PUBLIC UTILITIES

I. INTRODUCTION

This portion of the Comprehensive Plan will review the:

- Municipal Wastewater Treatment/Sanitary Sewer System
- Municipal Water System
- Municipal Electric System
- Municipal Storm Water System; and
- Identify Public Utilities Policies and Objectives.

II. SANITARY SEWER SYSTEM

A. Existing Sanitary Sewer System.

The City of New Prague’s wastewater treatment facility is a state of the art facility constructed between the summer of 2008 and fall of 2010 with the initial discharge occurring in February 2011 and the first full year of operation being in 2012. The facility uses biological aerated filters, parallel plate clarifiers, membrane filtration and UV disinfection. The biosolids produced at the facility are dried and utilized as agricultural soil amendments.

Capacity. The wastewater treatment plant currently has a capacity of 2,500,000 gallons per day (average annual flow). Average demand for the system currently is 655,000 gallons per day, with a peak demand of 1,087,000 gallons per day. The treatment plant currently serves the City of New Prague as well as the Cedar Lake Area Water and Sanitary Sewer District, which was added to the system in 2001. The City has a Joint Powers Agreement with the District to provide up to 100,000 gallons per day and allow for up to 325 connections. As of February 2003, 275 homes were connected with peak flows of 40,000 gallons per day.

As of July 2014, the City of New Prague provided service to 2,745 accounts, of which approximately 81% are residential and 19% are commercial/industrial.

System components. The existing sanitary sewer facilities can be divided into two distinct components: the sewage collection system and the wastewater treatment plant. The New Prague sanitary sewer collection system is illustrated on Map 10-1. The treatment plant removes Biochemical Oxygen Demand (BODs), suspended solids, and ammonia and provides disinfection. The influent, after treatment, is discharged into Phillips Creek, which is a part of the Sand Creek Watershed.

The sanitary sewer collection system within the City of New Prague was placed into service at various times. As a part of new financial reporting requirements, the City is required to create an itemized inventory of the value of each individual collection main and when each main was placed into service, for the purposes of itemizing asset depreciation in conjunction with Government Accounting Standards Board (GASB) 34 directive. The collection system extends to a majority of the homes and businesses in New Prague. While the City of New Prague accepts sewage from the Cedar Lake Sanitary Sewer District (See Map 10-7), the City does not own or maintain any of the infrastructure associated with this area.

The sanitary sewer collection system includes a network of collection pipes with nine lift stations scattered throughout the City (See Map 10-1). Improvements have been done as required to
maintain the system. Some design standards for new sanitary sewer system improvements are included in the City’s subdivision ordinance. These regulations may need to be expanded to ensure consistency with the City’s Comprehensive Sanitary Sewer Plan for the 2026 Service Area.

According to the Public Works Director, approximately 20% of New Prague’s wastewater treatment collection system consists of old clay pipes, while the remaining 80% of the pipes are 30 years old or newer. Much of the new pipe is the result of new residential, commercial and industrial growth and expansion of the system as well as reconstruction of older streets and utilities in the core area of the City.

Infiltration/Inflow. According to the Comprehensive Sanitary Sewer Plan for 2026 Service Area, completed in December 2003, the City does have some isolated areas where infiltration and inflow (I/I) occurs into the sanitary sewer system. The City has been addressing the I/I through the type of manhole used, testing of all new sanitary sewer lines, prohibition of roof and foundation lines to the sanitary sewer system, replacement of older lines and modifications to lift stations to prevent flooding. Flood proofing of structures along Sand Creek and Phillips Creek was recommended in the study as a method of further correcting I/I problems.

There are a limited number of residential units and businesses in the City limits (approximately 7), which are currently serviced by individual sewage treatment systems (ISTS). (See Map 10-2). Minnesota Rules Chapter 7080 governs construction and abandonment of ISTS’s. The Scott and Le Sueur County Environmental Services offices are responsible for implementing MN Rules 7080 locally. The City is considering a street reconstruction project in the area in which a majority of the ISTSs are located. If completed, these units would be connected to municipal sewer as a part of the project.

Public Input. As a part of the Comprehensive Plan process a survey of 22 individuals occurred. Participants were asked to rank the sanitary sewer utility. 71% ranked it as “good” and 29% rated it as “excellent”.

