

# Oronoco Wastewater Collection and Treatment Facilities

Presentation to Legislature  
City of Oronoco, MN

2016 Bonding Bill Funding Request



The last five pages of this packet consist of an appendix that contains full size figures and graphs that are discussed within the presentation slides. Please refer to the full size figures and graphs if greater detail is desired.

# Oronoco's Project

- Oronoco is requesting ~ \$19M in State Bond Funding Assistance for the construction of a Municipal Wastewater Collection and Treatment System
- State Bond Funding is only feasible funding option for this project



A wastewater system is a fundamental piece of infrastructure that facilitates, clean water, public health, environmental protection, economic vitality and growth. Oronoco has struggled to develop and fund a municipal wastewater system for ~50 years. Oronoco is committed to the construction of a Wastewater System and needs Legislative support to accomplish this goal.

Conventional public wastewater infrastructure funding programs administered by the Public Facilities Authority (PFA) and USDA Rural Development (RD) are structured to finance the rehabilitation of existing wastewater infrastructure or construct SSTS for small communities with minimal growth potential. Unfortunately, Oronoco does not fit into either of these categories. State Bond funding is the ONLY feasible funding option to this project.

# Oronoco's Status

- Oronoco is the LARGEST un-sewered City in the State of Minnesota
- Oronoco's 2014 population was 1,405
- Oronoco is located ~5 miles north of Rochester on TH 52 and is experiencing significant development pressure



Oronoco is the LARGEST un-sewered City in the State of Minnesota! Assuming that a municipal wastewater system is constructed, Olmsted County projects that Oronoco's population will increase to between 2,238 and 2,864 by the year 2030. This population growth from 2000 to 2035 corresponds to an average growth rate of just over 3.4% per year.

This growth rate could be higher, as the Mayo Clinic's DMC initiative is now underway and beginning to create demand for housing and spurring commercial and economic growth. The undeveloped land between Oronoco's southern Ultimate Service Area boundary and existing development will support a combination of residential and commercial development totaling ~ 7,300 Equivalent Residential Units (ERUs).

# Oronoco's Challenges

- 2013 CAR found that more than 75% of the systems (112 parcels) in the Downtown Oronoco were either not compliant with current SSTS rules, or were at the end of their expected service life.
  - 26% Imminent Threat to Public Health & Safety
  - 35% Failure to Protect Groundwater



In 2013, the City completed a Community Assessment Report (CAR) that evaluated the private wastewater treatment systems in downtown Oronoco, north of the Zumbro River (Area B). This report determined that more than 75% of the systems in the study area are either not compliant with current Subsurface Sewage Treatment System (SSTS) rules, or were at the end of their expected service life. We believe that the older SSTS in Oronoco are in similar condition to the CAR study area.

The majority of the properties with non-compliant Subsurface Sewage Treatment System (SSTS) do not have cost effective options to replace their existing systems due to the presence of bedrock, high groundwater, soil conditions, proximity to the floodplain, size of their lot and setback requirements. Residents with non-compliant systems cannot easily sell their properties as financial institutions either refuse or are very reluctant to finance mortgages for properties without compliant SSTS.

