

Infrastructure Capacity Analysis *for* Sherburne County Comprehensive Housing Needs Analysis

August 26, 2020

PREPARED BY

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Executive Summary

Introduction and Purpose

Sherburne County's goal is to plan for and promote residential growth in the County to ensure the region is well-positioned to provide housing for future population growth. The *Comprehensive Housing Needs Analysis for Sherburne County, Minnesota* report prepared by Maxfield Research and Consulting, LLC provides the data showing the future housing growth demand through 2030 and provides recommendations on the type and amount of housing that could be built in the County. The housing study analyzed the County by geographical area by creating seven subareas. The study provides housing demand calculations and recommendations for single family, multi-family, rental and senior housing.



Landform Professional Services, LLC was hired as a subconsultant to supplement the Maxfield study with an Analysis of Infrastructure Capacity and Challenges for the cities within the County.

The Infrastructure Analysis included:

- An analysis of each of city to determine the areas where the residential growth is most likely to occur.
- An analysis of the existing infrastructure and planned infrastructure in each city to determine any infrastructure needs to support the anticipated residential growth.
- Recommendations to the County to assist communities in planning and funding any infrastructure improvements.



Methodology

Infrastructure needs were identified by utilizing the projected housing demand from the Maxfield study for each city and identifying areas within each city where the growth would likely occur. We identified these areas by reviewing city and County comprehensive plans and County growth plans and reaching out to individual cities where additional information was needed.

The infrastructure analysis was completed by focusing on the areas where housing would occur and analyzing those areas for the existing and planned infrastructure that would likely be needed to support the housing growth and making recommendations for improvements where needed. This evaluation includes single family housing, multifamily housing and senior housing.

Infrastructure Considerations

The cities in Sherburne County vary dramatically in size and population. The result is that there is a wide range of existing infrastructure between cities. As developers consider sites for potential housing development in the County, there are key infrastructure elements that should be evaluated to make sure the city can continue to provide consistent service to the residents through growth periods. Specifically:

Transportation

A community's transportation network provides the framework for a community to develop and grow. New residential development needs to access the existing roadway network and ensure the additional traffic does not diminish the safety and access for the existing community members. Communities are encouraged to continually evaluate impacts to the transportation system as it grows and develops. Streets, more than any of the other infrastructure studied in this report, are regional systems. They may be local, County or State roads and consequently the planning, construction and maintenance of these systems are often beyond city or even County control.

Water System

A water system network is complex with multiple main lines giving access to the various areas of the city. Water storage facilities, wells and water treatment facilities are additional components that make up a complete water system. It is important for a community to maintain these facilities and know when upgrades are needed to serve a growing community.

Sewer System

A sewer system is comprised of force main lines and gravity sewer lines that are maintained by cities. There are also lift stations and wastewater treatment facilities that make up the system. These components are what continuously allow residents to be served. A city has the important task of providing maintenance and planning for future upgrades to the systems various components to ensure that the system functions correctly and efficiently.