B. Maintenance of the Sanitary Sewer System.

The City of New Prague Public Works staff has divided the City into four sections for the purpose of developing a maintenance program. Each section of the system is cleaned every four years (one section per year). Routine maintenance and repair expenses are funded through the City’s Sewer Enterprise Fund.

C. Sanitary Sewer Plans.

The Comprehensive Sanitary Sewer Plan for the 2026 Service Area was adopted by the City in December of 2003. Strong consideration should be made to update the Comprehensive Sanitary Sewer Plan for the 2026 Service Area as the City has grown considerably since it was written in 2003.

The City is currently divided into five major sanitary sewer districts:

- The Downtown Sanitary Sewer District (DS)
- The Central Sewer District (CS)
- The County Road 37 District (CR)
- The School Sewer District (SS); and
- The Cedar Lake District (CL)

According to the Comprehensive Sanitary Sewer Plan for 2026 Service Area, in order to service future growth the following additional major sewer districts will need to be added:
- The Northwest District (NW)
- The Northcentral District (NC)
- The Northeast District (NE)
- The Sand Creek District (SD)
- The South Central District (SC); and
- The Southwest District (SW);

These future sewer districts extend beyond the anticipated 2035 population (planned to serve a population of approximately 70,000 people) and land use needs, however these district boundaries were utilized when identifying the boundaries of the projected 2035 growth.

The Wastewater Treatment Facility, located at 601 12th Street NE, began construction in 2008 and was started up for the first time in the fall of 2010. The first discharge took place in February of 2011 following by full operation in the spring of 2012. The facility is a Biological Aerated Filter (BAF) plant which includes odor treatment units and drying of biosolids. The facility was constructed based on the need to meet more stringent testing regulations as well as 2030 population projections developed during the 2004/2005 Comprehensive Planning process which projected a population of just over 16,000 residents in New Prague. Cost of the project totaled over $30 million dollars.

D. **Sanitary Sewer Rates and Fees.**

Sewer rates effective in 2015 are $10.52 base charge plus $15.55 for each 1,000 gallons contributed. The City also charges Sewer Connection Charges (SCC) at the time of building permit issuance equal to $7,150 ($5,934.50 to the wastewater fund and $1,215.50 to the trunk line fund) per residential equivalency unit (REU). Rates are based on operational needs while SCC fees are based on estimated costs required to pay off the City’s $30 million dollar wastewater treatment facility and also to support the construction of trunk facilities to service the new growth.

E. **Proposed Sanitary Sewer Facilities.**

The treatment facility in New Prague has capacity to accommodate the City of New Prague with some additional growth as well as the Cedar Lake District. Due to recent exponential growth, the capacity is becoming limited.

Capital expenses should be included in a capital improvement fund and paid for through an Enterprise Operating Fund or through the issuance of bonds and repayment from trunk area charges and/or connection fees (SAC). An itemized list of projects and the proposed time frame for construction are included in the *Comprehensive Sanitary Sewer Plan for the 2026 Service Area.*

The following are major expenses relating to the sanitary sewer system that are planned:

- Expansion of the wastewater treatment plant or relocation/construction of a new wastewater treatment plant.
- Trunk Sewer improvements ranging from $26.5 to $28.0 million, as follows:
  - Gravity sewer mains: $13.7 to $15.6 million
  - Force mains: $1.0 to $1.5 million
  - Lift stations: $1.4 to $1.7 million
  - “Deep Sewer Option”: $2.7 million
  - Easements for sewer projects: $5.5 to $7.0 million
- Infiltration/Inflow program and implementation (flood proofing along Sand Creek and Phillips Creek)
III. WATER.

A. Existing Water System.

The City of New Prague’s municipal water system serves a majority of New Prague residents and businesses with the exception of one residential private well, which is used for irrigation purposes. The City requires connection to the municipal system once a private well fails.

