the western portion of Section 8. Key planning information is provided in Table 4-14 below.

No commercial flow is anticipated for Section 8-B-1 or 8-B-2.

Table 4-14
Planning Section 8-B Key Information

SECTION NAME	8-B-1	8-B-2
APPROXIMATE SERVICE AREA, ACRES	189	172
EXISTING DWELLING UNITS IN SECTION	13	59
30-YEAR DESIGN RESIDENTIAL POPULATION	150	224
AVERAGE DAY WASTEWATER FLOW, GPD	11,550	17,248
PEAK DAY WASTEWATER FLOW, GPD	29,910	44,666
FUTURE SEWER MAIN CONNECTION ID	23	24
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 8	LIFT STATION NO. 8
COLLECTION SYSTEM TIE-IN	MANHOLE MP4032	MANHOLE MP4032

Other Notes:

- All flow from Section 8-B is anticipated to be served by Lift Station No. 8. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 2. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 2 in order to provide service for a fully developed area.

4.3.9.3 Section 8-C

Section 8-C is one sub-section and is located in the southeastern corner of Section 8 (Figure 4-9). This section is assumed to have only residential wastewater flow and no commercial contribution. Key planning information is provided in Table 4-15 below.

Table 4-15
Planning Section 8-C Key Information

SECTION NAME	8-C-1
APPROXIMATE SERVICE AREA, ACRES	94
EXISTING DWELLING UNITS IN SECTION	36
30-YEAR DESIGN RESIDENTIAL POPULATION	102
AVERAGE DAY WASTEWATER FLOW, GPD	7,854
PEAK DAY WASTEWATER FLOW, GPD	20,339
FUTURE SEWER MAIN CONNECTION ID	25
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	LIFT STATION NO. 2
COLLECTION SYSTEM TIE-IN	MANHOLE MP0522

Other Notes:

- Section 8-C-1 is anticipated to connect to existing sanitary sewer upstream of Lift Station No. 2. This connection is location is not anticipated to require a hydraulic capacity upgrade.

4.3.10 Section 9

The enlarged sewer planning map for planning Section 9 is shown on Figure 4-9. Section 9 is located in the western portion of the Village and includes area west of Julius Drive, south of School Road, east of North Road, and north of Wisconsin Avenue. The total area of Section 9 is approximately 473 acres.

Land use in Section 9 is classified as Tier-2 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.75 homes per developable acre.

Two general groups of sub-sections are estimated for Section 9 based on topography and area available for development. The general subsections are discussed below.

4.3.10.1 Section 9-A

Section 9-A includes two sub-sections and consists of approximately 305 acres, located in the western and central portion of Section 8. Key planning information is provided in Table 4-16 below.

No commercial flow is anticipated for Section 9-A-1 or 9-A-2.

Table 4-16
Planning Section 9-A Key Information

SECTION NAME	9-A-1	9-A-2
APPROXIMATE SERVICE AREA, ACRES	72	233
EXISTING DWELLING UNITS IN SECTION	24	59
30-YEAR DESIGN RESIDENTIAL POPULATION	58	240
AVERAGE DAY WASTEWATER FLOW, GPD	4,466	18,480
PEAK DAY WASTEWATER FLOW, GPD	11,565	47,857
FUTURE SEWER MAIN CONNECTION ID	26	27
ESTIMATED SEWER SERVICE SIZE, IN.	12	10
LIFT STATION SERVICE	LIFT STATION NO. 8	LIFT STATION NO. 8
COLLECTION SYSTEM TIE-IN	MANHOLE MP4032	MANHOLE MP4032

Other Notes:

- All flow from Section 9-A is anticipated to be served by Lift Station No. 8. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 2. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 2 in order to provide service for a fully developed area.

4.3.10.2 Section 9-B

Section 9-B includes two sub-sections and consists of approximately 168 acres, located in the northern and eastern portion of Section 8. Key planning information is provided in Table 4-17 below.

No commercial flow is anticipated for Section 9-B-1 or 9-B-2.

Table 4-17
Planning Section 9-B Key Information

SECTION NAME	9-B-1	9-B-2
APPROXIMATE SERVICE AREA, ACRES	54	114
EXISTING DWELLING UNITS IN SECTION	35	50
30-YEAR DESIGN RESIDENTIAL POPULATION	108	166
AVERAGE DAY WASTEWATER FLOW, GPD	8,316	12,782
PEAK DAY WASTEWATER FLOW, GPD	21,536	33,101
FUTURE SEWER MAIN CONNECTION ID	28	24
ESTIMATED SEWER SERVICE SIZE, IN.	8	10
LIFT STATION SERVICE	LIFT STATION NO. 8	LIFT STATION NO. 8
COLLECTION SYSTEM TIE-IN	MANHOLE MP4032	MANHOLE MP4032

Other Notes:

- All flow from Section 9-B is anticipated to be served by Lift Station No. 8. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 2. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 2 in order to provide service for a fully developed area.

4.3.11 Section 13

The enlarged sewer planning map for planning Section 13 is shown on Figure 4-10. Section 13 is located near the central portion of the Village and includes area east of Julius Drive, north of Wisconsin Avenue, and west of Municipal Drive. The total area of Section 13 is 418 acres. Well No. 5 is located between Section 13-A and 13-B.

Land use in Section 13 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Two general groups of sub-sections are estimated for Section 13 based on topography and area available for development. The general subsections are discussed below.

4.3.11.1 Section 13-A

Section 13-A includes two sub-sections and consists of approximately 254 acres, located in the western portion of Section 13. Key planning information is provided in Table 4-17 below.

Section 13-A-1 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. No commercial flow is anticipated for Section 13-A-2.

Table 4-17
Planning Section 13-A Key Information

SECTION NAME	13-A-1	13-A-2
APPROXIMATE SERVICE AREA, ACRES	92	162
EXISTING DWELLING UNITS IN SECTION	0	3
30-YEAR DESIGN RESIDENTIAL POPULATION	288	277
AVERAGE DAY WASTEWATER FLOW, GPD	24,335	21,329
PEAK DAY WASTEWATER FLOW, GPD	63,019	55,235
FUTURE SEWER MAIN CONNECTION ID	29	30
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 2	LIFT STATION NO. 2
COLLECTION SYSTEM TIE-IN	MANHOLE MP0400	MANHOLE MP0386

Other Notes:

- All flow from Section 13-A is anticipated to be served by Lift Station No. 2. The anticipated tie-in location upstream for the lift station for both Section 13-A-1 and 13-A-2 utilizes manholes on the existing 15” interceptor extending through the area. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station

No. 2 in order to provide service for a fully developed area.

- Depending on the design of final developments, multiple connection points to the existing 15" interceptor sewer may be utilized to connect Sections 13-A-1 and 13-A-2. This Master Plan assumes only one connection location for each section.

4.3.11.2 Section 13-B

Section 13-B includes two sub-sections and consists of approximately 164 acres, located in the southeastern portion of Section 13. Key planning information is provided in Table 4-18 below.

Section 13-B-1 and 13-B-2 are assumed to have an additional commercial flow contribution from being located within the Urban Overlay District.

Table 4-18
Planning Section 13-B Key Information

SECTION NAME	13-B-1	13-B-2
APPROXIMATE SERVICE AREA, ACRES	122	42
EXISTING DWELLING UNITS IN SECTION	5	1
30-YEAR DESIGN RESIDENTIAL POPULATION	215	106
AVERAGE DAY WASTEWATER FLOW, GPD	18,714	10,321
PEAK DAY WASTEWATER FLOW, GPD	48,462	26,727
FUTURE SEWER MAIN CONNECTION ID	31	32
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 2	LIFT STATION NO. 2
COLLECTION SYSTEM TIE-IN	MANHOLE MP4048	MANHOLE MP4000

Other Notes:

- All flow from Section 13-B is anticipated to be served by Lift Station No. 2. The anticipated tie-in location upstream for the lift station for both Section 13-A-1 and 13-A-2 utilizes manholes on the existing 15" interceptor extending through the area. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 2 in order to provide service for a fully developed area.
- Depending on the design of final developments, multiple connection points to the existing 15" interceptor sewer may be utilized to connect Sections 13-B-1 and 13-B-2. This Master Plan assumes only one connection location for each section.

4.3.12 Section 14

The enlarged sewer planning map for planning Section 14 is shown on Figure 4-10. Section 14 is located near the central portion of the Village and includes area south of School Road and west of Municipal Drive. The total area of Section 14 is approximately 230 acres.

Land use in Section 14-A-1 and 14-B-1 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Section 14-A-1 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. No commercial flow is anticipated for Section 14-B-1.

Two sub-sections are estimated for Section 14 based on topography and area available for development. Key planning information for each sub-section is provided in Table 4-19 below.

Table 4-19
Planning Section 14 Key Information

SECTION NAME	14-A-1	14-B-1
APPROXIMATE SERVICE AREA, ACRES	105	125
EXISTING DWELLING UNITS IN SECTION	0	25
30-YEAR DESIGN RESIDENTIAL POPULATION	314	95
AVERAGE DAY WASTEWATER FLOW, GPD	26,337	7,315
PEAK DAY WASTEWATER FLOW, GPD	68,203	18,943
FUTURE SEWER MAIN CONNECTION ID	33	34
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 2	LIFT STATION NO. 2
COLLECTION SYSTEM TIE-IN	MANHOLE MP0408	MANHOLE MP0380

Other Notes:

- Flow from Section 14 will discharge to gravity sewer and be pumped by Lift Station No. 2. A hydraulic capacity upgrade for the existing gravity sewer or Lift Station No. 2 is not expected to be required to provide service for a fully developed area.
- Depending on the design of final developments, multiple connection points to the existing 15” interceptor sewer may be utilized to connect Sections 14-A-1 and 14-B-1. This Master Plan assumes only one connection location for each section.

4.3.13 Section 15

The enlarged sewer planning map for planning Section 15 is shown on Figure 4-11. Section 15 is located near the central portion of the Village and includes area east of Municipal Drive and south of School Road. The total area of Section 15 is approximately 134 acres.

Land use in Section 15-A-1 and 15-B-1 is classified as Tier-1 residential with 90% of new homes as single-family units and the remaining 10% as two-family units. New homes are estimated based on a density of 2.55 homes per developable acre.

Section 15-A-1 is assumed to have an additional commercial flow contribution from being located within the Urban Overlay District. No commercial flow is anticipated for Section 15-B-1.

Two sub-sections are estimated for Section 15 based on topography and area available for development. Key planning information for each sub-section is provided in Table 4-20 below.

Table 4-20
Planning Section 15 Key Information

SECTION NAME	15-A-1	15-B-1
APPROXIMATE SERVICE AREA, ACRES	59	75
EXISTING DWELLING UNITS IN SECTION	0	0
30-YEAR DESIGN RESIDENTIAL POPULATION	201	254
AVERAGE DAY WASTEWATER FLOW, GPD	17,636	19,558
PEAK DAY WASTEWATER FLOW, GPD	45,670	50,648
FUTURE SEWER MAIN CONNECTION ID	35	36
ESTIMATED SEWER SERVICE SIZE, IN.	8	10
LIFT STATION SERVICE	LIFT STATION NO. 2	N/A
COLLECTION SYSTEM TIE-IN	MANHOLE MP1692	MANHOLE 4136

Other Notes:

- Flow from Section 15-A-1 will discharge to gravity sewer and be pumped by Lift Station No. 2. A hydraulic capacity upgrade for the existing gravity sewer or Lift Station No. 2 is not expected to be required to provide service for a fully developed area.
- The current planning map shows two separate connections for Section 15-A-1 to the existing collection system. Depending on final development design, only one connection may be required.
- Flow from Section 15-B-1 will discharge to gravity sewer and flow directly to the Village's metering station. A lift station is not anticipated to be required for sewer service to developments in Section 15-B-1.

4.3.14 Section 16

The enlarged sewer planning map for planning Section 16 is provided as Figure 4-6. Section 16 is located in the eastern portion of the Village, west of Mayflower Drive, south of Greenville Drive, east of County Road CB, and north of Wisconsin Avenue. The total area of Section 16 is approximately 215 acres.

Land use in Section 16-A-1 is Industrial/Employment with no existing dwelling units. This section will include growth from future commercial/industrial development and also an assumed additional flow contribution from being located within the Urban Overlay District.

Key planning information is provided in Table 4-21 below.

Table 4-21
Planning Section 16-A-1 Key Information

SECTION NAME	16-A-1
APPROXIMATE SERVICE AREA, ACRES	215
EXISTING DWELLING UNITS IN SECTION	0
30-YEAR DESIGN RESIDENTIAL POPULATION	0
AVERAGE DAY WASTEWATER FLOW, GPD	22,667
PEAK DAY WASTEWATER FLOW, GPD	58,699
FUTURE SEWER MAIN CONNECTION ID	37
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	N/A
COLLECTION SYSTEM TIE-IN	MANHOLE 3032

Other Notes:

- Flow from Section 16-A-1 will discharge to gravity sewer and flow directly to the Village's metering station. A lift station is not anticipated to be required for sewer service to commercial developments in Section 16-A-1.
- No hydraulic capacity upgrade is expected to be required to provide sewer service for development in Section 16-A-1.