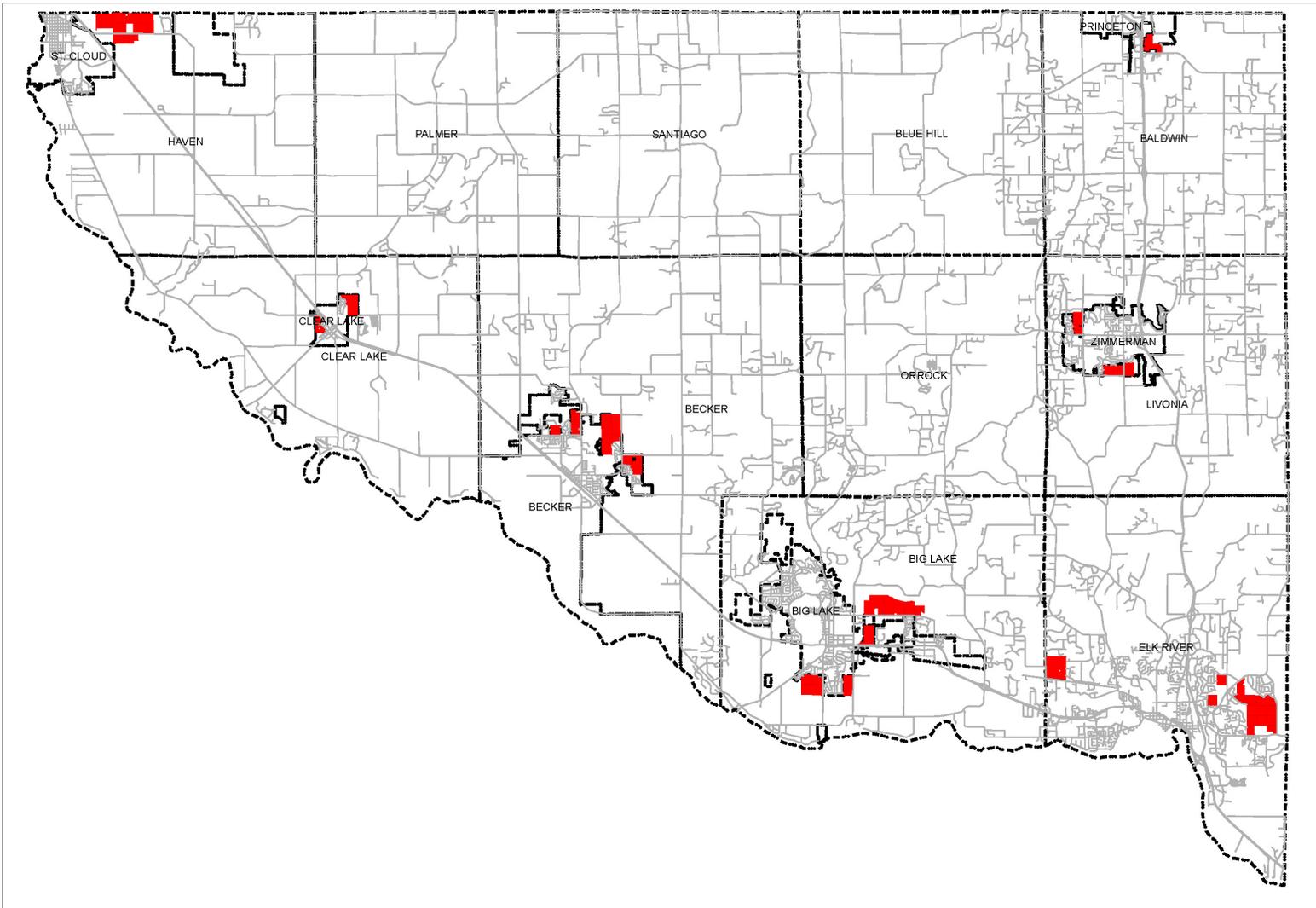
Communication System

Access to reliable internet and telecommunications service is becoming more critical as residents work from home more frequently. The communication infrastructure data to provide accurate recommendations was not part of our analysis but has become increasingly important for residents as they make decisions about where to live.



Infrastructure Analysis

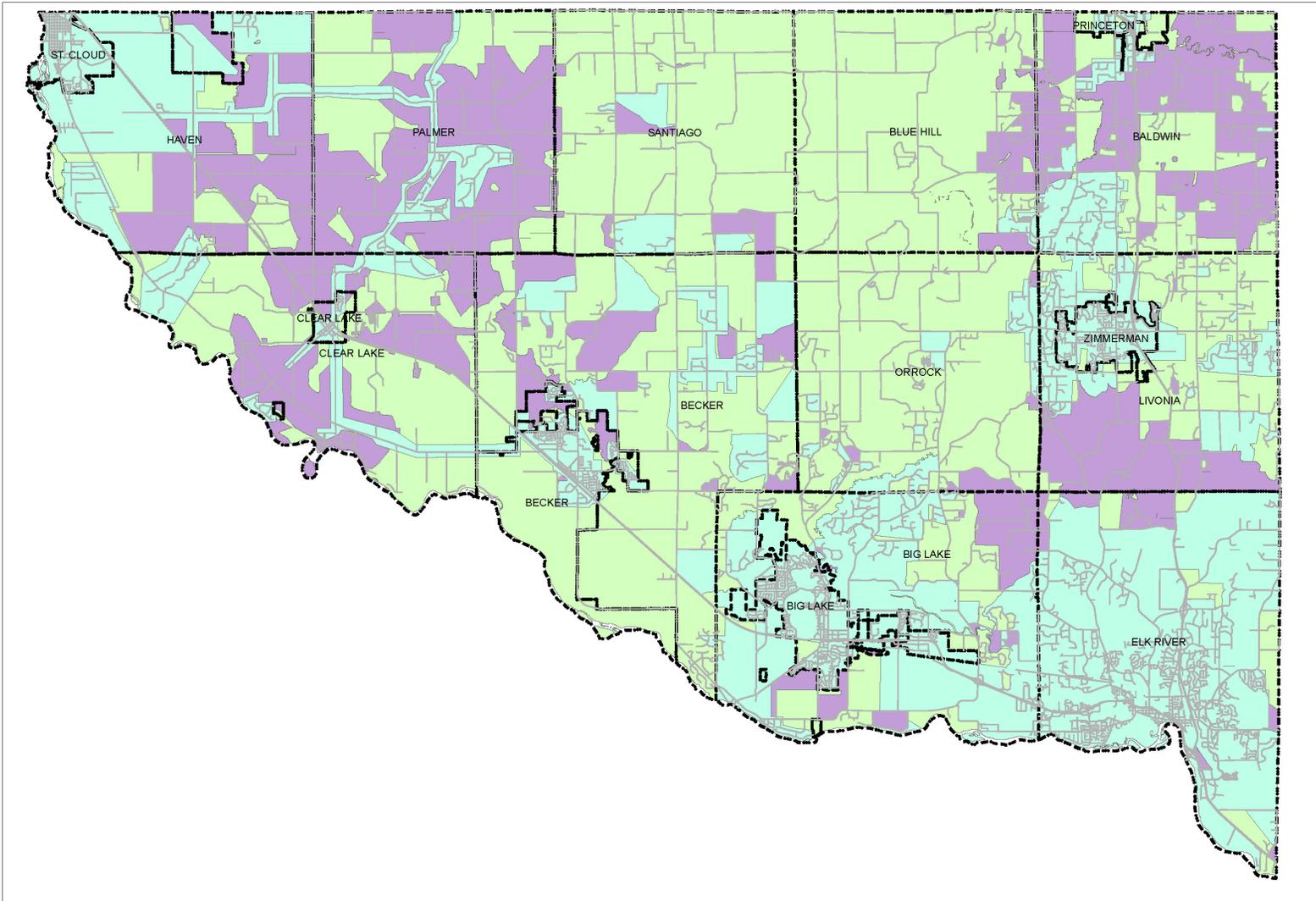
This analysis is based on the demand identified in the *Comprehensive Housing Needs Analysis for Sherburne County, Minnesota*, completed by Maxfield Research & Consulting, which analyzed the housing needs within the County based on submarket. Each of those sub-markets was evaluated for infrastructure needs and is summarized in this section. The maps were created using the data that was available from Sherburne County and the cities.