# Oronoco's Challenges

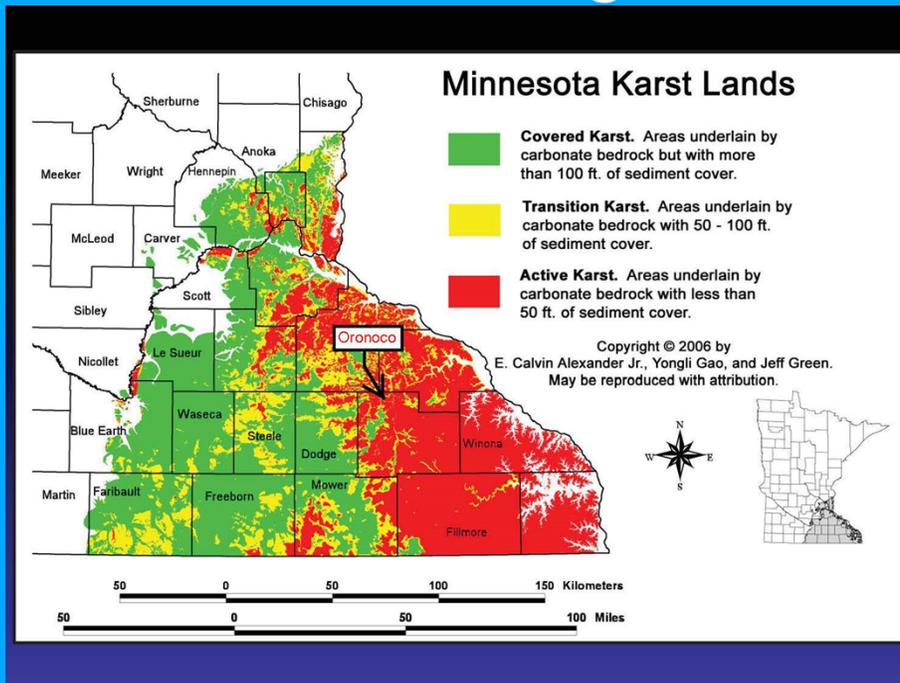
- 2015, the MPCA, Olmsted County and the City of Oronoco executed a MOU
- Non-compliant SSTS are exempt from County / MPCA enforcement action but, must be brought in to compliance or connected to a Municipal wastewater system by 2020
- Failure to construct a Wastewater System by 2020 would result in be a HUGE setback for the City and a hardship for many residents



In 2015, the MPCA, Olmsted County and the City of Oronoco executed a Memorandum of Understanding (MOU) that will expire in March of 2020. Under the terms of the MOU, non-compliant Subsurface Sewage Treatment System (SSTS) in the older parts of Oronoco (Sewer Districts B, C and F) will be exempt from new County / MPCA requirements and associated enforcement action but, must be brought in to compliance or connected to a Municipal wastewater system by 2020.

Failure to meet the MOU requirements and construct a Municipal Wastewater System would be a significant setback for the City and a hardship for its residents. Residents would be required to invest in compliant SSTS at a cost of \$10,000 to \$20,000 per parcel which means in some cases, installing sewage holding tanks that would also need to be pumped monthly at a cost of ~ \$3,000 per year. If these residents are forced to invest in individual SSTS, it will not be fair or equitable to ask them to fund a Municipal Wastewater System in the future.

# Oronoco's Challenges



What is Karst?: Karst is a distinctive topography in which the landscape is largely shaped by the dissolving action of water on carbonate bedrock (usually limestone, dolomite, and gypsum). This geological process results in unusual surface and subsurface features ranging from sinkholes, vertical shafts, disappearing streams, and springs, to complex underground drainage systems and caves.

Oronoco is located in an “Active Karst” geologic area which is underlain by carbonate bedrock with less than 50 feet of sediment cover. Oronoco’s karst geology in combination with its proximity to the Zumbro River make protecting both ground and surface waters a priority. The elimination of hundreds of noncompliant SSTS systems in Oronoco would be a significant step towards protecting both resources. To that end, the Olmsted County Water Management Plan (2013-2023) supports the development of a Municipal Wastewater System in Oronoco.

# Oronoco's Challenges

- TH 52 bi-sects Oronoco in a north-south direction
- The Middle Fork and South Branch of the Zumbro River flow through Oronoco in a east-west direction
- Oronoco includes a mix of older and newer residential housing spread over a large geographic area
- Terrain is rolling with small bluffs, high bedrock and karst geology



Serving Oronoco with a Municipal Wastewater System is complicated by existing topographic, geologic and transportation infrastructure constraints. These challenges and constraints are summarized as follows:

- Oronoco is situated in Olmsted County approximately 5 miles north of the City of Rochester and currently encompasses approximately 1,330 developed acres.
- Oronoco's Ultimate Service Area includes Oronoco's current City Limits plus an additional 2,400 acres located primarily to the south of the current City Limits.
- U.S. Highway 52 bi-sects Oronoco in a north-south direction.
- The Middle Fork and South Branch of the Zumbro River generally flow west to east and merge in the center of Oronoco.
- Present-day Oronoco includes the original historic downtown area containing primarily smaller residential lots, residential lots developed along the former Lake Shady lakebed and more recent residential development consisting of larger lots, many of which were developed under Oronoco's Interim Residential Subdivision Ordinance.
- Terrain is rolling with small bluffs, high bedrock and karst geology.