4.3.15 Section 17

The enlarged sewer planning map for planning Section 17 is shown on Figure 4-12. Section 17 is located in the northwest portion of the Village and includes area north of Greenville Drive, south of County Road JJ, and west of North Road. The total area of Section 17 is approximately 242 acres.

Land use in Section 17 is classified as Tier-3 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.20 homes per developable acre.

Two general groups of sub-sections are estimated for Section 17 based on topography and area available for development. The general subsections are discussed below.

4.3.15.1 Section 17-A

Section 17-A is one sub-section and is located in the northeastern corner of Section 6 (Figure 4-12). This section is assumed to have only residential wastewater flow and no additional commercial flow contribution. Key planning information is provided in Table 4-22 below.

Table 4-22
Planning Section 17-A Key Information

SECTION NAME	17-A-1
APPROXIMATE SERVICE AREA, ACRES	44
EXISTING DWELLING UNITS IN SECTION	3
30-YEAR DESIGN RESIDENTIAL POPULATION	18
AVERAGE DAY WASTEWATER FLOW, GPD	1,386
PEAK DAY WASTEWATER FLOW, GPD	3,589
FUTURE SEWER MAIN CONNECTION ID	14
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	LIFT STATION NO. 6
COLLECTION SYSTEM TIE-IN	MANHOLE E15182

Other Notes:

- All flow from Section 17-A is anticipated to be served by Lift Station No. 6. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.

4.3.15.2 Section 17-B

Section 17-B includes two sub-sections and consists of approximately 198 acres. Key planning information is provided in Table 4-23 below.

Section 17-B-1 and 17-B-2 are both assumed to have an additional commercial flow contribution from being located within the Urban Overlay District.

Table 4-23
Planning Section 17-B Key Information

SECTION NAME	17-B-1	17-B-2
APPROXIMATE SERVICE AREA, ACRES	48	150
EXISTING DWELLING UNITS IN SECTION	6	2
30-YEAR DESIGN RESIDENTIAL POPULATION	25	39
AVERAGE DAY WASTEWATER FLOW, GPD	4,084	5,162
PEAK DAY WASTEWATER FLOW, GPD	10,575	13,367
FUTURE SEWER MAIN CONNECTION ID	38	38
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 6	LIFT STATION NO. 6
COLLECTION SYSTEM TIE-IN	MANHOLE E15182	MANHOLE E15182

Other Notes:

- All flow from Section 17-B is anticipated to be served by Lift Station No. 6. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.

4.3.16 Section 18

The enlarged sewer planning map for planning Section 18 is shown on Figure 4-12. Section 18 is located in the northwest portion of the Village and includes area south of Greenville Drive, north of Hillview Road, east of Manley Road, and west of North Road. The total area of Section 18 is approximately 333 acres.

Land use in Section 18 is classified as Tier-3 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.20 homes per developable acre.

Two general groups of sub-sections are estimated for Section 18 based on topography and area available for development. The general subsections are discussed below.

4.3.16.1 Section 18-A

Section 18-A includes two sub-sections and consists of approximately 188 acres. Key planning information is provided in Table 4-24 below.

Section 18-A-1 and 18-A-2 are both assumed to have an additional commercial flow contribution from being located within the Urban Overlay District.

Table 4-24
Planning Section 18-A Key Information

SECTION NAME	18-A-1	18-A-2
APPROXIMATE SERVICE AREA, ACRES	97	91
EXISTING DWELLING UNITS IN SECTION	10	5
30-YEAR DESIGN RESIDENTIAL POPULATION	36	27
AVERAGE DAY WASTEWATER FLOW, GPD	4,931	4,238
PEAK DAY WASTEWATER FLOW, GPD	12,769	10,974
FUTURE SEWER MAIN CONNECTION ID	38	38
ESTIMATED SEWER SERVICE SIZE, IN.	8	8
LIFT STATION SERVICE	LIFT STATION NO. 6	LIFT STATION NO. 6
COLLECTION SYSTEM TIE-IN	MANHOLE E15182	MANHOLE E15182

Other Notes:

- All flow from Section 18-A is anticipated to be served by Lift Station No. 6. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.

4.3.16.2 Section 18-B

Section 18-B is one sub-section and is located in the southwestern corner of Section 18 (Figure 4-12). This section is assumed to have only residential wastewater flow and no additional commercial flow contribution. Key planning information is provided in Table 4-25 below.

Table 4-25
Planning Section 18-B Key Information

SECTION NAME	18-B-1
APPROXIMATE SERVICE AREA, ACRES	145
EXISTING DWELLING UNITS IN SECTION	6
30-YEAR DESIGN RESIDENTIAL POPULATION	37
AVERAGE DAY WASTEWATER FLOW, GPD	2,849
PEAK DAY WASTEWATER FLOW, GPD	7,378
FUTURE SEWER MAIN CONNECTION ID	39
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	LIFT STATION NO. 9
COLLECTION SYSTEM TIE-IN	MANHOLE E15577

Other Notes:

- All flow from Section 18-B is anticipated to be served by Lift Station No. 9. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.

4.3.17 Section 19

The enlarged sewer planning map for planning Section 19 is shown on Figure 4-13. Section 19 is located in the northwest corner of the Village and includes area south and west of Greenville Drive, north of Hillview Road, west of Manley Road, and east of Greendale Road. The total area of Section 19 is approximately 600 acres.

Land use in Section 19 is classified as Tier-3 residential with all new homes planned as single-family units. New homes are estimated based on a density of 0.20 homes per developable acre.

Two general groups of sub-sections are estimated for Section 19 based on topography and area available for development. The general subsections are discussed below.

4.3.17.1 Section 19-A

Section 19-A includes three sub-sections and consists of approximately 550 acres. No commercial flow is anticipated for any development within Section 19-A. Key planning information is provided in Table 4-26 below.

Table 4-26
Planning Section 19-A Key Information

SECTION NAME	19-A-1	19-A-2	19-A-3
APPROXIMATE SERVICE AREA, ACRES	51	388	111
EXISTING DWELLING UNITS IN SECTION	3	25	17
30-YEAR DESIGN RESIDENTIAL POPULATION	18	140	56
AVERAGE DAY WASTEWATER FLOW, GPD	1,386	10,780	4,312
PEAK DAY WASTEWATER FLOW, GPD	3,589	27,916	11,167
FUTURE SEWER MAIN CONNECTION ID	39	39	40
ESTIMATED SEWER SERVICE SIZE, IN.	8	8	8
LIFT STATION SERVICE	LIFT STATION NO. 9	LIFT STATION NO. 9	LIFT STATION NO. 9
COLLECTION SYSTEM TIE-IN	MANHOLE E15577	MANHOLE E15577	MANHOLE E15577

Other Notes:

- All flow from Section 19-A is anticipated to be served by Lift Station No. 9. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.

4.3.17.2 Section 19-B

Section 19-B is one sub-section and is located in the northeastern corner of Section 19 (Figure 4-13). This section is assumed to have residential wastewater flow and commercial flow contribution from being located within the Urban Overlay District. Key planning information is provided in Table 4-27 below.

Table 4-27
Planning Section 18-B Key Information

SECTION NAME	19-B-1
APPROXIMATE SERVICE AREA, ACRES	50
EXISTING DWELLING UNITS IN SECTION	1
30-YEAR DESIGN RESIDENTIAL POPULATION	13
AVERAGE DAY WASTEWATER FLOW, GPD	3,160
PEAK DAY WASTEWATER FLOW, GPD	8,183
FUTURE SEWER MAIN CONNECTION ID	38
ESTIMATED SEWER SERVICE SIZE, IN.	8
LIFT STATION SERVICE	LIFT STATION NO. 6
COLLECTION SYSTEM TIE-IN	MANHOLE E15182

Other Notes:

- All flow from Section 19-B is anticipated to be served by Lift Station No. 6. The anticipated tie-in location upstream for the lift station is within the service area for Lift Station No. 1. No hydraulic capacity upgrades are anticipated for the receiving sewer line or Lift Station No. 1 in order to provide service for a fully developed area.

4.4 Impacts of Future Planning Areas on Existing Collection System

4.4.1 General Information

This section of the development identifies major components of the Village's existing collection system that will be impacted by development of future service area. Potential modifications or recommended planning actions for each component are stated where applicable.

4.4.2 Lift Station No. 1

Based on the estimates provided in this Master Plan, Lift Station No. 1 is anticipated to receive an approximate additional 435,000 gallons per day, on average, from new customers according to the proposed Master Plan.

As stated in Section 3.3, Lift Station No. 1 has design capacity for an average day flow of approximately 777,000 gpd and a peak day flow of 2.3 MGD. The estimated 30-year design average flow for a fully developed service area for Lift Station No. 1 is 878,641 gallons per day, which is greater than the current design value. The estimated 30-year peak day flow rate to be serviced by Lift Station No. 1 is approximately 2.28 MGD, which is nearly equal to the current design value.

As currently planned, Lift Station No. 1 may require a pumping capacity upgrade in the future. The current wastewater pumps are expected to be adequate for anticipated flows and dwelling unit contributions but should be continuously evaluated in the future as various development plans and new sewer connections are finalized.

It is recommended that the Village continually evaluate wastewater flows serviced by Lift Station No. 1 as developments are built in the future in order understand if flows are approaching the design average capacity of the station.

4.4.3 Lift Station No. 2

Based on the estimates provided in this Master Plan, Lift Station No. 2 is anticipated to receive an approximate additional 207,000 gallons per day, on average, from new customers according to the proposed Master Plan.

As stated in Section 3.3, Lift Station No. 2 has design capacity for an average day flow of approximately 446,000 gpd and a peak day flow of 1.56 MGD. The estimated 30-year design average flow for a fully developed service area for Lift Station No. 2 is 533,475 gallons per day, which is greater than the current design value. The estimated 30-year peak day flow rate to be serviced by Lift Station No. 1 is approximately 1.39 MGD, which is approximately 89% of the stated peak design capacity.

As currently planned, Lift Station No. 2 may require a pumping capacity upgrade in the future. The current wastewater pumps are expected to be adequate for anticipated flows and dwelling

unit contributions but should be continuously evaluated in the future as various development plans and new sewer connections are finalized.

It is recommended that the Village continually evaluate wastewater flows serviced by Lift Station No. 2 as developments are built in the future in order understand if flows are approaching the design average capacity of the station.

4.4.4 Joan Street Lift Station

As stated in Section 3.3 and Section 4.3, the Joan Street Lift Station is not expected to be required as Section 1-A-2 is fully developed and proposed Lift Station No. 3 is constructed. In this case, the existing sewer connection to the lift station can be tied into the new sanitary sewer for developments in Section 1-A-2 and routed by gravity to Lift Station No. 3. As mentioned elsewhere, Lift Station No. 3 would then discharge to the Lift Station No. 1 service area.

4.4.5 Other Collection System Recommendations

The following items are identified as areas of the existing collection system that should be reviewed for increasing hydraulic capacity in the future in order to provide service for future developments:

- Approximately 2,800 linear feet of existing 8” sewer, located on Municipal Drive between Hillview Road and Everglade Road, should be upsized to account for flows from future population growth. Growth occurring primarily in Section 1 and Section 4 will contribute significantly to this sewer corridor. A minimum 12” sewer between Hillview Road and Everglade Road is recommended.
    - Replacement of the 8” sewer is recommended to be completed simultaneously with the future planned Wisconsin Department of Transportation (WisDOT) project to replace State Highway 76 in Greenville (Municipal Drive).
- Between Sections 13-A-1 and 14-B-1, there is an approximate 400 linear foot section of gravity sewer between Manhole MP0404 and Manhole MP0402 that appears to be 12” diameter sewer, according to Village records. Based on data for adjacent sewer, this pipe would be expected to be 15” in order to provide continuity of upstream and downstream 15” gravity sewer.
    - The diameter of the sewer between Manhole MP0404 and Manhole MP0402 should be verified. If this sewer is 15” diameter, no action is required. If the sewer is 12” diameter, it should be upsized to a 15” diameter line.

4.4.6 Future Collection System Expansion

This Master Plan has provided a road map plan for future improvements but revisions are anticipated within the 30-year design period as developments and new construction occurs. It is recommended that this Master Plan be continuously revisited and updated as the Village's collection system service area grows.

Addendums to this Master Plan, which can reflect as-built conditions and updates to the collection system layout, can be incorporated into Section 6 of this document for comprehensiveness.

5 COST ESTIMATES FOR FUTURE SEWER CONSTRUCTION

This section will include cost estimates for select planning sections and projects identified by the Village following preliminary review of the proposed Master Plan.

5.1 Highway 76 – Replacement of 8" Sewer Cost Estimate

The cost estimate for this project includes the following:

- Trenching and removal of existing sanitary sewer.
- Installation of new 12" sanitary sewer for the extents identified in this report.
- Sanitary sewer manholes.
- Sanitary sewer laterals and connections.
- Select backfill and site and road restoration.
- Erosion and traffic control.
- Engineering and administrative fees.
- Contingency to reflect anticipated price changes.

The cost estimate to complete this project is $850,000 to $900,000.