Legend

-  Roads
-  Residential Growth Areas
-  City and Township Boundaries





Legend

- Roads
- - - City and Township Boundaries
- Wireline Broadband of 100Mbps

Underserved Area
 (Wireline Broadband of at Least 25M/3M but less than 100M/20M)

Unserved Area
 (No Wireline Broadband of at Least 25M/3M)



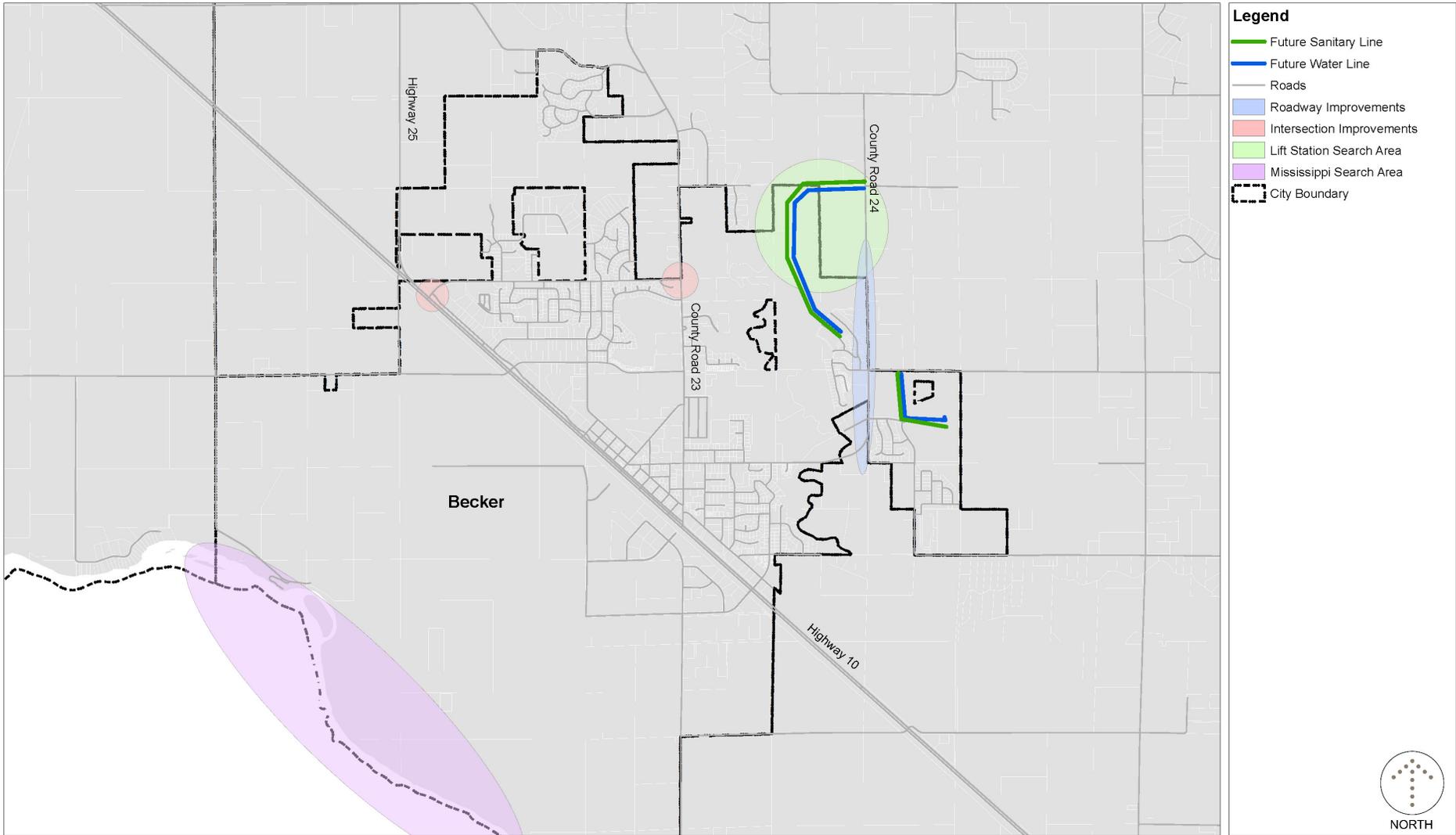
NORTH

Becker

The Becker submarket identified in the Comprehensive Housing Needs Analysis is anticipated to have a total demand for 794 additional housing units by 2030. It is likely that a majority of these units will be developed within the City of Becker north of Edgewood Drive and in the southeast portion of the city near County Road 24. A new well, which will serve the eastern portion of the city, is currently under construction.

We have completed a table shown below identifying specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand.

Becker		
Water System Needs	Sewer System Needs	Transportation System Needs
An extension of the trunk water line to the west of County Road 24 is needed to serve the future residential development as it moves north.	An extension of the trunk sanitary sewer line to the west of County Road 24 is needed to serve the future residential development as it moves north.	Additional Mississippi River crossing to alleviate the increased traffic.
	A new lift station west of County Road 24 is likely needed to serve the growth in the area.	Improvements to County Road 24 will be needed for larger residential developments to handle the increased traffic.
		Edgewood Street intersections with Highway 10 and County Road 23 will need to be improved.
		Intersection improvements will be needed at Highway 10 and Highway 25.