## Oronoco's Achievements to Date

- Enacted Interim Residential Subdivision Ordinance in ~ 2002
- Constructed partial Water System in 2009
- Downtown CAR in 2013
- Prepared Wastewater Facility Plan in 2014
- Executed MOU with MPCA and County in 2015
- Placement on the Public Facilities Authority (PFA's) CWRP PPL



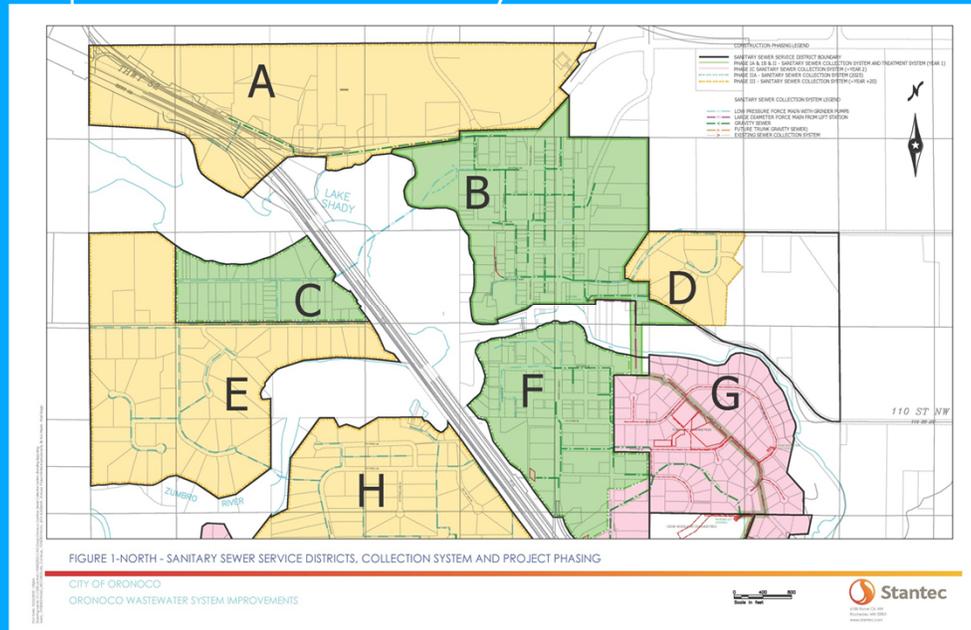
Oronoco has been planning for and investing in a future municipal wastewater system for some time. To that end, Oronoco's Interim Residential Subdivision Ordinance was developed and implemented in ~2002. Development under this Ordinance requires that the developer construct a municipal-type wastewater collection and water distribution system. Wastewater treatment was then provided by a Community Waste Treatment System (CWTS) and water was supplied by a community well. Both systems were intended to ultimately be incorporated into a traditional municipal water supply and sewer collection and treatment systems with the CWTS's being abandoned in place and redeveloped as parkland or residential housing.

The construction of the municipal wastewater collection systems for development under the Interim Residential Subdivision Ordinance required a significant investment by the City of Oronoco and its residents. The result of this investment is that cost to serve these subdivisions is significantly less than the cost would be if the wastewater collection systems were not constructed.

Currently there are three commercial developments (~13 lots) and three residential developments (~225 Lots) that have been developed under this ordinance. The water supply and distribution systems have been incorporated into the City's Water system. The abandonment of the existing CWTS's and conveyance of the associated wastewater can be completed efficiently and will also facilitate serving future development. In addition, serving these parcels is advantages as it brings a significant number of users to the proposed wastewater utility to help pay for the infrastructure improvements and operation and maintenance costs.

Oronoco has applied for low interest loan funding through the Public Facilities Authority's (PFA's) Clean Water Revolving Loan Fund (CWRP) and has three projects placed on the Project Priority List (PPL).