5.2 Lift Station Cost Estimates

For each new lift station, it is assumed that the following structures and equipment would be provided:

- An above-grade masonry and concrete building for housing control panels, odor removal equipment, valve vault, access to lift station valves, metering equipment, and other instrumentation.
- A below-grade concrete manhole or wet well for influent wastewater.
- Two submersible pumps, estimated to range from 10 HP to 20 HP motor in size, per pump.
- A magnetic in-line flow meter.
- Chemical feed equipment and chemical storage for odor removal.
- Control panels for pumps and instrumentation.
- A standby emergency generator.

Additional lift station construction costs will include installation of forcemain from the lift station to the designated connection point in the existing collection system. Forcemain costs were estimated based on a unit price of $65 per linear foot of pipe. Additional costs include provision of air relief manholes, select backfill, restoration, erosion control, and traffic control.

Finally, the cost estimate includes engineering and administrative fees, as well as a contingency to reflect anticipated price changes.

A summary of expected construction costs for each proposed lift station, based on 2021 market conditions, is provided below in Table 5-1.

Table 5-1
Lift Station Cost Estimates

PROPOSED LIFT STATION	TOTAL LIFT STATION CONSTRUCTION COST ESTIMATE
LIFT STATION NO. 3	$1,600,000 - $1,700,000
LIFT STATION NO. 4	$2,000,000 - $2,100,000
LIFT STATION NO. 5	$1,400,000 - $1,500,000
LIFT STATION NO. 6	$1,600,000 - $1,700,000
LIFT STATION NO. 7	$1,750,000 - $1,850,000
LIFT STATION NO. 8	$2,400,000 - $2,500,000
LIFT STATION NO. 9	$3,250,000 - $3,350,000

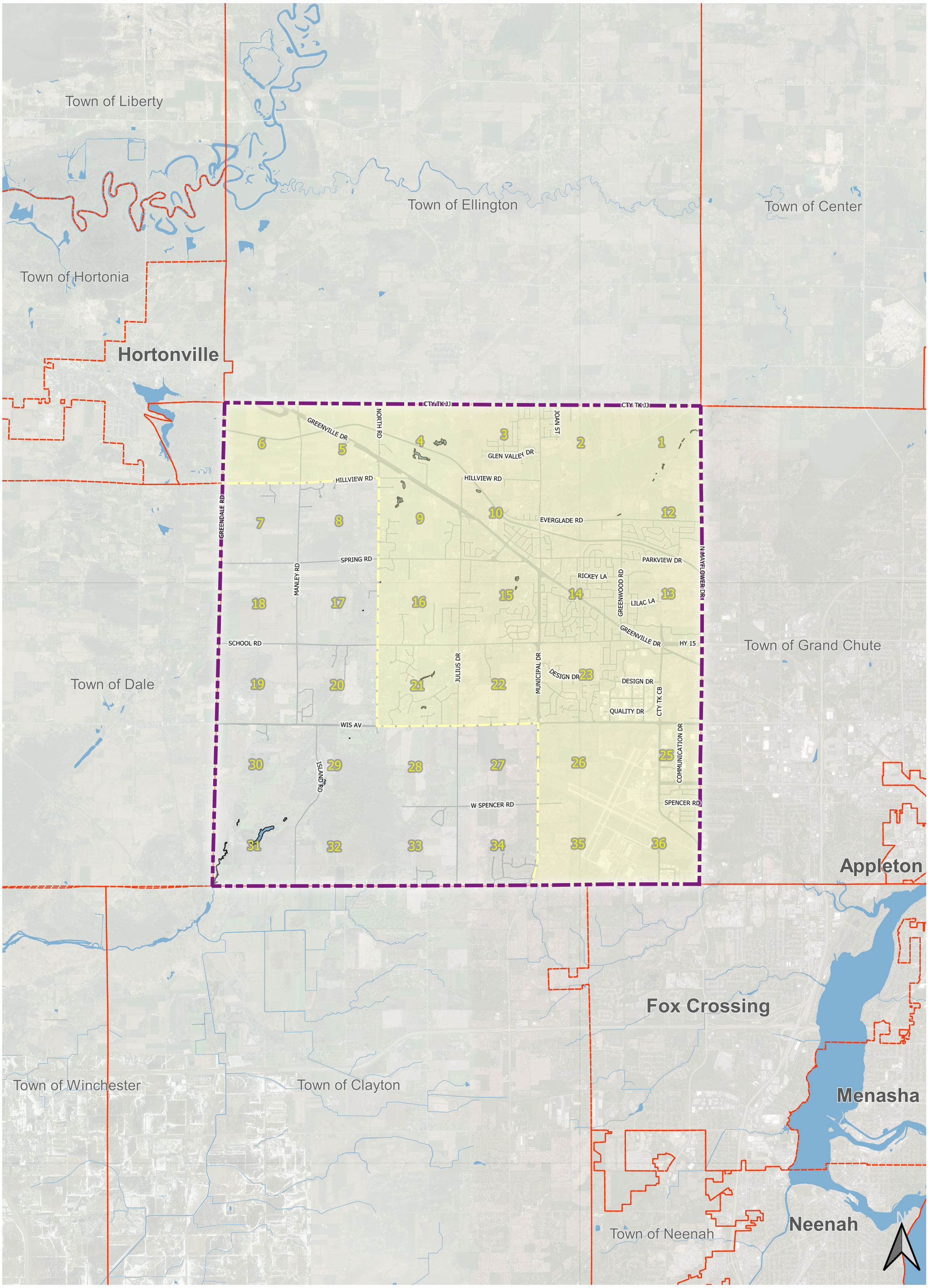
6 MASTER PLAN ADDENDUMS

Future addendums to this Master Plan which describe modifications to the layout of planning sections and construction of new collection system piping, following the original publication of the Master Plan, will be provided in this section.

FIGURES

A list and description of figures provided as part of this Master Plan is stated below. All figures are included in this section of the Master Plan:

- Figure 2-1: Village of Greenville General Location Map
- Figure 2-2: Village of Greenville Existing Collection System Map
- Figure 2-3: Topographic Map for Village of Greenville Existing Boundary
- Figure 2-4: Existing Collection System and Topographic Map
- Figure 2-5: Estimated Land Use Map for Village of Greenville, originally provided in 2040 Comprehensive Plan
- Figure 3-1: Approximate Service Areas for Existing Lift Stations
- Figure 4-1: Location and Overview Map for Future Planning Sections
- Figure 4-2: Proposed Future Collection System Map
- Figure 4-3: Proposed Service Areas for Future Lift Stations
- Figure 4-4: Enlarged Sewer Planning Map for Section 1
- Figure 4-5: Enlarged Sewer Planning Map for Section 2
- Figure 4-6: Enlarged Sewer Planning Map for Section 3 and Section 16
- Figure 4-7: Enlarged Sewer Planning Map for Section 4 and Section 5
- Figure 4-8: Enlarged Sewer Planning Map for Section 6 and Section 7
- Figure 4-9: Enlarged Sewer Planning Map for Section 8 and Section 9
- Figure 4-10: Enlarged Sewer Planning Map for Section 13 and Section 14
- Figure 4-11: Enlarged Sewer Planning Map for Section 15
- Figure 4-12: Enlarged Sewer Planning Map for Section 17 and Section 18
- Figure 4-13: Enlarged Sewer Planning Map for Section 19



VILLAGE OF GREENVILLE
MASTER PLAN STUDY AREA

JOB NO. G5992-052	SET TYPE FINAL
DRAWN BY SIH	FIGURE NO. 2-1
CHECKED BY JMM	DATE DECEMBER 2021

Village of Greenville General Location Map

Cedar Corporation

CTY TK JJ
CTY TK JJ
CTY TK JJ
JULIUS DR
HEAVENLY DR
LEARNING WAY
MUNUCIPAL DR
JOAN STREET LIFT STATION
CANADIAN NATIONAL RR
HILLVIEW RD
HILLVIEW RD
GREENVILLE DR
NORTH MAYFLOWER DR
LIFT STATION NO.1
EVERGLADE RD
DONNA DR
CANADIAN NATIONAL RR
GREENWOOD RD
CANADIAN NATIONAL RR
PARKVIEW DR
NORTH RD
GREENVILLE DR
SPRING RD
SPRING RD
JULIUS DR
LIFT STATION NO.2
RIDGEWAY DR
RICKEY LA
GREENWOOD RD
PRAIRIE CT
W CAPITOL DR
SUMMER VIEW DR
NORTH RD
SCHOOL RD
SCHOOL RD
MUNUCIPAL DR
THRUSH DR
GREENVILLE DR
STATE HIGHWAY 15
DESIGN DR
SPRING VALLEY DR
COUNTY RD CB
WISCONSIN AV
WISCONSIN AV
WISCONSIN AVE
NORTH MAYFLOWER DR
COMMUNICATION DR
MUNUCIPAL DR
W SPENCER RD
CTY TK CB
ARES DR
COUNTY ROAD BB
METER STATION

LEGEND

- 6-INCH OR LESS SEWER MAIN
- 8-INCH SEWER MAIN
- 10-INCH SEWER MAIN
- 12-INCH SEWER MAIN
- 15-INCH SEWER MAIN
- 18-INCH SEWER MAIN
- 21-INCH SEWER MAIN
- 30-INCH SEWER MAIN
- 2-INCH FORCE MAIN
- 4-INCH FORCE MAIN
- 14-INCH FORCE MAIN
- 16-INCH FORCE MAIN
- EXISTING LIFT STATION
- MANHOLE
- VILLAGE OF GREENVILLE

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	2-2
CHECKED BY	DATE
JMM	DECEMBER 2021

SCALE
0 600' 1200' 2400'

VILLAGE OF GREENVILLE

EXISTING COLLECTION SYSTEM MAP
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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Town of Ellington

Hortonville

Town of Dale

Town of Clayton

Fox Crossing

N

10 ft CONTOURS
GREENVILLE SANITARY DISTRICT
VILLAGE OF GREENVILLE
WATER FEATURES

JOB NO. G5992-052	SET TYPE FINAL
DRAWN BY SIH	FIGURE NO. 2-3
CHECKED BY JMM	DATE DECEMBER 2021

0 1,600 3,200 ft

Village of Greenville Existing Water Distribution Map

Cedar Corporation

Town of Ellington

Hortonville

Town of Center

Town of Dale

Town of Clayton

Fox Crossing

Joan LS

LS NO. 1

LS NO. 2

Meter Station

CTY TK JJ

EVERGLADE RD

SPRING RD

HILLVIEW RD

SCHOOL RD

WIS AV

W SPENCER RD

SPENCER RD

COLLEGE AV

NEUBERT RD

HY 15

PRAIRIE CT

WESTHAVEN DR

ROCKDALE LA

GREENRIDGE DR

WINDWARD DR

SUNNYVALE LA

CEDAR DR

LILAC LA

RICKEY LA

PARKVIEW DR

ROCKY MOUNTAIN DR

MAPLE TERRACE RD

HYACINTH LA

MEDINA DR

RIDGEWAY DR

GREENWOOD RD

STAR DUST DR

SWANEE CIR

N MAYFLOWER DR

GREENVILLE DR

LEVI DR

THRUSH DR

ELLEN LA

DESIGN DR

SPECIALTY DR

CRAFTSMEN DR

QUALITY DR

CHARLEEN LA

FALLON LA

GLENVIEW DR

ENDEAVOUR DR

COMMUNICATION DR

CTY TK CB

AERO TECH DR

LONG CT

PATHFINDER DR

ARES DR

TWO MILE RD

SUNSET DR

SUNRISE TR

MUNICIPAL DR

CLEARY ST

CHURCHILL RD

JULIUS DR

BUMAN WAY

BRUSH RUN

SPRING VALLEY DR

PEACEFUL CT

RIVER DR

TERRACE DR

PULS FARM PL

GLEN VALLEY DR

NORTH RD

MANLEY RD

BENNETT CIR

LUNDEEN DR

GREENDALE RD

ISLAND RD

CTY TK JJ

- 6 INCH OR LESS SEWER MAIN
- 8 INCH SEWER MAIN
- 10 INCH SEWER MAIN
- 12 INCH SEWER MAIN
- 15 INCH SEWER MAIN
- 18 INCH SEWER MAIN
- 21 INCH SEWER MAIN
- 30 INCH SEWER MAIN
- 2 INCH FORCE MAIN
- 4 INCH FORCE MAIN
- 14 INCH FORCE MAIN
- 16 INCH FORCE MAIN
- L liftstations
- Manholes
- 10 ft CONTOURS
- GREENVILLE SANITARY DISTRICT
- VILLAGE OF GREENVILLE
- WATER FEATURES

JOB NO. G5992-052	SET TYPE FINAL
DRAWN BY SIH	FIGURE NO. 2-4
CHECKED BY JMM	DATE DECEMBER 2021

0 1,600 3,200 ft

Topographic Map for Village of Greenville Existing Boundary

Cedar Corporation

N

Figure 2-5: Village Land Use Map
taken from 2040 Comprehensive Plan

Village of Hortonville
Town of Hortonia
Town of Ellington
Town of Center
Town of Dale
Town of Grand Chute
Town of Clayton
Village of Fox Crossing
WINNEBAGO COUNTY
Canadian National
JJ
15
76
96
GV
CB
CA
BB

Future Land Use District (applicable zoning)