Wells. The City’s water system includes municipal wells, storage tanks/towers and treatment facilities. Map 10-3 illustrates the locations of these facilities. The City has six municipal wells. Wells 1, 2, 3 and 5 draw water from the Franconia Ironon Galeselle (FIG) Aquifer. Wells #4 and #6 draw water from the Mt. Simon Aquifer. Well #1 was drilled in 1925 with a design capacity of 550 gpm at a depth of 582 feet. Well #2 was drilled in 1938 with a design capacity of 280 gpm at a depth of 400 feet. Well #3 was drilled in 1948 with a design capacity of 500 gpm at a depth of 398 feet. Well #4 was drilled in 1988 with a design capacity of 500 gpm at a depth of 652 feet. Well #5 was drilled in 2004 at 305 Lexington, with a design capacity of 500 gpm at a depth of 424 feet. Well #6 was drilled in 2007 at 305 Lexington Ave. S with a design capacity of 1,000 gpm and a well depth of 640 feet. The pumping capacity of the six wells combined is 3,330 gallons per minute. The average demand is 770,000 gallons per day and the peak demand is 1,975,000 gallons per day. The total water hardness is 400 ppm. The water quality is very good with the exception of high iron and manganese content.

Storage. The City has two elevated storage tanks providing 1,000,000 gallons of storage capacity and one ground storage reservoir near water treatment plant #2, which was a former fuel oil storage tank that was refurbished for water storage. Land has been reserved on the south side of the community on the south side of LeSueur County Road 29 (directly south of the Tikalsky Acres development) for the possible addition of an additional 500,000 gallon water tower.

Water Treatment. Water is treated at the City’s three water treatment facilities. The Main Street water treatment plant treats water pumped from municipal wells #1, #2 and #3, through a pressure filtration and aeration process to remove iron. Water treatment plant #2 treats water from well #4 through gravity flow aeration. Water treatment plant #3, which was constructed in 2004, treats water from well #5 and #6 through gravity flow aeration.

Distribution System. The water distribution system includes pipes ranging in size from four inches to 14 inches in diameter. As illustrated on Map 10-3, the four-inch pipe, which is no longer considered an acceptable size, is located primarily on the west side of the original City. As new development and reconstruction projects occur, the City has been constructing a central trunk water main loop. According to the Water Distribution System Analysis, 2001, a second loop on the south side of the City will be required as growth continues.

Of the 2,647 municipal water accounts, 2,362 (89%) are residential customers, 278 (11%) are commercial customers and 2 (1%) are industrial customers.

Community Input. As a part of the Comprehensive Plan process in 2004 a survey of 22 individuals occurred. Participants were asked to rank the water utility. 61% ranked it as “good, 35% as “excellent” and the remaining 4% ranked it as “fair”.

B. Water Utility Maintenance.

The City has implemented a water utility maintenance schedule that includes flushing of hydrants on an annual basis, with dead end water mains flushed twice each year. Various water mains and service lines are replaced on an annual basis and coordinated with street and other utility projects.
C. Water Utility Plans.

A “Water Distribution System Analysis” study was completed for the City in September 2001. The study evaluates the existing municipal drinking water system and areas proposed to be serviced by municipal drinking water, includes an evaluation of the existing system, and recommends new construction routes and improvements to the existing water system to accommodate anticipated growth. It is important to note the Water Distribution System Analysis was completed in 2001 and included recommendations for future water facilities based on population projections of 6,721 by the year 2010 and 9,118 people by the year 2020. If growth continues to exceed previous projections, it may be necessary to update the Water Plan to ensure sufficient planning and budgeting for capital expenditures related to water facilities.

The City of New Prague has adopted a Part I and Part II Wellhead Protection Plan, which were completed in 2006 and 2008 respectively. The purpose of a Wellhead Protection Plan is to ensure the current and future safety of the City’s drinking water supply and includes the following elements as required by the Minnesota Department of Health:

1. The delineation of the wellhead protection area and the drinking water supply management area.
2. An assessment of the vulnerability of the drinking water supply management area.
3. A review of expected changes to the physical environment, land use and surface and ground water sources.
4. A plan for the management of the wellhead protection area.
5. A plan to monitor the adequacy of wellhead protection measures and a plan to implement the wellhead protection plan.

D. Water Rates and Fees.

Water rates effective in 2015 are $13.79 base charge per month, plus $3.89 for each 1,000 gallons used. The City also charges Water Connection Charges (WCC) of $1,800 per residential equivalency unit (REU). In addition, the City charges $2,814 per acre fee to developers for a water area access charge (WAAC). Rates are based on operational needs while WAAC fees are based on estimated costs required to support the construction of water facilities to service the new growth.

E. Proposed Water Facilities.

The City has a five-year capital improvement plan (CIP) for future water projects. The CIP includes:

- Well #6 at an estimated cost of $150,000 to $200,000 (at 305 Lexington)
- A second water loop on the south side of the City to be development driven; and
- Water main replacement projects, extensions and looping projects are planned.