## Proposed Wastewater System



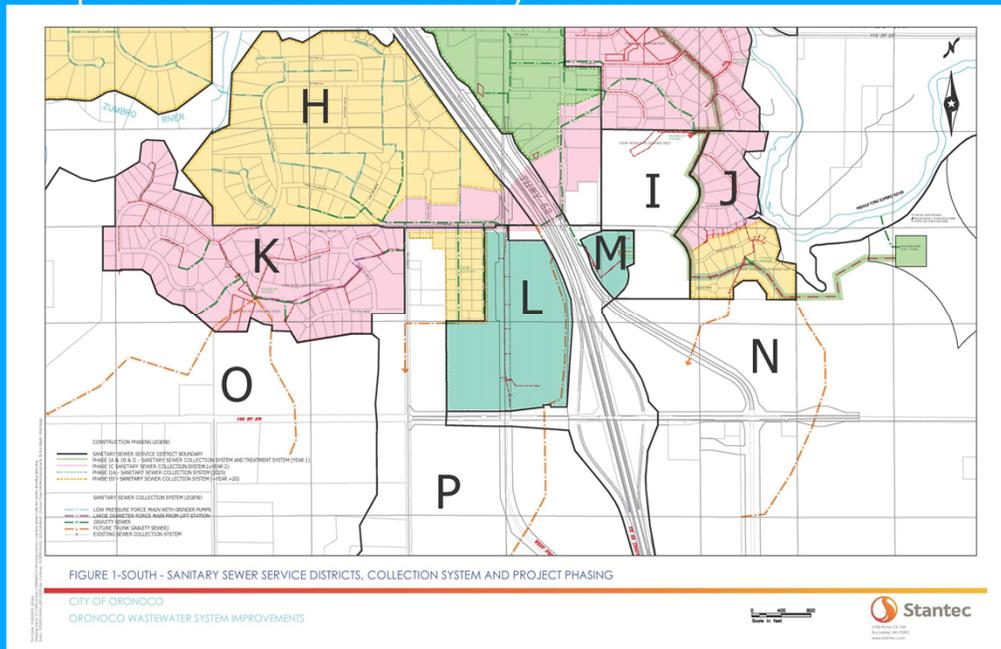
Oronoco's proposed wastewater system improvements are comprised of a wastewater treatment facility (WWTF) and sanitary sewer collection and conveyance infrastructure. The proposed wastewater system is discussed in detail within a draft Wastewater Facilities Plan prepared by Stantec for the City of Oronoco in April 2014.

### Sanitary Sewer Collection and Conveyance Infrastructure Scope:

Oronoco's rolling topography, diverse geology and river systems in combination with the existing Trunk Highway 52 facilities and sprawling residential development make the development and implementation of an efficient sanitary sewer collection and conveyance system a significant challenge. In light of these challenges and constraints, a proposed sanitary sewer collection and conveyance system was developed that strives to provide sanitary sewer service to Oronoco's existing and developing properties over the next twenty years and beyond. The proposed sanitary sewer collection system includes a combination of gravity collection, low pressure system collection and centralized lift stations to convey wastewater out of low lying areas via force main to the proposed WWTF.

The preliminary design layout of the proposed sanitary collection and conveyance system is shown on Figures 1-North and 1-South. Within these figures, each of Oronoco's 16 sanitary sewer districts are outlined in black and project phasing is color coded per the figure legend. Proposed sanitary sewer collection system improvements are illustrated with different colored line types as indicated in the figure legend. The proposed sanitary sewer collection system (which Oronoco is requesting Bonding Funds) would initially service ~ 419 properties located in Sewer Districts B, C, F, G, J, K and would be expanded to serve sewer service of Districts L and M in 2025.

## Proposed Wastewater System



### Sanitary Sewer Collection and Conveyance Infrastructure Scope (Continued):

Note that existing development agreements associated with Districts L and M prohibit connection to a municipal collection system until 2025 and that the costs to connect these areas with the proposed sanitary sewer collection system would be borne completely by the property owners and City. Sewer Districts A, D, E and H would be completed at the request of the property owners in these areas but, is not anticipated for 20 plus years as these areas are predominantly served by compliant SSTS with ample property to facilitate SSTS replacement, if needed. Sewer Districts I, O, P and N would be served as development occurs and with sewer collection and conveyance primarily at the cost to the property developers.