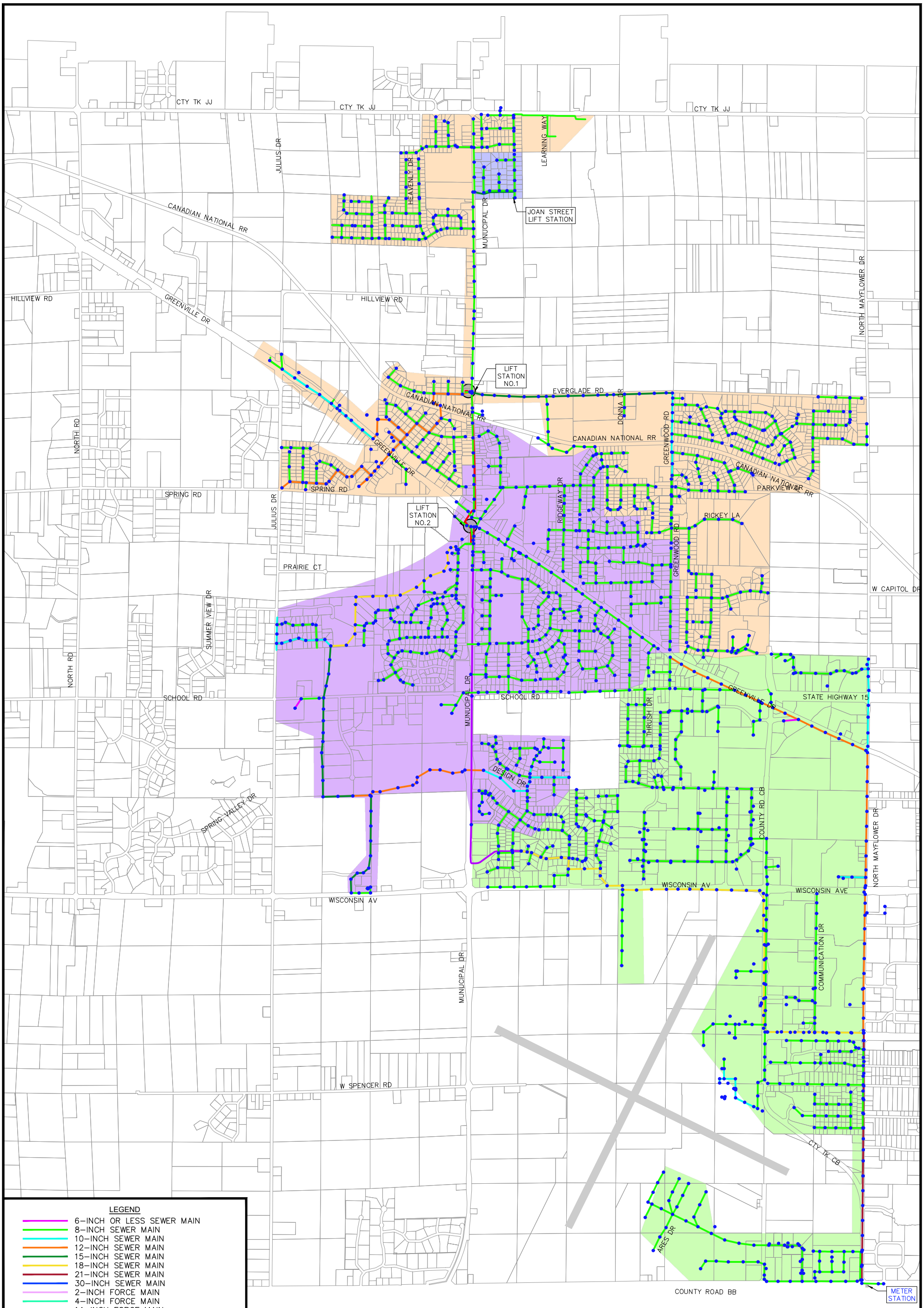
- Suburban Residential - Tier 1 (R-1, R-2, R-3, NC, INST, OS)
- Limited Service Residential - Tier II (R-1/Rural/Conservation, INST, OS)
- Agricultural - Tier III (AED, AGD, INST, OS)
- Open Space & Natural Resource (INST, OS)
- Industrial/Employment (R-3, BP, IND, INST, OS)
- Airport (Airport)
- Mobile Home (MH)
- Heritage Overlay (R-1, R-2, R-3, GC, Heritage)
- Urban Overlay (R-3, GC, CP, INST, UCO)
- Gateway
- Potential Roundabout
- Private Road
- Local Road
- County Highway
- State Highway
- Officially Mapped Road
- Future Road
- Airport Boundary
- Greenville Boundary
- Municipality

See Framing Concept 4b: A District Approach for detailed description of each District

Source: Transportation, Boundaries, - Outagamie County, 2018; Natural Resource Areas - ECWRPC, 2010; Officially Mapped & Future Roads, Future Land Use Districts, Overlay & Districts - Greenville, 2019

Prepared May 3, 2019 By:
Greenville - GIS Department
W6860 Parkview Dr.
P.O. Box 60
Greenville, WI 54942
(920)757-7276 Phone
(920)757-6342 Fax
Website: www.townofgreenville.com
Email: gis@townofgreenville.com

jt: F:\GIS\Maps\Jennifer\CED\CompPlan



LEGEND

- 6-INCH OR LESS SEWER MAIN
- 8-INCH SEWER MAIN
- 10-INCH SEWER MAIN
- 12-INCH SEWER MAIN
- 15-INCH SEWER MAIN
- 18-INCH SEWER MAIN
- 21-INCH SEWER MAIN
- 30-INCH SEWER MAIN
- 2-INCH FORCE MAIN
- 4-INCH FORCE MAIN
- 14-INCH FORCE MAIN
- 16-INCH FORCE MAIN
- EXISTING LIFT STATION
- MANHOLE
- JOAN LIFT STATION SERVICE AREA
- LIFT STATION NO. 1 SERVICE AREA
- LIFT STATION NO. 2 SERVICE AREA
- GRAVITY FLOW

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	3-1
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JMM	DECEMBER 2021

SCALE
0 600' 1200' 2400'

VILLAGE OF GREENVILLE

APPROXIMATE SERVICE AREAS FOR
EXISTING LIFT STATIONS
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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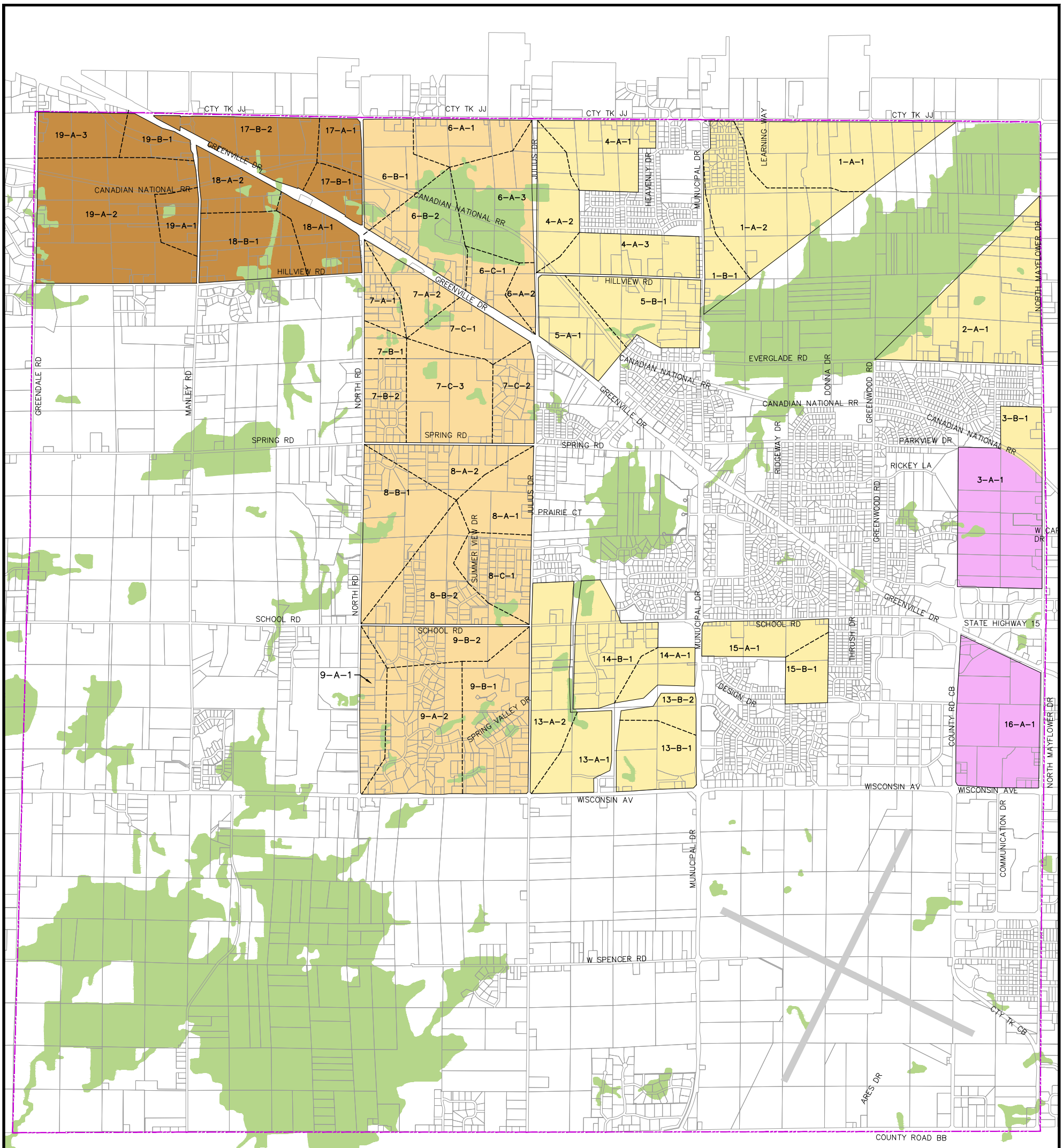


LEGEND

- PLANNING SECTION BOUNDARY
- VILLAGE OF GREENVILLE
- 8-INCH PROPOSED SEWER MAIN
- 10-INCH PROPOSED SEWER MAIN
- 12-INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

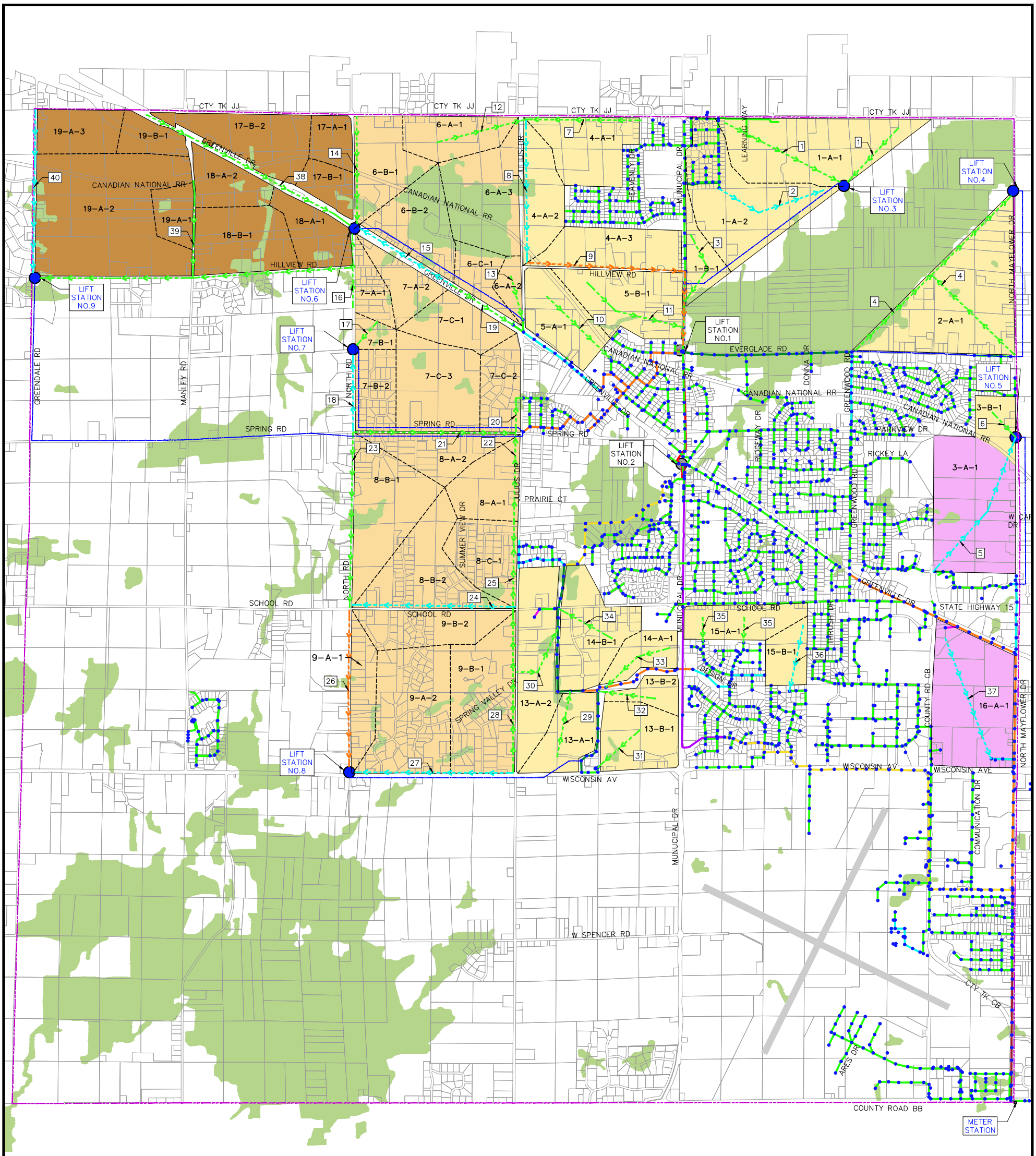
JOB NO. G5992-052	SET TYPE FINAL
DRAWN BY MLW	FIGURE NO. 4-1
CHECKED BY JMM	DATE DECEMBER 2021