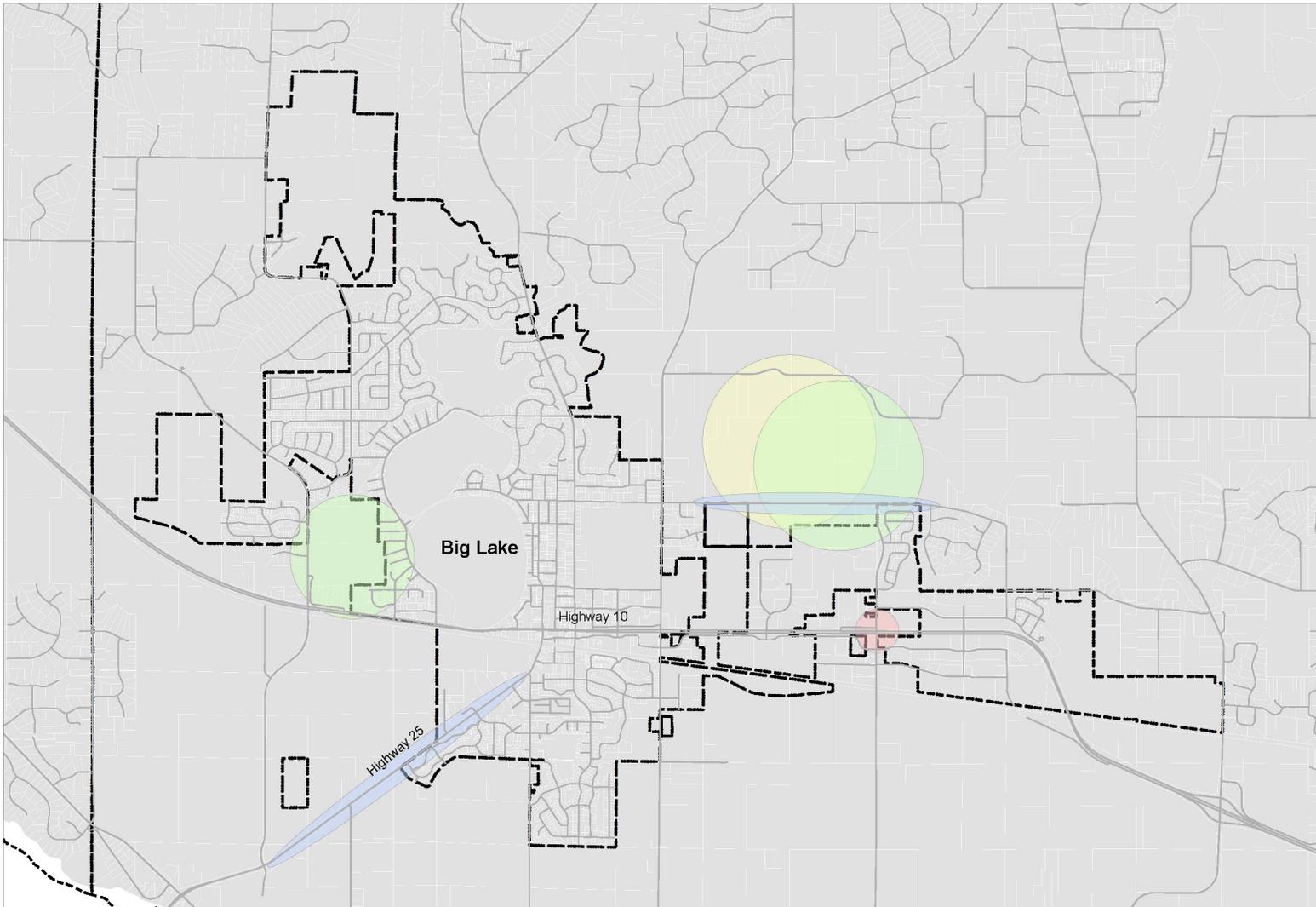


Big Lake

The Big Lake submarket identified in the *Comprehensive Housing Needs Analysis* is anticipated to have a total demand for 1,358 additional housing units by 2030. We believe that a majority of these units will be provided within the City of Big Lake. It is likely that most of this residential growth will be north of 205th Avenue and to the south along County Road 25.

Big Lake will also experience growth surrounding the transit station, but the infrastructure is already in place to expand in the surrounding area. We have completed a table shown below identifying specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand.

Big Lake		
Water System Needs	Sewer System Needs	Transportation System Needs
An additional well is likely needed to support future growth on the north side of 205th Avenue.	An additional lift station is likely needed to support future growth on the north side of 205th Avenue.	205th Avenue will need to be improved to handle the increased traffic.
	An additional lift station will be needed to the west of Lakeshore Drive to support the future growth.	Access points onto Highway 10 will need to be improved from key north south connections.
		Highway 25 is over maximum capacity and will need to be improved to handle additional traffic.



Legend

- Roads
- Roadway Improvements
- Intersection Improvements
- Lift Station Search Area
- Well Search Area
- City Boundary