IV. ELECTRICAL UTILITY

A. Existing Electrical Facilities

The New Prague Utilities Commission owns and operates a municipal electric utility, which provides electrical service to the area illustrated on Map 10-4. Xcel Energy services a small portion of the south side of the City. Minnesota Valley Electric Cooperative currently serves the areas generally east of 10th Ave. SE, west of 8th Ave. NW and other smaller areas as also indicated on Map 10-4.
The Electric Utility owns and operates five diesel and dual fuel (diesel/natural gas) generation units that are available for back up. The City has two electric substations; one located at 300 East Main Street and a second in the industrial park. The electric utility also occupies a 9,600 square foot industrial/warehouse building that was constructed in 1988. See Map 10-5 for the first page of the electric utility map book.

The Electric Utility owns and maintains all streetlights within its service territory.

New Prague Electric Utility is a member of the Southern Minnesota Municipal Power Agency (SMMPA), which provides wholesale electricity to 18 cities. The New Prague Electric Utility contains two divisions: Generation, which is operated by four employees and Distribution, which employs four individuals.

The New Prague Utilities Commission Provides electrical high voltage distribution to its customers through a distribution system that is networked by two substations each capable of carrying system loads in the event of failure of any one substation.

The transmission system that feeds NPUC substations is loop fed and capable of being isolated between substations or fed from two transmission feeds in the event of failure of one of the feeds. Transmission switching has been upgraded in 2001 and in 2013 to provide isolation of failed transmission sources and independent operation of substations when required.

The New Prague Utilities Commission has the ability and operation procedures in place to run its generation facilities as an alternate power source in the event the transmission grid or generation source has failed. NPUC has sufficient generation to serve all of its commercial and residential customers. NPUC generation facilities are fueled by two sources and are capable of supplying NPUC customers for an indefinite duration.

The City of New Prague has all of its major infrastructure facilities (fresh water, waste water treatment and waste water lift stations) fed by electric lines that are supplied by NPUC generation and on site generation. This should prove to be very beneficial in a disaster event.

New Prague utilities is under full allocation contract through SMMPA and therefore all of the State of Minnesota mandates are met through our wholesale provider. SMMPA is on track to meet the State mandate to have 25% of their energy come from renewable resources by 2025. The renewable resources vary in their makeup with wind, biofuel and hydro making up majority of the renewable generation at the present time.

The New Prague utilities also works through SMMPA to administer its CIP program (conservation improvement program). This is also a mandated program set forth by the State of Minnesota requiring all utilities to spend 1.5% of its gross revenue towards conservation projects with its customers.

Community Input. The New Prague Electric Utility has been both reliable and cost-competitive. As a part of the Comprehensive Plan process in 2004 a survey of 22 individuals occurred. Participants were asked to rank the electric utility. 55% ranked it as “good, 36% as “excellent” and the remaining 9% ranked it as “average”.

B. Electrical Plans.

The New Prague Utilities Commission is in the process of exploring the possibility of a future buy-out of the MN Valley Electric Coop electric service territory, which falls within the corporate limits of the City of New Prague. An agreement was in place which prohibited this from occurring prior to the year 2011. As it currently stands, as land is annexed into the City, it would be added to the New Prague Utilities Commission service area, if a buy-out agreement is reached.
The Electric Utility budgets approximately $150,000 per year for capital improvement upgrades and to service new developments.

C. Electrical Rates and Fees.

The New Prague Utilities Commission has established electrical rates for residential, commercial, small industrial, industrial and large industrial customers. Off-peak rebates programs are offered to businesses. The Utility also offers security lighting rental for $8.09 per month.

The Electric Utility is a not-for-profit entity. The utility does contribute service and fee-in-lieu of tax contributions to the City in an amount equal to approximately $40,000 per year.

V. STORM WATER UTILITY

A. Existing Storm Water Facilities.

The City of New Prague is committed to preserving its natural resources as evidenced by its review of storm water drainage issues and its desire to educate the public on issues relative to surface water quality.