SCALE
0 800' 1600' 3200'

VILLAGE OF GREENVILLE

LOCATION MAP FOR FUTURE PLANNING SECTIONS
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation



LEGEND

- 6-INCH OR LESS SEWER MAIN
- 8-INCH SEWER MAIN
- 10-INCH SEWER MAIN
- 12-INCH SEWER MAIN
- 15-INCH SEWER MAIN
- 18-INCH SEWER MAIN
- 21-INCH SEWER MAIN
- 30-INCH SEWER MAIN
- 2-INCH FORCE MAIN
- 4-INCH FORCE MAIN
- 14-INCH FORCE MAIN
- 16-INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8-INCH PROPOSED SEWER MAIN
- 10-INCH PROPOSED SEWER MAIN
- 12-INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

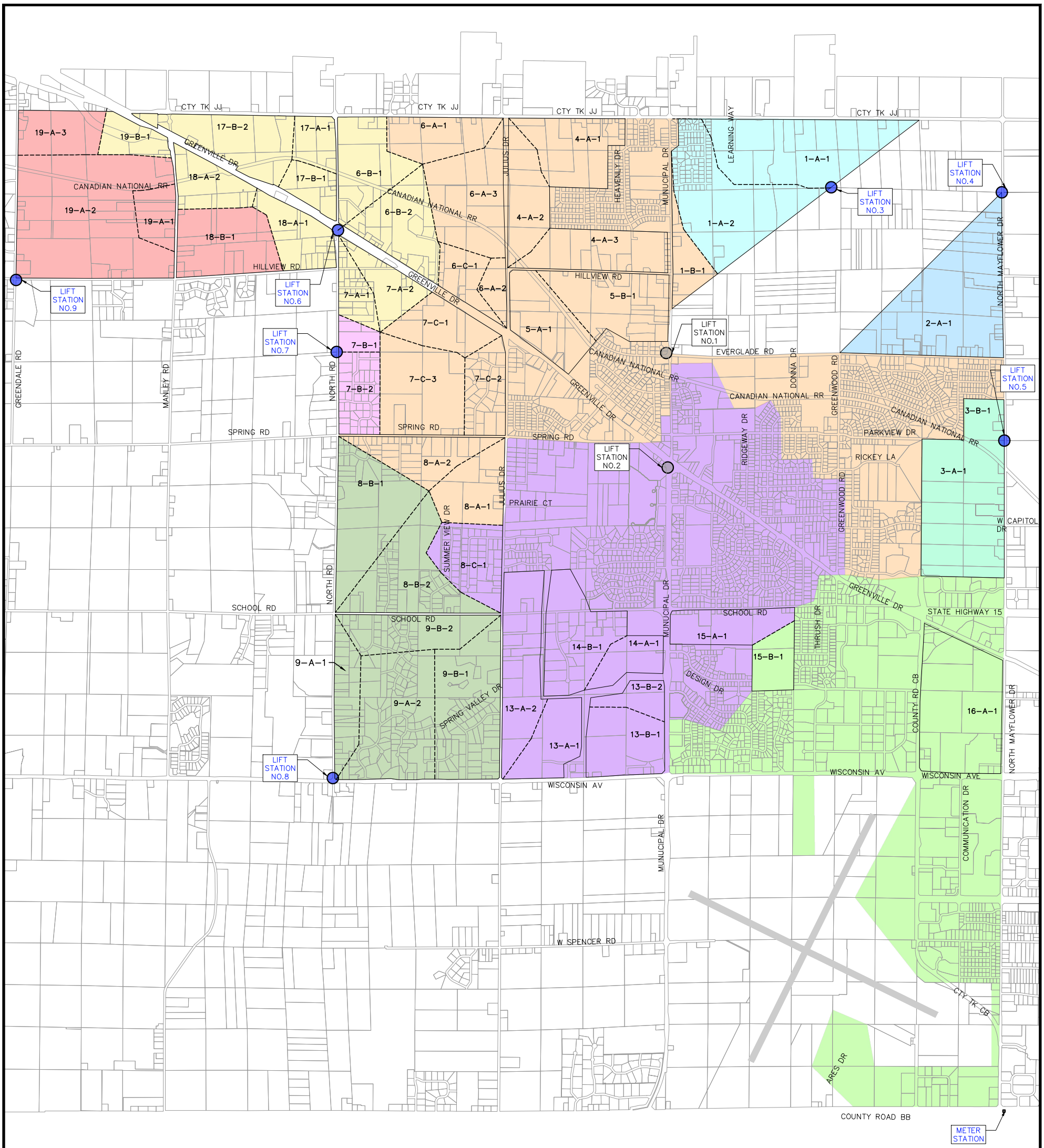
JOB NO. G5992-052	SET TYPE FINAL
DRAWN BY MLW	FIGURE NO. 4-2
CHECKED BY JMM	DATE DECEMBER 2021

SCALE
0 800' 1600' 3200'

VILLAGE OF GREENVILLE

PROPOSED FUTURE COLLECTION SYSTEM MAP
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation



LEGEND

- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- PLANNING SECTION BOUNDARY
- LIFT STATION NO. 1 SERVICE AREA
- LIFT STATION NO. 2 SERVICE AREA
- LIFT STATION NO. 3 SERVICE AREA
- LIFT STATION NO. 4 SERVICE AREA
- LIFT STATION NO. 5 SERVICE AREA
- LIFT STATION NO. 6 SERVICE AREA
- LIFT STATION NO. 7 SERVICE AREA
- LIFT STATION NO. 8 SERVICE AREA
- LIFT STATION NO. 9 SERVICE AREA
- GRAVITY FLOW

JOB NO. G5992-052	SET TYPE FINAL
DRAWN BY MLW	FIGURE NO. 4-3
CHECKED BY JMM	DATE DECEMBER 2021

SCALE: 0 800' 1600' 3200'

VILLAGE OF GREENVILLE

PROPOSED SERVICE AREAS FOR FUTURE LIFT STATIONS
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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CTY TK JJ

LEARNING WAY

MUNUCIPAL DR

1

1

2

3

4

1–A–1

1–A–2

1–B–1

2–A–1

LIFT STATION NO.3

LIFT STATION NO.1

MANHOLE E10700

MANHOLE E10500

MANHOLE E10300

MANHOLE E11106

EVERGLADE RD

DONNA DR

CANADIAN NATIONAL RR

GREENWOOD RD

PARKVIEW DR

RICKEY LA

RIDGEWAY DR

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY: MLW	FIGURE NO.: 4-4
CHECKED BY: JMM	DATE: DECEMBER 2021

SCALE: 0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 1
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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CTY TK JJ

1

1

1–A–1

2

LIFT STATION NO.3

LIFT STATION NO.4

4

4

2–A–1

NORTH MAYFLOWER DR

MANHOLE E11106

DONNA DR

CANADIAN NATIONAL RR

GREENWOOD RD

3–B–1

6

CANADIAN NATIONAL RR

PARKVIEW DR

3–A–1

LIFT STATION NO.5

PICKEY LA

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	4-5
CHECKED BY	DATE
JMM	DECEMBER 2021

SCALE

0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 2
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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CANADIAN NATIONAL RR
PARKVIEW DR
RICKEY LA
GREENWOOD RD
6
3–A–1
LIFT STATION NO.5
W CAPITOL DR
5
MANHOLE 3216
GREENVILLE DR
STATE HIGHWAY 15
THRUSH DR
36
16–A–1
37
COUNTY RD CB
NORTH MAYFLOWER DR
WISCONSIN AVE

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	4-6
CHECKED BY	DATE
JMM	DECEMBER 2021

SCALE
0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 3 & 16
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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12
CTY TK JJ
6–A–1
7
4–A–1
JULIUS DR
8
A–3
4–A–2
HEAVENLY DR
MUNUCIPAL DR
1–A–2
4–A–3
3
9
MANHOLE E10800
1–B–1
C–1
13
6–A–2
HILLVIEW RD
5–B–1
MANHOLE E10700
MANHOLE E10500
11
MANHOLE E10300
MANHOLE E15182
10
5–A–1
19
MANHOLE E15180
LIFT STATION NO.1
7–C–2
MANHOLE E15020
CANADIAN NATIONAL RR
MANHOLE E15180
GREENVILLE DR
SPRING RD

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY: MLW	FIGURE NO.: 4-7
CHECKED BY: JMM	DATE: DECEMBER 2021

SCALE
0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 4 & 5
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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CTY TK JJ

12

17–A–1

6–A–1

14

6–B–1

JULIUS DR

38

17–B–1

8

CANADIAN NATIONAL RR

6–A–3

LIFT STATION NO.6

6–B–2

18–A–1

15

6–C–1

13

GREENVILLE DR

6–A–2

7–A–2

7–A–1

16

7–C–1

19

MANHOLE E15180

17

7–B–1

LIFT STATION NO.7

7–C–2

7–C–3

NORTH RD

7–B–2

MANHOLE E15180

18

20

MANHOLE E15577

SPRING RD

21

22

23

8–A–2

8–B–1

8–A–1

JULIUS DR

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY: MLW	FIGURE NO.: 4-8
CHECKED BY: JMM	DATE: DECEMBER 2021

SCALE: 0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 6 & 7
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

MANHOLE E15577

SPRING RD

JULIUS DR

23

21

22

8–B–1

8–A–2

8–A–1

SUMMER VIEW DR

MANHOLE MP0522

NORTH RD

8–B–2

8–C–1

25

24

SCHOOL RD

9–B–2

9–A–1

9–B–1

26

9–A–2

SPRING VALLEY DR

28

LIFT STATION NO.8

27

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	4-9
CHECKED BY	DATE
JMM	DECEMBER 2021

SCALE

0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 8 &9
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

MANHOLE E15577
SPRING RD
JULIUS DR
21
22
8–A–1
LIFT STATION NO.2
PRAIRIE CT
MANHOLE MP0522
SUMMER VIEW DR
8–C–1
25
24
MANHOLE MP0380
SCHOOL RD
34
MANHOLE MP0390
MUNUCIPAL DR
9–B–2
14–A–1
14–B–1
13–A–2
33
9–B–1
MANHOLE MP0408
MANHOLE MP0400
30
13–B–2
MANHOLE MP4000
28
SPRING VALLEY DR
29
32
13–B–1
13–A–1
31
MANHOLE MP4048
WISCONSIN AV

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	4-10
CHECKED BY	DATE
JMM	DECEMBER 2021

SCALE
0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 13 & 14
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

SCHOOL RD

MUNUCIPAL DR

GREENWOOD RD

GREENVILLE DR

THRUSH DR

DESIGN DR

COUNTY RD CB

WISCONSIN AV

35

15–A–1

35

15–B–1

36

MANHOLE MP1634

MANHOLE MP1692

MANHOLE MP0380

MANHOLE MP4424

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY: MLW	FIGURE NO.: 4-11
CHECKED BY: JMM	DATE: DECEMBER 2021

SCALE: 0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 15
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

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GREENVILLE DR

CTY TK JJ

17–B–2

17–A–1

19–B–1

14

38

18–A–2

17–B–1

CANADIAN NATIONAL RR

19–A–1

18–B–1

LIFT STATION NO.6

39

18–A–1

HILLVIEW RD

16

17

LIFT STATION NO.7

NORTH RD

MANLEY RD

18

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY: MLW	FIGURE NO.: 4-12
CHECKED BY: JMM	DATE: DECEMBER 2021

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VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 17 & 18
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

19–A–3

19–B–1

19–A–2

19–A–1

40

39

GREENVILLE DR

CTY TK JJ

CANADIAN NATIONAL RR

HILLVIEW RD

LIFT STATION NO.9

GREENDALE RD

MANLEY RD

SPRING RD

LEGEND

- 6–INCH OR LESS SEWER MAIN
- 8–INCH SEWER MAIN
- 10–INCH SEWER MAIN
- 12–INCH SEWER MAIN
- 15–INCH SEWER MAIN
- 18–INCH SEWER MAIN
- 21–INCH SEWER MAIN
- 30–INCH SEWER MAIN
- 2–INCH FORCE MAIN
- 4–INCH FORCE MAIN
- 14–INCH FORCE MAIN
- 16–INCH FORCE MAIN
- EXISTING LIFT STATION
- PROPOSED LIFT STATION
- MANHOLE
- PLANNING SECTION BOUNDARY
- 8–INCH PROPOSED SEWER MAIN
- 10–INCH PROPOSED SEWER MAIN
- 12–INCH PROPOSED SEWER MAIN
- PROPOSED FORCE MAIN
- ESTIMATED DIRECTION OF FLOW
- TIER 1 RESIDENTIAL
- TIER 2 RESIDENTIAL
- TIER 3 RESIDENTIAL
- NATURAL RESOURCE
- INDUSTRIAL/EMPLOYMENT

JOB NO.	SET TYPE
G5992-052	FINAL
DRAWN BY	FIGURE NO.
MLW	4-13
CHECKED BY	DATE
JMM	DECEMBER 2021

SCALE

0 200' 400' 800'

VILLAGE OF GREENVILLE

ENLARGED SEWER PLANNING MAP FOR SECTION 19
OUTAGAMIE COUNTY WISCONSIN

Cedar corporation

APPENDICES

The following appendices are provided for this Master Plan and are included in this section:

- Appendix A – Summary of Population and Flow Calculations for Development of Future Service Areas.
- Appendix B – Planning Section Population and Flow Summary.
- Appendix C – Summary of Proposed Future Sewer Mains .
- Appendix D – Summary of Proposed Lift Station Service Characteristics for 30-Year Design Period.