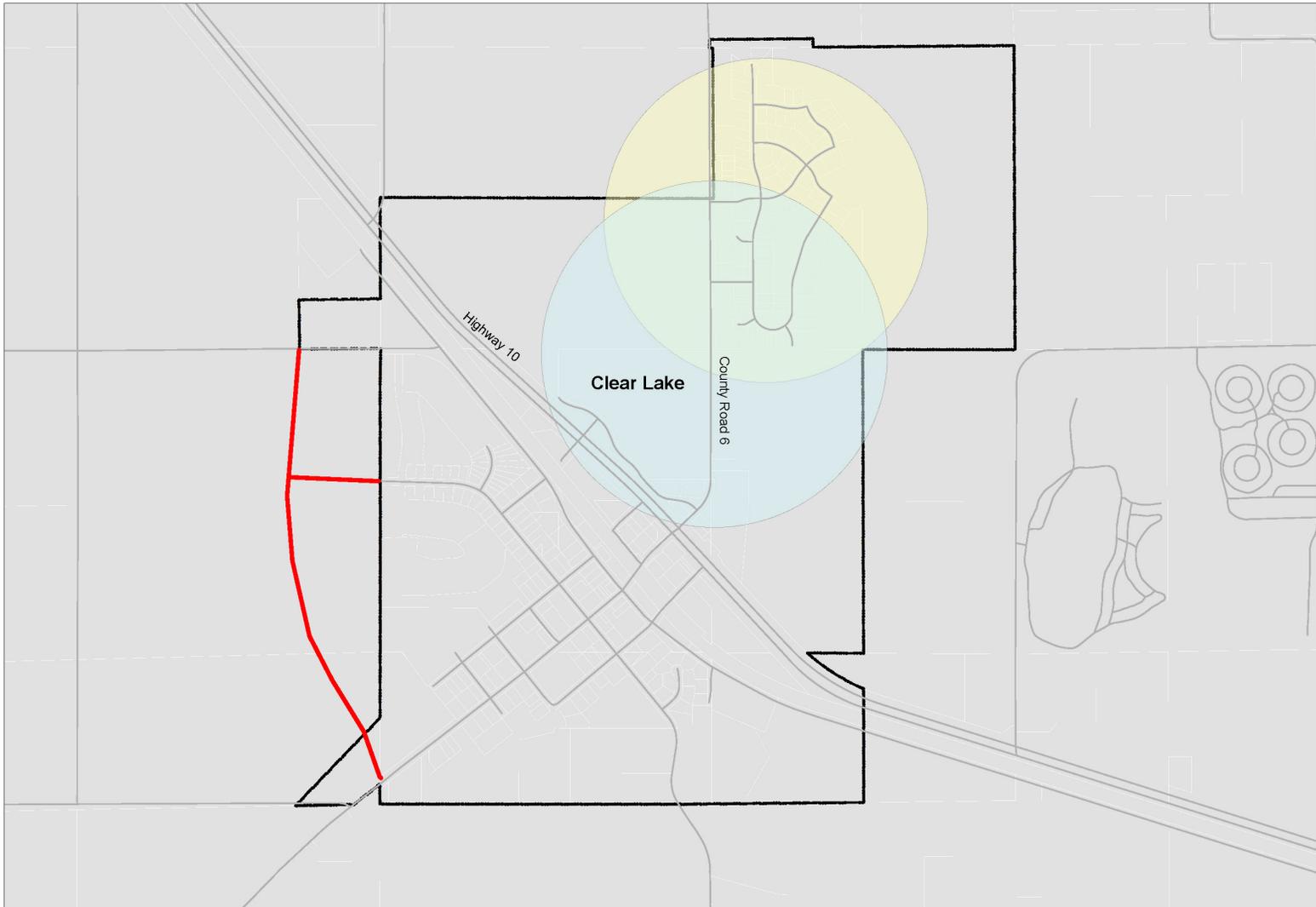
NORTH

Clear Lake

The Clear Lake submarket identified in the Comprehensive Housing Needs Analysis is anticipated to have a total demand for 146 additional housing units by 2030. We expect that a majority of these units will be provided within the City of Clear Lake. It is likely that the residential growth will be from an expansion of the existing development off County Road 6 and from expansion of the existing development on Church Street. There is also the potential for residential development extending south along 80th Street. A new well site is currently under construction in the southeastern corner of the city.

We have completed a table shown below to identify specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand.

Clear Lake		
Water System Needs	Sewer System Needs	Transportation System Needs
An additional well may be needed to serve the additional housing units.	The current wastewater treatment plant is nearing design capacity and upgrades would likely be needed with the projected demand for housing units.	A new north-south collector roadway will likely be needed between Highway 24 and County Road 76, with a connection to Church Street.
Additional water storage may be needed to serve the additional housing units.	An analysis of current pipe conditions to ensure pipe capacity is adequate for future demand.	
The need for an expansion to the water treatment facility should be evaluated with the projected housing demand.		



- Legend**
-  Future Roadway Connection
 -  Roads
 -  Water Storage Search Area
 -  Well Search Area
 -  City Boundary

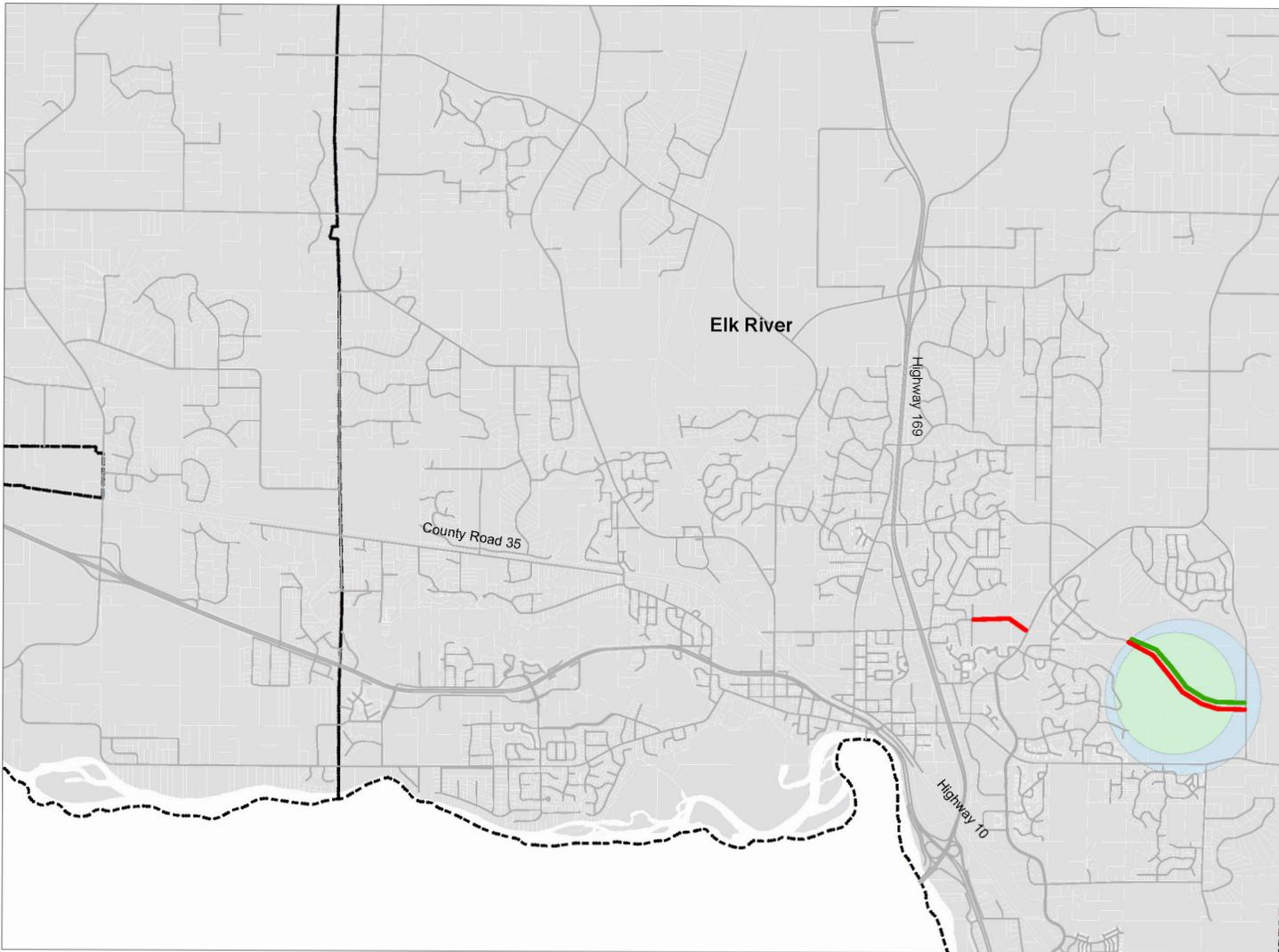


Elk River

The Elk River submarket identified in the *Comprehensive Housing Needs Analysis* is anticipated to have a total demand for 1,433 additional housing units by 2030. The majority of these units will likely be provided within the City of Elk River. We expect most of the residential growth will be west of Cleveland Road, east of the Line Avenue and Zane Street intersection, southwest of the 193rd Avenue and Tyler Street intersection and north of County Road 35 on the west edge of the city.