### Wastewater Treatment Facilities Scope:

The proposed municipal WWTF would be located in Oronoco and is intended to serve residents and businesses within the City Limits. The WWTF would initially be sized for a 0.38 MGD AWW flow that is projected to serve the Oronoco's wastewater treatment needs over the next 20 years. The mechanical WWTF would employ a variety of equipment and unit processes to produce an effluent capable of meeting discharge limits into the Middle Fork of the Zumbro River.

# Water System Improvements

- Excluded from Bonding Funding Request – City will fund ~ \$3.1 M in estimated Project Costs
  - Plan to expand the water system to serve properties in sewer districts C and F in conjunction with the proposed sanitary sewer collection system
  - Plan to extend the trunk watermain between sewer district C and K
  - Add a second well to the water supply system



## **Related Water System Improvements Scope (Excluded from Bonding Funding Request):**

Oronoco currently has a municipal water supply and distribution system that serve about 2/3 of the City. Oronoco is planning to expand the water system to serve properties in sewer districts C and F in conjunction with the proposed sanitary sewer collection system improvements. The rationale being that there is a documented need to serve these areas with water and it would be most efficient and cost effective to construct both sewer and water facilities at one time.

In addition to the aforementioned water distribution improvements, Oronoco is also planning to extend the proposed trunk watermain within sewer district C, southward to connect with the existing trunk watermain located in sewer district K. This watermain loop is necessary to prevent water stagnation issues within sewer district C, provide adequate fire protection and enhance system reliability. Finally, Oronoco is tentatively planning to add a second well to the water supply system. A second well is needed to enhance water supply reliability in case there are mechanical issues with Oronoco's sole well. Oronoco is NOT requesting any Mn Bonding Funding assistance for the aforementioned water system improvements with an estimated project cost of \$3,123,384 as we do not wish to complicate our application or detract from our primary goal of constructing a municipal wastewater system.

Proposed Project Cost Share	Notes	Wastewater Collection and Treatment	Water Supply and Distribution Improvements	Combined Totals	Percent of Combined Total Project Cost
<b>Total Estimated Project Costs</b>		<b>\$23,091,000</b>	<b>\$ 3,123,384</b>	<b>\$26,214,384</b>	<b>100.0%</b>
<b>Local Share (Assessments / Connection Charges / Utility Rates / City Taxes)</b>	<b>1, 2</b>	<b>\$2,095,000</b>	<b>\$ 3,123,384</b>	<b>\$5,218,384</b>	<b>19.9%</b>
<b>PFA Wastewater / PSIG (Point Source Implementation Grant) Grant Funding</b>	<b>3</b>	<b>\$2,000,000</b>	<b>0</b>	<b>\$2,000,000</b>	<b>7.6%</b>
<b>Total Requested Mn Bonding Assistance</b>		<b>\$18,996,000</b>	<b>0</b>	<b>\$18,996,000</b>	<b>72.5%</b>



Project Cost Summary Table Notes:

1. Wastewater local share is based upon 419 connections at ~\$5,000 per parcel. Oronoco plans to secure low interest loan through PFA's CWRF Loan program and repay this amount over the term of the loan.
2. Water system Local Share would be completely funded by the City and Users. Oronoco plans to secure low interest loan through PFA's DWRF Loan program and repay this amount over the term of the loan using Utility Rates, assessments and connection charges.
3. Grant funding assistance is estimated and NOT guaranteed.

# Oronoco's Investments to Date

<b>Wastewater System Investments made by City of Oronoco and it's Residents</b>	
<b>2014 Facility Plan</b>	<b>\$65,000</b>
<b>Sewer and Water Committee Meetings - Engineering (2010 to 2015)</b>	<b>\$9,360</b>
<b>TH 52 Casings and small diameter force main pipe</b>	<b>\$20,000</b>
<b>Wastewater collection system serving ~ 238 Residential and Commercial Lots developed under the Interim Subdivision Ordinance</b>	<b>\$1,785,000</b>
<b>Total Recent Monetary Investment =</b>	<b>\$1,879,360</b>
<b>% Total Water / Wastewater Project Costs =</b>	<b>7.2%</b>



Oronoco has been proactively investing in Sewer and Water infrastructure for many years, with the goal of developing the municipal utilities that are common for cities of its size and development potential. A summary of investments associated with the development of a municipal Wastewater system over the past 12 years are summarized in the table above. The total cost of these recent investments in wastewater infrastructure total \$1,879,360 or 7.2% of the \$26,214,384 combined Wastewater and Drinking Water system estimated project costs. This cost share does not show up in the CBS system calculations but, are an important consideration.