Appendix A: Summary of Population and Flow Calculations for Development of Future Service Areas

Appendix A includes background information and various numerical characteristics used to develop the estimated population and wastewater flows from future planning sections.

Specific information for each planning section is also provided and generally includes the following:

- Planning section land use
- Lift Station service and tie-in location for the existing collection system
- ID number
- Number of existing dwelling units
- The overall area of the planning section, the estimated "open/developable" area within the section, and the estimated area of wetlands or other environmentally sensitive land within the planning section.
- An estimated existing and forecasted population for the planning section.
- Projections for future wastewater flow from commercial or industrial sources within the planning section.
- Expected average daily and peak wastewater flows from the planning section when fully developed.

Appendix A - Summary of Population and Flow Calculations for Development of Future Service Areas

Background Information

Flow Assumptions

Wisconsin DOA 2020 Persons per House	2.396
Estimated Greenville Flow per Capita, gpcd	77
Peak Month Flow Factor	1.26
Peak Day Flow Factor	2.59

Population Assumptions

	Comprehensive Plan Methods	Population based on Development Calculations
Total Expansion Population	6,501	6,513
Tier 1 Residential Total	6,176	5,377
Tier 2 Residential Total	260	918
Tier 3 Residential Total	65	218
Assumption for % Open Area that is Developable	50%	

Planning Area Housing Density Assumptions

Assumed New Houses per Acre	Tier 1	2.55
Assumed New Houses per Acre	Tier 2	0.75
Assumed New Houses per Acre	Tier 3	0.20

	Single Family Home Percentage	Two-Family Home Percentage
Tier 1 Residential	90%	10%
Tier 2 Residential	100%	0%
Tier 3 Residential	100%	0%

Commercial/Industrial Flow Contribution Assumptions

Anticipated Flow Contribution	Average Daily Flow, gpd
Total Commercial/Industrial Flow	82,033
Allocation of Flow for Industrial Land Use	41,016
Allocation of Flow for Urban Overlay Land Use	41,016
Allocation of Flow for Individual Sections with Urban Overlay Land Use	2,159
Number of Industrial Land Use Planning Sections	2
Number of Individual Urban Overlay Land Use Planning Sections	19

Planning Section Information

Primary Section Number	**1A**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 3
Tie-In Location	LS 3 / Manhole E10700

Section ID	1-A-1
Number of Existing Dwelling along Main	5
Estimated Main Service Area, acres	302
Estimated Open/Developable Area, acres	179
Mapped Wetland Area, acres	12.3
Anticipated # of New Units	229
Anticipated Existing Service Population	12
Anticipated New Service Population	604
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	47,432
Peak Month Flow, gpd	59,751
Peak Day Flow, gpd	122,832

Section ID	1-A-2
Number of Existing Dwelling along Main	53
Estimated Main Service Area, acres	204
Estimated Open/Developable Area, acres	180
Mapped Wetland Area, acres	5
Anticipated # of New Units	230
Anticipated Existing Service Population	127
Anticipated New Service Population	607
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	56,518
Peak Month Flow, gpd	71,197
Peak Day Flow, gpd	146,362

Primary Section Number	**1B**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E10500

Section ID	1-B-1
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	53
Estimated Open/Developable Area, acres	30
Mapped Wetland Area, acres	15
Anticipated # of New Units	39
Anticipated Existing Service Population	0
Anticipated New Service Population	103
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	7,931
Peak Month Flow, gpd	9,991
Peak Day Flow, gpd	20,539

Primary Section Number	**2**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 4
Tie-In Location	LS 4 / Manhole E11634
Section ID	2-A-1
Number of Existing Dwelling along Main	9
Estimated Main Service Area, acres	320
Estimated Open/Developable Area, acres	300
Mapped Wetland Area, acres	2
Anticipated # of New Units	383
Anticipated Existing Service Population	22
Anticipated New Service Population	1010
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	79,464
Peak Month Flow, gpd	100,103
Peak Day Flow, gpd	205,784

Primary Section Number	**3A**	
Comprehensive Plan Land Use	Industrial	
Lift Station serviced by	Lift Station No. 5	
Tie-In Location	LS 5 / Manhole 3216	
Section ID	3-A-1	
Number of Existing Dwelling along Main	6	Note: Half of projected future Commercial/Industrial flows
Estimated Main Service Area, acres	240	for Village projected for Main 3-A-1
Estimated Open/Developable Area, acres	0	
Mapped Wetland Area, acres	2	
Anticipated # of New Units	0	
Anticipated Existing Service Population	15	
Anticipated New Service Population	0	
Additional Flow Within Urban Overlay District?	Yes	
Average Daily Flow (at Total), gpd	23,822	
Peak Month Flow, gpd	30,009	
Peak Day Flow, gpd	61,690	

Block Number	**3B**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 5
Tie-In Location	LS 5 / Manhole 3216
Section ID	3-B-1
Number of Existing Dwelling along Main	1
Estimated Main Service Area, acres	44
Estimated Open/Developable Area, acres	39
Mapped Wetland Area, acres	0
Anticipated # of New Units	50
Anticipated Existing Service Population	3
Anticipated New Service Population	132
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	10,395
Peak Month Flow, gpd	13,095
Peak Day Flow, gpd	26,919

Primary Section Number	**4**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 1
Tie-In Location	E10800
Section ID	4-A-1
Number of Existing Dwelling along Main	11
Estimated Main Service Area, acres	97
Estimated Open/Developable Area, acres	88
Mapped Wetland Area, acres	0
Anticipated # of New Units	113
Anticipated Existing Service Population	27
Anticipated New Service Population	298
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	25,025
Peak Month Flow, gpd	31,525
Peak Day Flow, gpd	64,806
Section ID	4-A-2
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	97
Estimated Open/Developable Area, acres	88
Mapped Wetland Area, acres	7
Anticipated # of New Units	113
Anticipated Existing Service Population	0
Anticipated New Service Population	298
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	22,946
Peak Month Flow, gpd	28,906
Peak Day Flow, gpd	59,422
Section ID	4-A-3
Number of Existing Dwelling along Main	7
Estimated Main Service Area, acres	125
Estimated Open/Developable Area, acres	105
Mapped Wetland Area, acres	0
Anticipated # of New Units	134
Anticipated Existing Service Population	17
Anticipated New Service Population	354
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	28,567
Peak Month Flow, gpd	35,987
Peak Day Flow, gpd	73,979

Primary Section Number	**5A**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E15020
Section ID	5-A-1
Number of Existing Dwelling along Main	7
Estimated Main Service Area, acres	113
Estimated Open/Developable Area, acres	25
Mapped Wetland Area, acres	0
Anticipated # of New Units	32
Anticipated Existing Service Population	17
Anticipated New Service Population	85
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	10,013
Peak Month Flow, gpd	12,613
Peak Day Flow, gpd	25,930

Primary Section Number	**5B**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E10300
Section ID	5-B-1
Number of Existing Dwelling along Main	13
Estimated Main Service Area, acres	183
Estimated Open/Developable Area, acres	104
Mapped Wetland Area, acres	5
Anticipated # of New Units	133
Anticipated Existing Service Population	32
Anticipated New Service Population	351
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	29,491
Peak Month Flow, gpd	37,151
Peak Day Flow, gpd	76,371

Primary Section Number	**6A**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E15182
Section ID	6-A-1
Number of Existing Dwelling along Main	8
Estimated Main Service Area, acres	98
Estimated Open/Developable Area, acres	86
Mapped Wetland Area, acres	7
Anticipated # of New Units	33
Anticipated Existing Service Population	20
Anticipated New Service Population	80
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	7,700
Peak Month Flow, gpd	9,700
Peak Day Flow, gpd	19,940
Section ID	6-A-2
Number of Existing Dwelling along Main	1
Estimated Main Service Area, acres	13
Estimated Open/Developable Area, acres	12
Mapped Wetland Area, acres	0
Anticipated # of New Units	5
Anticipated Existing Service Population	3
Anticipated New Service Population	12
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	3,314
Peak Month Flow, gpd	4,174
Peak Day Flow, gpd	8,581
Section ID	6-A-3
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	200
Estimated Open/Developable Area, acres	75
Mapped Wetland Area, acres	120
Anticipated # of New Units	29
Anticipated Existing Service Population	0
Anticipated New Service Population	70
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	5,390
Peak Month Flow, gpd	6,790
Peak Day Flow, gpd	13,958

Primary Section Number	**6B**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 6
Tie-In Location	LS 6 / Manhole E15182
Section ID	6-B-1
Number of Existing Dwelling along Main	1
Estimated Main Service Area, acres	108
Estimated Open/Developable Area, acres	98
Mapped Wetland Area, acres	8
Anticipated # of New Units	37
Anticipated Existing Service Population	3
Anticipated New Service Population	89
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	9,243
Peak Month Flow, gpd	11,643
Peak Day Flow, gpd	23,935
Section ID	6-B-2
Number of Existing Dwelling along Main	12
Estimated Main Service Area, acres	125
Estimated Open/Developable Area, acres	25
Mapped Wetland Area, acres	71
Anticipated # of New Units	10
Anticipated Existing Service Population	29
Anticipated New Service Population	24
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	6,240
Peak Month Flow, gpd	7,860
Peak Day Flow, gpd	16,159

Primary Section Number	**6C**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E15180
Section ID	6-C-1
Number of Existing Dwelling along Main	2
Estimated Main Service Area, acres	27
Estimated Open/Developable Area, acres	20
Mapped Wetland Area, acres	0
Anticipated # of New Units	8
Anticipated Existing Service Population	5
Anticipated New Service Population	20
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	4,084
Peak Month Flow, gpd	5,144
Peak Day Flow, gpd	10,575

Primary Section Number	**7A**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 6
Tie-In Location	LS 6 / Manhole E15182
Section ID	7-A-1
Number of Existing Dwelling along Main	26
Estimated Main Service Area, acres	65
Estimated Open/Developable Area, acres	27
Mapped Wetland Area, acres	3
Anticipated # of New Units	11
Anticipated Existing Service Population	63
Anticipated New Service Population	27
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	6,930
Peak Month Flow, gpd	8,730
Peak Day Flow, gpd	17,946
Section ID (Connected Sewer Main ID)	7-A-2
Number of Existing Dwelling along Main	1
Estimated Main Service Area, acres	60
Estimated Open/Developable Area, acres	10
Mapped Wetland Area, acres	5
Anticipated # of New Units	4
Anticipated Existing Service Population	3
Anticipated New Service Population	10
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	3,160
Peak Month Flow, gpd	3,980
Peak Day Flow, gpd	8,183

Primary Section Number	**7B**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 7
Tie-In Location	LS 7 / Manhole E15577
Section ID	7-B-1
Number of Existing Dwelling along Main	24
Estimated Main Service Area, acres	15
Estimated Open/Developable Area, acres	10
Mapped Wetland Area, acres	0
Anticipated # of New Units	4
Anticipated Existing Service Population	58
Anticipated New Service Population	10
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	5,236
Peak Month Flow, gpd	6,596
Peak Day Flow, gpd	13,559
Section ID	7-B-2
Number of Existing Dwelling along Main	3
Estimated Main Service Area, acres	88
Estimated Open/Developable Area, acres	5
Mapped Wetland Area, acres	0
Anticipated # of New Units	2
Anticipated Existing Service Population	8
Anticipated New Service Population	5
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	1,001
Peak Month Flow, gpd	1,261
Peak Day Flow, gpd	2,592

Primary Section Number	**7C**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E15180/E15577
Section ID	7-C-1
Number of Existing Dwelling along Main	3
Estimated Main Service Area, acres	87
Estimated Open/Developable Area, acres	70
Mapped Wetland Area, acres	12
Anticipated # of New Units	27
Anticipated Existing Service Population	8
Anticipated New Service Population	65
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	7,780
Peak Month Flow, gpd	9,800
Peak Day Flow, gpd	20,147
Section ID	7-C-2
Number of Existing Dwelling along Main	24
Estimated Main Service Area, acres	99
Estimated Open/Developable Area, acres	0
Mapped Wetland Area, acres	1
Anticipated # of New Units	0
Anticipated Existing Service Population	58
Anticipated New Service Population	0
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	4,466
Peak Month Flow, gpd	5,626
Peak Day Flow, gpd	11,565
Section ID	7-C-3
Number of Existing Dwelling along Main	28
Estimated Main Service Area, acres	160
Estimated Open/Developable Area, acres	120
Mapped Wetland Area, acres	2
Anticipated # of New Units	45
Anticipated Existing Service Population	68
Anticipated New Service Population	108
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	13,552
Peak Month Flow, gpd	17,072
Peak Day Flow, gpd	35,095