We have completed a table shown below which identifies specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand.

Elk River		
Water System Needs	Sewer System Needs	Transportation System Needs
A future upgrade to increase the water storage capacity will be needed to support the future residential growth.	A new sanitary main line with a potential lift station are needed to serve the future development extending from Twin Lakes Parkway.	An east-west connection between the Line Avenue and Zane Street intersection and Twin Lakes Road will be needed.
Elk River Municipal Utilities (ERMU) should continue to install or upgrade additional water efficiency methods within the existing community to limit the overuse of the water system.	In order to support the future residential growth, it is likely that an upgrade to the wastewater treatment facility will be needed to ensure peak daily flow rate does not exceed capacity.	Twin Lakes Parkway will likely be extended as a new east-west connection from Twin Lakes Road to Cleveland Road.



Legend

- Future Roadway Connection
- Future Sanitary Line
- Roads
- Lift Station Search Area
- Water Storage Search Area
- City Boundary

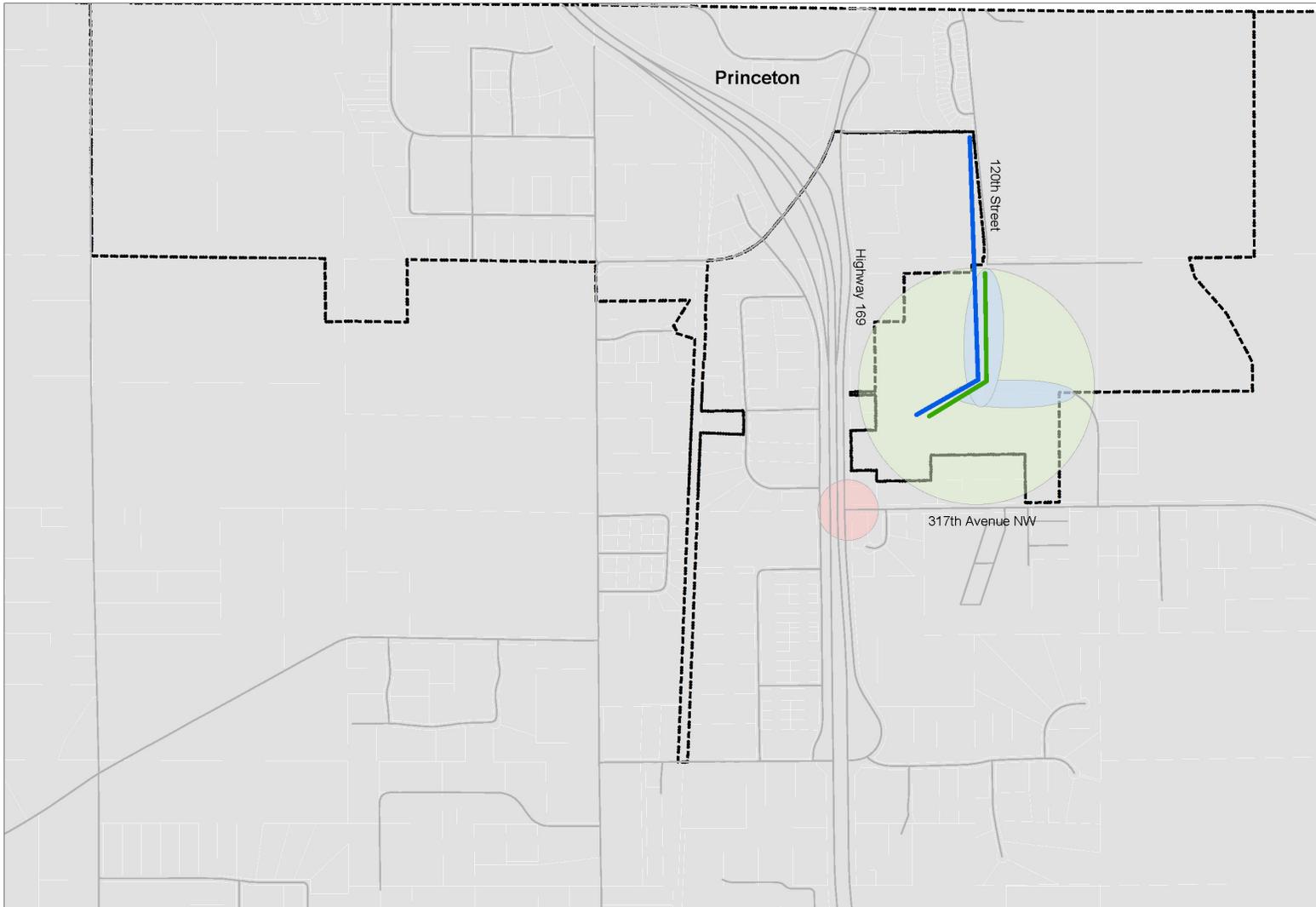


Princeton

The Northeast submarket identified in the *Comprehensive Housing Needs Analysis* is anticipated to have a total demand for 733 additional housing units by 2030. We believe that a majority of these units will be provided within the City of Princeton. It is likely that the residential growth will be northeast of the 317th Avenue NW and 124th Street intersection and through annexation of land north of 18th Street.

We have completed a table shown below which identifies specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand. The portion of Princeton located in Mille Lacs County is not shown on the map but was included in the analysis and the results are described in the table.