Surface water management is used to guide the development and expansion of the City’s drainage system in a cost-effective manner that preserves existing water resources. Goals of surface water management include, but are not limited to: reduction of public expenditures necessary to control excessive volumes and rates of runoff; flood prevention especially those urban in nature; identification of current and future drainage patterns; protection and enhancement of the area’s natural habitat; promotion of ground water recharge; protection of the water quantity and quality in wetland, Phillips Creek and Sand Creek, and reduction in erosion from surface flows.

New Prague’s Storm Water facilities include a combination of storm sewer trunk lines, pipes, channels, manholes, overland drainage ways, catch basins and ponds. A map illustrating New Prague’s storm sewer system is attached as Map 10-6.

Community Input. As a part of the Comprehensive Plan process a survey of 22 individuals occurred. Participants were asked to rank the storm water utility. 55% ranked it as “good, 18% as “excellent”, 18% rated it as “average, 4.5% rated it as “fair” and the remaining 4.5% ranked it as “poor”.

B. Maintenance of the Storm Water System.

Storm water pipes are currently replaced in coordination with other street and utility projects. Storm water ponds, their inlets and outlets are maintained by Public Works staff.

C. Storm Water Plans.

The City adopted a Comprehensive Storm Water Management Plan in 1998, which focused on existing development at that time. An updated Surface Water Management Plan (SWMP) was prepared in 2004, which includes:

1. The division of the City into drainage districts and sub-districts including a growth area to accommodate a population of 20,000;
2. A determination of storm water runoff under ultimate land conditions;
3. The general layout and sizing of trunk storm sewers and open channels;
4. Tributary areas, storage volumes and high water levels of all required ponding areas
5. Development of wetland management policies to ensure compliance with local, state and federal wetland regulations;
6. Estimated construction and implementation cost of the Surface Water Management Plan;
7. Grading plan review processes;
8. Storm Water Utility funding needs; and
9. Recommendations for education of City residents, staff and the development community.

D. Storm Water Fees.

In order to service the future growth with regional ponds, trunk pipe and channels the 2004 *Surface Water Management Plan* estimates a cost of $11,204,380. The Plan suggests the gross acreage in the growth area is 4,185 acres, which it notes would accommodate a population of 20,000. The Plan further breaks out recommended area charge rates for various land uses as follows:

- Low density residential (1-6 units per acre): $3,012
- Medium density residential (6 to 12 units per acre): $4,818
- High density residential (12 or more units per acre): $5,723; and
- Commercial and industrial: $5,723.

The City currently does not charge developers a per acre fee for storm water management fees.

V. MUNICIPAL UTILITIES POLICIES AND OBJECTIVES

A. Municipal Utility Objectives

1. Continue to provide quality utility services to New Prague residents and businesses at cost effective rates.
2. Continue to plan for future utility needs and structure rates and fees to ensure future development pays for infrastructure costs needed to support the growth.
3. Continue to upgrade existing utility infrastructure as well as plan for future extensions and improvements.

B. Municipal Utility Policies

1. The City should review and calculate the impact of all proposed development and land subdivision on the capacity of the existing sanitary sewer system to determine whether the City can provide services requested within a timely manner (i.e. two years).
2. The City should update its Water Distribution Plan to include future growth areas and update future capital needs based on current population projections.
3. The City should emphasize redevelopment/infill in existing urban areas to maximize existing municipal utilities.
4. The City should continually review the appropriateness of: utility rates, sewer and water availability and connection charges and trunk area charges to determine whether or not said fees are sufficient to provide for future reconstruction and expansion of the system.
5. To avoid duplicate costs the City should coordinate future street construction/reconstruction with needed municipal utility construction and reconstruction.
6. Standard review procedures should be established to ensure all (re) development within the City is in compliance with the grading and storm water management controls outlined in the Surface Water Management Plan.
7. Development proposals shall be reviewed in accordance with the Wellhead Protection Plan. Any potentially contaminating land uses must be sited outside the wellhead protection area.
City of New Prague
Individual Sewage Treatment Systems
July 2014: Map 10-2

Disclaimer: This map was prepared using the City's GIS and is based on the County and City Street Data maintained by the County and City. While the City believes that the data is accurate, the City does not warrant that data in the GIS is error free and the City does not represent that the GIS data can be used for purposes such as navigation or any other purpose requiring the exact measurement of distance and direction or the precise depiction of geographic features. This disclaimer is pursuant to Minnesota Statutes 466.03 Subd. 21. The user of this map acknowledges that the City shall not be liable for any damages that may arise from the map or the information it contains.