Primary Section Number	**8A**
Comprehensive Plan Land Use	Tier 2 Residential
Lift Station serviced by	Lift Station No. 1
Tie-In Location	Manhole E15600
Section ID	8-A-1
Number of Existing Dwelling along Main	4
Estimated Main Service Area, acres	105
Estimated Open/Developable Area, acres	80
Mapped Wetland Area, acres	0
Anticipated # of New Units	30
Anticipated Existing Service Population	10
Anticipated New Service Population	72
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	6,314
Peak Month Flow, gpd	7,954
Peak Day Flow, gpd	16,351
Section ID (Connected Sewer Main ID)	8-A-2
Number of Existing Dwelling along Main	23
Estimated Main Service Area, acres	105
Estimated Open/Developable Area, acres	44
Mapped Wetland Area, acres	0
Anticipated # of New Units	17
Anticipated Existing Service Population	56
Anticipated New Service Population	41
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	7,469
Peak Month Flow, gpd	9,409
Peak Day Flow, gpd	19,342

Primary Section Number	**8B**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 8
Tie-In Location	LS 8 / Manhole MP4032
Section ID	8-B-1
Number of Existing Dwelling along Main	13
Estimated Main Service Area, acres	189
Estimated Open/Developable Area, acres	130
Mapped Wetland Area, acres	14
Anticipated # of New Units	49
Anticipated Existing Service Population	32
Anticipated New Service Population	118
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	11,550
Peak Month Flow, gpd	14,550
Peak Day Flow, gpd	29,910
Section ID	8-B-2
Number of Existing Dwelling along Main	59
Estimated Main Service Area, acres	172
Estimated Open/Developable Area, acres	90
Mapped Wetland Area, acres	0
Anticipated # of New Units	34
Anticipated Existing Service Population	142
Anticipated New Service Population	82
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	17,248
Peak Month Flow, gpd	21,728
Peak Day Flow, gpd	44,666

Primary Section Number	**8C**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 2
Tie-In Location	Manhole MP0522
Section ID	8-C-1
Number of Existing Dwelling along Main	36
Estimated Main Service Area, acres	94
Estimated Open/Developable Area, acres	14
Mapped Wetland Area, acres	7
Anticipated # of New Units	6
Anticipated Existing Service Population	87
Anticipated New Service Population	15
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	7,854
Peak Month Flow, gpd	9,894
Peak Day Flow, gpd	20,339

Primary Section Number	**9A**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 8
Tie-In Location	LS 8 / Manhole MP4032
Section ID	9-A-1
Number of Existing Dwelling along Main	24
Estimated Main Service Area, acres	72
Estimated Open/Developable Area, acres	0
Mapped Wetland Area, acres	5
Anticipated # of New Units	0
Anticipated Existing Service Population	58
Anticipated New Service Population	0
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	4,466
Peak Month Flow, gpd	5,626
Peak Day Flow, gpd	11,565
Section ID	9-A-2
Number of Existing Dwelling along Main	100
Estimated Main Service Area, acres	233
Estimated Open/Developable Area, acres	0
Mapped Wetland Area, acres	15
Anticipated # of New Units	0
Anticipated Existing Service Population	240
Anticipated New Service Population	0
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	18,480
Peak Month Flow, gpd	23,280
Peak Day Flow, gpd	47,857

Primary Section Number	**9B**
Comprehensive Plan Land Use	Tier 2 Residential/Open Space
Lift Station serviced by	Lift Station No. 8
Tie-In Location	LS 8 / Manhole MP4032
Section ID	9-B-1
Number of Existing Dwelling along Main	35
Estimated Main Service Area, acres	54
Estimated Open/Developable Area, acres	25
Mapped Wetland Area, acres	5
Anticipated # of New Units	10
Anticipated Existing Service Population	84
Anticipated New Service Population	24
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	8,316
Peak Month Flow, gpd	10,476
Peak Day Flow, gpd	21,536
Section ID	9-B-2
Number of Existing Dwelling along Main	50
Estimated Main Service Area, acres	114
Estimated Open/Developable Area, acres	50
Mapped Wetland Area, acres	0
Anticipated # of New Units	19
Anticipated Existing Service Population	120
Anticipated New Service Population	46
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	12,782
Peak Month Flow, gpd	16,102
Peak Day Flow, gpd	33,101

Primary Section Number	**13A**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	Lift Station No. 2 / No. 8
Tie-In Location	LS 8 / Manhole MP0400
Section ID	13-A-1
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	92
Estimated Open/Developable Area, acres	85
Mapped Wetland Area, acres	0
Anticipated # of New Units	109
Anticipated Existing Service Population	0
Anticipated New Service Population	288
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	24,335
Peak Month Flow, gpd	30,655
Peak Day Flow, gpd	63,019
Section ID	13-A-2
Number of Existing Dwelling along Main	3
Estimated Main Service Area, acres	162
Estimated Open/Developable Area, acres	80
Mapped Wetland Area, acres	10
Anticipated # of New Units	102
Anticipated Existing Service Population	8
Anticipated New Service Population	269
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	21,329
Peak Month Flow, gpd	26,869
Peak Day Flow, gpd	55,235

Primary Section Number	**13B**
Comprehensive Plan Land Use	Tier 1 Residential
Lift Station serviced by	N/A
Tie-In Location	Manhole MP4048/4000
Section ID	13-B-1
Number of Existing Dwelling along Main	5
Estimated Main Service Area, acres	122
Estimated Open/Developable Area, acres	60
Mapped Wetland Area, acres	4
Anticipated # of New Units	77
Anticipated Existing Service Population	12
Anticipated New Service Population	203
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	18,714
Peak Month Flow, gpd	23,574
Peak Day Flow, gpd	48,462
Section ID	13-B-2
Number of Existing Dwelling along Main	1
Estimated Main Service Area, acres	42
Estimated Open/Developable Area, acres	30
Mapped Wetland Area, acres	0
Anticipated # of New Units	39
Anticipated Existing Service Population	3
Anticipated New Service Population	103
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	10,321
Peak Month Flow, gpd	13,001
Peak Day Flow, gpd	26,727

Primary Section Number	**14A**
Comprehensive Plan Land Use	Tier 1 Residential/Open Space
Lift Station serviced by	Lift Station No. 2
Tie-In Location	Manhole MP0408
Section ID	14-A-1
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	105
Estimated Open/Developable Area, acres	93
Mapped Wetland Area, acres	2
Anticipated # of New Units	119
Anticipated Existing Service Population	0
Anticipated New Service Population	314
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	26,337
Peak Month Flow, gpd	33,177
Peak Day Flow, gpd	68,203

Primary Section Number	**14B**
Comprehensive Plan Land Use	Tier 1 Residential/Open Space
Lift Station serviced by	Lift Station No. 2
Tie-In Location	Manhole MP0380
Section ID	14-B-1
Number of Existing Dwelling along Main	25
Estimated Main Service Area, acres	125
Estimated Open/Developable Area, acres	10
Mapped Wetland Area, acres	7.5
Anticipated # of New Units	13
Anticipated Existing Service Population	60
Anticipated New Service Population	35
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	7,315
Peak Month Flow, gpd	9,215
Peak Day Flow, gpd	18,943

Primary Section Number	**15A**
Comprehensive Plan Land Use	Tier 1 Residential/Heritage Overlay
Lift Station serviced by	Lift Station No. 2
Tie-In Location	Manhole MP1692
Section ID	15-A-1
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	59
Estimated Open/Developable Area, acres	59
Mapped Wetland Area, acres	0
Anticipated # of New Units	76
Anticipated Existing Service Population	0
Anticipated New Service Population	201
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	17,636
Peak Month Flow, gpd	22,216
Peak Day Flow, gpd	45,670

Primary Section Number	**15B**
Comprehensive Plan Land Use	Tier 1 Residential/Heritage Overlay
Lift Station serviced by	N/A
Tie-In Location	Manhole 4136
Section ID	15-B-1
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	75
Estimated Open/Developable Area, acres	75
Mapped Wetland Area, acres	0
Anticipated # of New Units	96
Anticipated Existing Service Population	0
Anticipated New Service Population	254
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	19,558
Peak Month Flow, gpd	24,638
Peak Day Flow, gpd	50,648

Primary Section Number	**16A**
Comprehensive Plan Land Use	Industrial/Employment
Lift Station serviced by	N/A
Tie-In Location	Manhole 3032
Section ID	16-A-1
Number of Existing Dwelling along Main	0
Estimated Main Service Area, acres	215
Estimated Open/Developable Area, acres	0
Mapped Wetland Area, acres	0
Anticipated # of New Units	0
Anticipated Existing Service Population	0
Anticipated New Service Population	0
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	22,667
Peak Month Flow, gpd	28,554
Peak Day Flow, gpd	58,699

Note: Half of projected future Commercial/Industrial flows for Village projected for Main 16-A-1

Primary Section Number	**17A**
Comprehensive Plan Land Use	Tier 3 Residential
Lift Station serviced by	Lift Station No. 6
Tie-In Location	LS 6 / Manhole E15182
Section ID	17-A-1
Number of Existing Dwelling along Main	3
Estimated Main Service Area, acres	44
Estimated Open/Developable Area, acres	40
Mapped Wetland Area, acres	0
Anticipated # of New Units	4
Anticipated Existing Service Population	8
Anticipated New Service Population	10
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	1,386
Peak Month Flow, gpd	1,746
Peak Day Flow, gpd	3,589

Primary Section Number	**17B**
Comprehensive Plan Land Use	Tier 3 Residential
Lift Station serviced by	Lift Station No. 6
Tie-In Location	LS 6 / Manhole E15182
Section ID	17-B-1
Number of Existing Dwelling along Main	6
Estimated Main Service Area, acres	48
Estimated Open/Developable Area, acres	34
Mapped Wetland Area, acres	3
Anticipated # of New Units	4
Anticipated Existing Service Population	15
Anticipated New Service Population	10
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	4,084
Peak Month Flow, gpd	5,144
Peak Day Flow, gpd	10,575
Section ID	17-B-2
Number of Existing Dwelling along Main	2
Estimated Main Service Area, acres	150
Estimated Open/Developable Area, acres	140
Mapped Wetland Area, acres	5
Anticipated # of New Units	14
Anticipated Existing Service Population	5
Anticipated New Service Population	34
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	5,162
Peak Month Flow, gpd	6,502
Peak Day Flow, gpd	13,367

Primary Section Number	**18A**
Comprehensive Plan Land Use	Tier 3 Residential
Lift Station serviced by	Lift Station No. 6
Tie-In Location	LS 6 / Manhole E15182
Section ID	18-A-1
Number of Existing Dwelling along Main	10
Estimated Main Service Area, acres	97
Estimated Open/Developable Area, acres	50
Mapped Wetland Area, acres	0
Anticipated # of New Units	5
Anticipated Existing Service Population	24
Anticipated New Service Population	12
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	4,931
Peak Month Flow, gpd	6,211
Peak Day Flow, gpd	12,769
Section ID	18-A-2
Number of Existing Dwelling along Main	5
Estimated Main Service Area, acres	91
Estimated Open/Developable Area, acres	58
Mapped Wetland Area, acres	10
Anticipated # of New Units	6
Anticipated Existing Service Population	12
Anticipated New Service Population	15
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	4,238
Peak Month Flow, gpd	5,338
Peak Day Flow, gpd	10,974

Primary Section Number	**18B**
Comprehensive Plan Land Use	Tier 3 Residential
Lift Station serviced by	Lift Station No. 9
Tie-In Location	LS 9 / Manhole E15577
Section ID	18-B-1
Number of Existing Dwelling along Main	6
Estimated Main Service Area, acres	145
Estimated Open/Developable Area, acres	88
Mapped Wetland Area, acres	15
Anticipated # of New Units	9
Anticipated Existing Service Population	15
Anticipated New Service Population	22
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	2,849
Peak Month Flow, gpd	3,589
Peak Day Flow, gpd	7,378

Primary Section Number	**19A**
Comprehensive Plan Land Use	Tier 3 Residential
Lift Station serviced by	Lift Station No. 9
Tie-In Location	LS 9 / Manhole E15577
Section ID	19-A-1
Number of Existing Dwelling along Main	3
Estimated Main Service Area, acres	51
Estimated Open/Developable Area, acres	40
Mapped Wetland Area, acres	5
Anticipated # of New Units	4
Anticipated Existing Service Population	8
Anticipated New Service Population	10
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	1,386
Peak Month Flow, gpd	1,746
Peak Day Flow, gpd	3,589
Section ID	19-A-2
Number of Existing Dwelling along Main	25
Estimated Main Service Area, acres	388
Estimated Open/Developable Area, acres	330
Mapped Wetland Area, acres	20
Anticipated # of New Units	33
Anticipated Existing Service Population	60
Anticipated New Service Population	80
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	10,780
Peak Month Flow, gpd	13,580
Peak Day Flow, gpd	27,916
Section ID	19-A-3
Number of Existing Dwelling along Main	17
Estimated Main Service Area, acres	111
Estimated Open/Developable Area, acres	60
Mapped Wetland Area, acres	0
Anticipated # of New Units	6
Anticipated Existing Service Population	41
Anticipated New Service Population	15
Additional Flow Within Urban Overlay District?	No
Average Daily Flow (at Total), gpd	4,312
Peak Month Flow, gpd	5,432
Peak Day Flow, gpd	11,167

Primary Section Number	**19B**
Comprehensive Plan Land Use	Tier 3 Residential
Lift Station serviced by	Lift Station No. 6
Tie-In Location	LS 6 / Manhole E15182
Section ID	19-B-1
Number of Existing Dwelling along Main	1
Estimated Main Service Area, acres	50
Estimated Open/Developable Area, acres	40
Mapped Wetland Area, acres	0
Anticipated # of New Units	4
Anticipated Existing Service Population	3
Anticipated New Service Population	10
Additional Flow Within Urban Overlay District?	Yes
Average Daily Flow (at Total), gpd	3,160
Peak Month Flow, gpd	3,980
Peak Day Flow, gpd	8,183

Appendix B: Planning Section Population and Flow Summary

Appendix B provides a summary of the 30-year service population (existing and forecasted population) and a summary of flow contributions for each individual planning section. The approximate percent of total future flow that each fully developed planning section would contribute is also provided.