Princeton		
Water System Needs	Sewer System Needs	Transportation System Needs
A water main line extension down 120th Street will be needed to serve the future residential development.	A sanitary sewer main line extension further south on 120th Street will be needed to serve future residential development.	The County Road 4 and 33rd Street intersection will need improvements to support the additional traffic from future development.
	A lift station will be needed to extend a gravity line from the pressurized force main.	120th Street will need to be improved to modify sight distance lines for safety with increased traffic.
		The 124th Street and 317th Avenue intersection will likely need turn lane improvements.



Legend

- Future Sanitary Line
- Future Water Line
- Roads
- Roadway Improvements
- Lift Station Search Area
- Intersection Improvements
- City Boundary

*Princeton map only depicts the area included in Sherburne County.



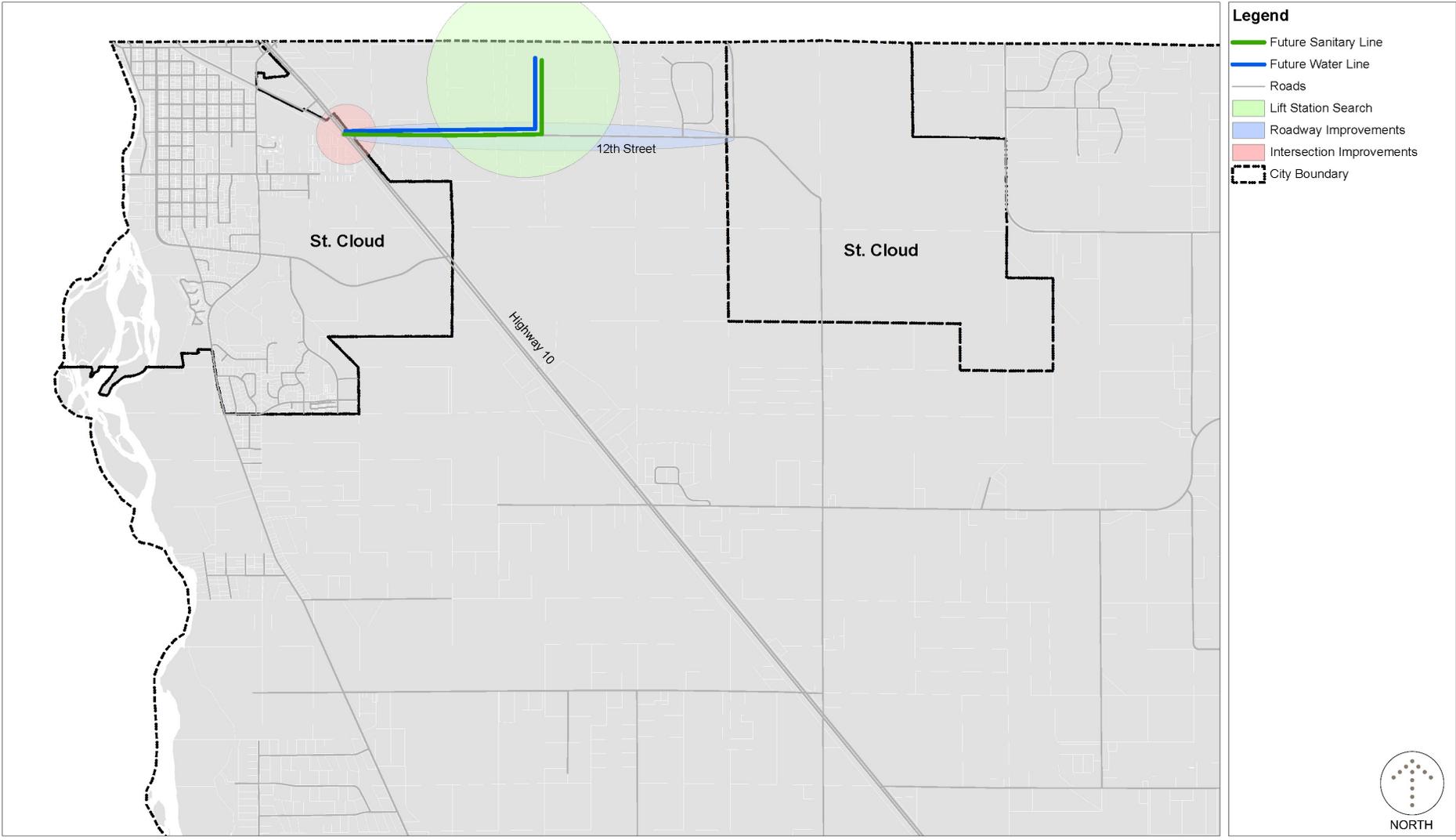
NORTH

St. Cloud

The Northwest submarket identified in the *Comprehensive Housing Needs Analysis* is anticipated to have a total demand for 633 additional housing units in the Sherburne County portion of the submarket by 2030. It is likely that a majority of these units will be provided within the City of St. Cloud. Our analysis of the city assumes that the residential growth will be through the orderly annexation of Haven Township land. It is expected that most of the growth will occur on the northern edge of the County closer to the western boundary.

We have completed a table shown below which identifies specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand.

St. Cloud		
Water System Needs	Sewer System Needs	Transportation System Needs
A water main line extension down 12th Street will be needed to serve the future residential development.	A sanitary sewer main line extension down 12th Street will be needed to serve the future residential development.	12th Street will need improvements as that will become a collector roadway for the future residential development.
	A new lift station will likely be needed to allow service for the development from 12th Street.	Intersection improvements will be needed where 12th Street ties into Highway 10.



- Legend**
- Future Sanitary Line
 - Future Water Line
 - Roads
 - Lift Station Search
 - Roadway Improvements
 - Intersection Improvements
 - City Boundary

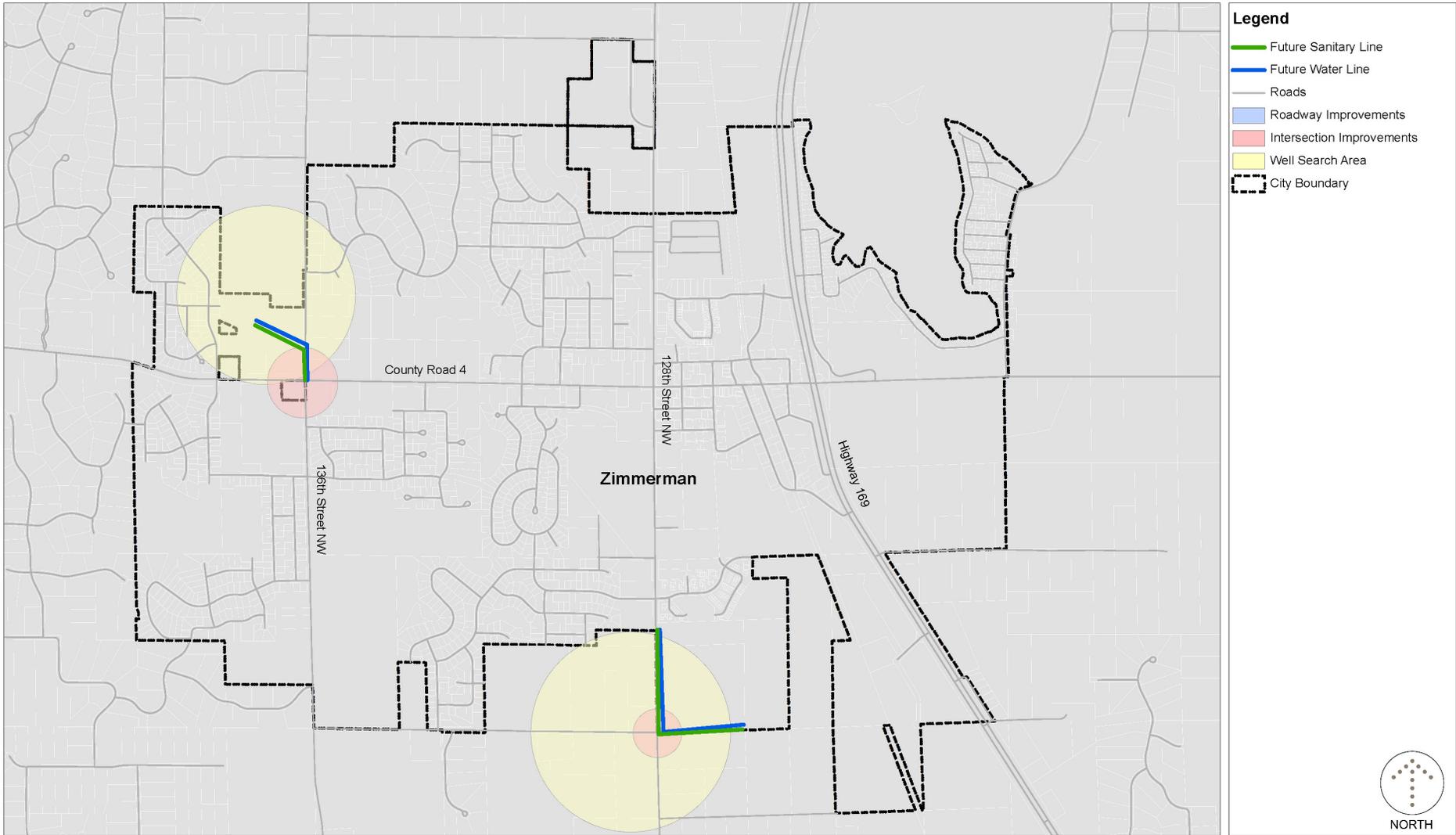


Zimmerman

The Zimmerman submarket identified in the *Comprehensive Housing Needs Analysis* is anticipated to have a total demand for 856 additional housing units by 2030. We believe that a majority of these units will be provided within the City of Zimmerman. Our analysis assumed that the residential growth will primarily be north of the Fremont Avenue and 136th Street intersection and to the northeast and northwest of the 253rd Avenue and 128th Street intersection. A new facility plan is underway to plan for the expansion of the wastewater treatment facility.

We have completed a table shown below which identifies specific transportation, water and sewer infrastructure improvements that will be necessary to support the projected housing demand.

Zimmerman		
Water System Needs	Sewer System Needs	Transportation System Needs
A third well and reservoir will be needed to serve the growth in residential units.	A new trunk sanitary sewer line running south to the 128th Street and 253rd Avenue intersection is needed to serve the future development in that area.	Intersection improvements will likely be needed at Fremont Avenue and 136th Street to handle the increased traffic from the new residential units.
An additional treatment plant or expansion to the existing treatment plant is needed to serve the growth in residential units.	A new trunk sanitary sewer line and potentially a lift station running north along 136th would be needed to serve the residential development in the area.	Intersection improvements will likely be needed at 253rd Avenue and 128th Street to handle the increased traffic from the new residential units.
A new trunk water line running south to the 128th Street and 253rd Avenue intersection is needed to serve the future development in that area.	The current wastewater treatment plant is nearing design capacity and upgrades would likely be needed with the projected demand for housing units.	
A new trunk water line running north along 136th would be needed to serve the residential development in the area.		



Legend

- Future Sanitary Line
- Future Water Line
- Roads
- Roadway Improvements
- Intersection Improvements
- Well Search Area
- City Boundary



NORTH

Summary

Summary and Recommendations

The data provided in this analysis is a snapshot in time and it is important for cities to continually evaluate their infrastructure systems to ensure development does not exceed the capacity of the roadways, sewer or water systems. The recommendations provided should be evaluated as developments come forward and test the city infrastructure systems.

The information in this study is intended to provide information to the County and affected cities so that the Capital Improvement Plans can incorporate these necessary improvements and funding can be identified early on. As developments come forward, the affected cities should evaluate the impacts on the infrastructure systems so that the required improvements can be incorporated as part of the development.

It is important for cities to maintain connections with Sherburne County and state agencies as many of the infrastructure systems, specifically transportation, are controlled by these agencies and continued communication can help aid in the process for improvements to be made to the systems within city boundaries.