Appendix B - Planning Section Population and Flow Summary

Section Name/ID	Projected 30-Year Service Population	Future Residential Flow (GPD)	Future Commercial/Industrial Flow (GPD)	Total Average Daily Flow (GPD)	Peak Day Flow (GPD)	Percent Flow of Total Future Development
1-A-1	616	47,432	0	47,432	122,832	6.5%
1-A-2	734	56,518	0	56,518	146,362	7.8%
1-B-1	103	7,931	0	7,931	20,539	1.1%
2-A-1	1032	79,464	0	79,464	205,784	11.0%
3-A-1	15	1,155	22,667	23,822	61,690	3.3%
3-B-1	135	10,395	0	10,395	26,919	1.4%
4-A-1	325	25,025	0	25,025	64,806	3.5%
4-A-2	298	22,946	0	22,946	59,422	3.2%
4-A-3	371	28,567	0	28,567	73,979	3.9%
5-A-1	102	7,854	2,159	10,013	25,930	1.4%
5-B-1	383	29,491	0	29,491	76,371	4.1%
6-A-1	100	7,700	0	7,700	19,940	1.1%
6-A-2	15	1,155	2,159	3,314	8,581	0.5%
6-A-3	70	5,390	0	5,390	13,958	0.7%
6-B-1	92	7,084	2,159	9,243	23,935	1.3%
6-B-2	53	4,081	2,159	6,240	16,159	0.9%
6-C-1	25	1,925	2,159	4,084	10,575	0.6%
7-A-1	90	6,930	0	6,930	17,946	1.0%
7-A-2	13	1,001	2,159	3,160	8,183	0.4%
7-B-1	68	5,236	0	5,236	13,559	0.7%
7-B-2	13	1,001	0	1,001	2,592	0.1%
7-C-1	73	5,621	2,159	7,780	20,147	1.1%
7-C-2	58	4,466	0	4,466	11,565	0.6%
7-C-3	176	13,552	0	13,552	35,095	1.9%
8-A-1	82	6,314	0	6,314	16,351	0.9%
8-A-2	97	7,469	0	7,469	19,342	1.0%
8-B-1	150	11,550	0	11,550	29,910	1.6%
8-B-2	224	17,248	0	17,248	44,666	2.4%
8-C-1	102	7,854	0	7,854	20,339	1.1%
9-A-1	58	4,466	0	4,466	11,565	0.6%
9-A-2	240	18,480	0	18,480	47,857	2.6%
9-B-1	108	8,316	0	8,316	21,536	1.1%
9-B-2	166	12,782	0	12,782	33,101	1.8%
13-A-1	288	22,176	2,159	24,335	63,019	3.4%
13-A-2	277	21,329	0	21,329	55,235	2.9%
13-B-1	215	16,555	2,159	18,714	48,462	2.6%
13-B-2	106	8,162	2,159	10,321	26,727	1.4%
14-A-1	314	24,178	2,159	26,337	68,203	3.6%
14-B-1	95	7,315	0	7,315	18,943	1.0%
15-A-1	201	15,477	2,159	17,636	45,670	2.4%
15-B-1	254	19,558	0	19,558	50,648	2.7%
16-A-1	0	0	22,667	22,667	58,699	3.1%
17-A-1	18	1,386	0	1,386	3,589	0.2%
17-B-1	25	1,925	2,159	4,084	10,575	0.6%
17-B-2	39	3,003	2,159	5,162	13,367	0.7%
18-A-1	36	2,772	2,159	4,931	12,769	0.7%
18-A-2	27	2,079	2,159	4,238	10,974	0.6%
18-B-1	37	2,849	0	2,849	7,378	0.4%
19-A-1	18	1,386	0	1,386	3,589	0.2%
19-A-2	140	10,780	0	10,780	27,916	1.5%
19-A-3	56	4,312	0	4,312	11,167	0.6%
19-B-1	13	1,001	2,159	3,160	8,183	0.4%
Totals	8,346	642,642	82,033	724,675	1,876,654	100.0%

Appendix C: Summary of Proposed Future Sewer Mains

Appendix C includes various information regarding the proposed sewer mains planned to serve future extensions of the Village's collection system. The following information is provided:

- Sewer Main ID number
- Planning sections that contribute flow to the respective sewer main
- 30-year service population
- Average and Peak (Design) flow rates
- Downstream connection lift station, manhole, or pipe
- Estimated bury depth of the main below grade
- Estimated diameter of the sewer main
- Estimated elevation drop over the length of the sewer main
- Estimated length of sewer main

Appendix C - Summary of Proposed Future Sewer Mains

Future Sewer Main ID	Contributing Planning Sections	Projected 30-Year Service Population	Total Average Daily Flow (GPD)	Peak Day (Design) Flow (GPD)	Sewer Main Connects to:	Estimated Bury Depth (ft)	Estimated Diameter (in.)	Estimated Elevation Drop (ft)	Estimated Sewer Main Length (ft)
1	1-A-1	616	47,432	122,832	LS No. 3	9	8	103	4,300
2	1-A-2	734	56,518	146,362	LS No. 3	9	10	73	6,000
3	1-B-1	103	7,931	20,539	Manhole E10500	7	8	60	2,750
4	2-A-1	1032	79,464	205,784	LS No. 4	10	10	63	6,250
5	3-A-1	15	23,822	61,690	LS No. 5	13	10	35	4,600
6	3-B-1	135	10,395	26,919	LS No. 5	12	8	15	2,200
7	4-A-1	325	25,025	64,806	Sewer Main 4-A-2	10	8	25	4,300
8	4-A-2, 6-A-3	793	61,061	158,127	Sewer Main 4-A-3	18	10	15	4,850
9	4-A-3	1164	89,628	232,105	Manhole E10800	16	12	58	5,280
10	5-A-1	102	10,013	25,930	Manhole E15020	11	8	70	3,000
11	5-B-1	383	29,491	76,371	Manhole E10300	10	8	80	4,200
12	6-A-1	100	7,700	19,940	Sewer Main 4-A-2	10	8	20	3,600
13	6-A-2	15	3,314	8,581	Manhole E15182	19	8	7	1,500
14	6-B-1, 17-A-1	110	10,629	27,525	LS No. 6	13	8	40	5,200
15	6-B-2, 7-A-2	66	9,400	24,341	LS No. 6	12	10	13	3,600
16	7-A-1	90	6,930	17,946	LS No. 6	11	8	12	2,800
17	7-B-1	68	5,236	13,559	LS No. 7	8	8	27	600
18	7-B-2	13	1,001	2,592	LS No. 7	8	10	9	3,000
19	6-C-1, 7-C-1	98	11,864	30,722	Manhole E15180	10	8	11	2,500
20	7-C-2	58	4,466	11,565	Manhole E15577	11	8	31	3,000
21	7-C-3, 8-A-2	273	21,021	54,437	Manhole E15577	11	8	27	5,280
22	8-A-1	82	6,314	16,351	Manhole E15577	12	8	10	2,200
23	8-B-1	150	11,550	29,910	Sewer Main 9-A-1	22	8	54	5,500
24	8-B-2, 9-B-2	498	38,346	99,303	Sewer Main 9-A-1	14	10	39	5,280
25	8-C-1	102	7,854	20,339	Manhole MP0522	15	8	32	1,050
26	9-A-1	706	54,362	140,779	LS No. 8	18	12	19	5,280
27	9-A-2	240	18,480	47,857	LS No. 8	25	10	37	5,280
28	9-B-1	108	8,316	21,536	Sewer Main 8-B-2	25	8	23	5,280
29	13-A-1	288	24,335	63,019	Manhole MP0400	13	8	11	2,500
30	13-A-2	277	21,329	55,235	Manhole MP0390	17	8	23	2,000
31	13-B-1	215	18,714	48,462	Manhole MP4048	14	8	33	3,400
32	13-B-2	106	10,321	26,727	Manhole MP4000	16	8	54	2,500
33	14-A-1	314	26,337	68,203	Manhole MP0408	9	8	45	3,800
34	14-B-1	95	7,315	18,943	Manhole MP0380	23	8	32	6,200
35	15-A-1	201	17,636	45,670	Manhole MP1692	11	8	5	2,300
36	15-B-1	254	19,558	50,648	Manhole 4132	6	10	6	2,000
37	16-A-1	0	22,667	58,699	Manhole 3032	11	8	20	4,000
38	17-B-1, 17-B-2, 18-A-1, 18-A-2, 19-B-1	153	24,734	64,051	LS No. 6	13	8	34	7,400
39	18-B-1, 19-A-1, 19-A-2	195	15,015	38,884	LS No. 9	10	8	40	5,200
40	19-A-3	56	4,312	11,167	LS No. 9	13	10	15	5,400

Appendix D: Summary of Proposed Lift Station Service Characteristics for 30-Year Design Period

Appendix D includes a summary of information for the existing and proposed lift stations. The following information is provided:

For existing lift stations:

- Flow rate information including current flows, additional flow from future growth, and 30-year design estimates
- The rated design capacity for the overall lift station
- The existing tie-in for the lift station
- The rated design capacities for the lift station pumps
- Pump quantity and motor size

For proposed lift stations:

- Planning sections that are anticipated to contribute flow to the lift station service area
- Estimated 30-year service population
- Average and peak estimated flows experienced by the lift station
- The anticipated tie-in for the lift station
- Estimated pumping capacity and sizes for the lift station
- Estimated forcemain length for the lift station

Appendix D - Summary of Proposed Lift Station Service Characteristics for 30-Year Design Period

Existing Lift Stations

Lift Station Name	Current Average Flow	Projected 30-Year Average Day Additional Flow (GPD)	Estimated 30-Year Average Day Flow (GPD)	Average Day Design Flow (GPD)	Estimated 30-Year Average Peak Day Flow (GPD)	Peak Day Design Flow (GPD)	Lift Station Connects to:	Pump Capacity (GPM)	Motor Size (HP)	Pump Quantity
Lift Station No. 1	443,709	434,932	878,641	777,000	2,275,680	2,300,000	Manhole 4424	1,600	125	2
Lift Station No. 2	326,793	206,682	533,475	446,000	1,381,700	1,560,000	Manhole 4424	1,250	75	2

Note: Joan Street Lift Station anticipated to be removed following construction of Lift Station No. 3

Proposed Future Lift Stations

Lift Station Name	Contributing Planning Sections	Projected 30-Year Service Population	Total Average Daily Flow (GPD)	Peak Day (Design) Flow (GPD)	Lift Station Connects to:	Estimated Pump Capacity (GPM)	Estimated Motor Size (HP)	Estimated Pump Quantity	Estimated Forcemain Length (ft)
Lift Station No. 3	1-A-1, 1-A-2	1,350	103,950	269,194	Manhole E10700	200	20	2	6,300
Lift Station No. 4	2-A-1	1,032	79,464	205,784	Manhole E11106	150	15	2	10,500
Lift Station No. 5	3-A-1, 3-B-1	150	34,217	88,610	Manhole 3216	100	10	2	4,800
Lift Station No. 6	6-B-1, 6-B-2, 7-A-1, 7-A-2, 17-A-1, 17-B-1, 17-B-2, 18-A-1, 18-A-2, 19-B-1	419	51,692	133,864	Manhole E15182	100	10	2	6,500
Lift Station No. 7	7-B-1, 7-B-2	81	6,237	16,152	Manhole E15577	100	10	2	8,200
Lift Station No. 8	8-B-1, 8-B-2, 9-A-1, 9-A-2, 9-B-1, 9-B-2	946	72,842	188,635	Manhole MP4032	200	20	2	13,000
Lift Station No. 9	18-B-1, 19-A-1, 19-A-2, 19-A-3	251	19,327	50,050	Manhole E15577	100	10	2	21,100