# The Need for Funding Assistance

- Oronoco's Wastewater System Project Costs totals \$23,091,000 and would be constructed in 2017, 2018 and 2019
- Estimated cost to serve the initial 419 properties would be \$55,110 per parcel!
- Existing agency wastewater infrastructure funding programs are structured to finance the rehabilitation projects or construct SSTS
- Oronoco does not fit into either of these categories



The total estimated project costs for Oronoco's Wastewater System is \$23,091,000 and would be designed and bid in 2016 and constructed in 2017, 2018 and 2019. The MPCA, Olmsted County and City of Oronoco MOU requires connection to a Municipal system (compliance) by March 2020. The project schedule is tight!

If no bonding or grant assistance is secured to fund this project, the estimated cost to serve the initial 419 properties would be \$55,110 per parcel! Conventional agency wastewater infrastructure funding programs administered by the Public Facilities Authority (PFA) and USDA Rural Development (RD) are structured to finance the rehabilitation of existing wastewater infrastructure or construct SSTS for small communities with minimal growth potential. Unfortunately, Oronoco does not fit into either of these categories. Oronoco is starting from the beginning and does not have the existing municipal wastewater system needed to serve its growing population.

# The Need for Funding Assistance

- Oronoco does not qualify for sufficient grant funding to allow this project to move forward.
- Oronoco has met and will continue to work with MPCA and PFA on project funding
- Without Capital Investment Committee Assistance, the project is not economically feasible and cannot move forward



Oronoco's overall median income is too high to qualify for significant grant funding. However, the downtown area of Oronoco (Sewer District B & F) were surveyed in 2008 and at that time reported median income of \$42,500. This is also the area with the greatest need for a Wastewater System. Oronoco may qualify for Point Source Implementation Grant (PSIG); however, grant funding is capped at a maximum of \$3 million.

The only feasible way Oronoco can afford a wastewater system is through a combination of MN Bonding funds, PSIG / PFA administered grant and loans and local cost share. Local cost share would be comprised of assessments / connection charges, user fees and local tax revenue.

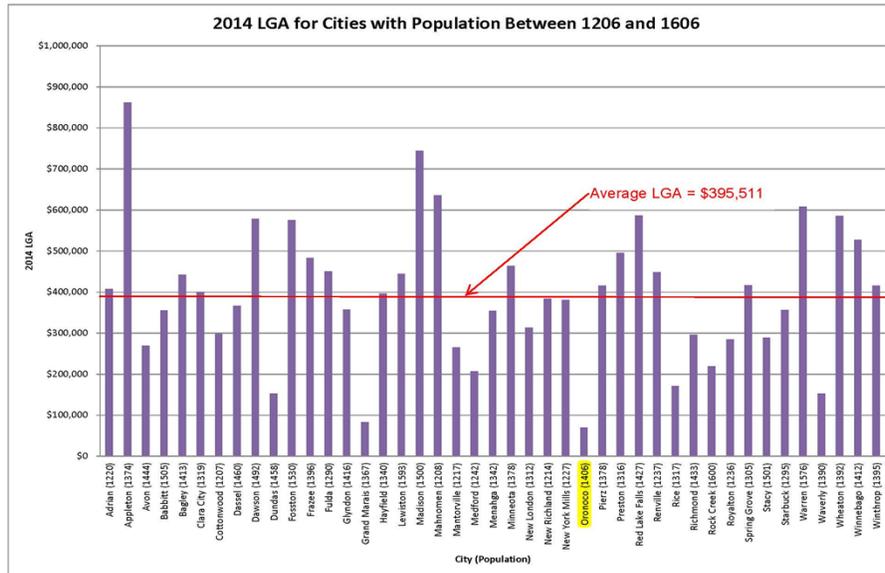
# The Need for Funding Assistance

- Oronoco's total tax Levy in 2014 was \$678,834.
- Modest commercial tax base.
- Burdened with existing debit service to pay for the first phase of a ~ \$2.8M City water supply and distribution system constructed in 2009 & 2010



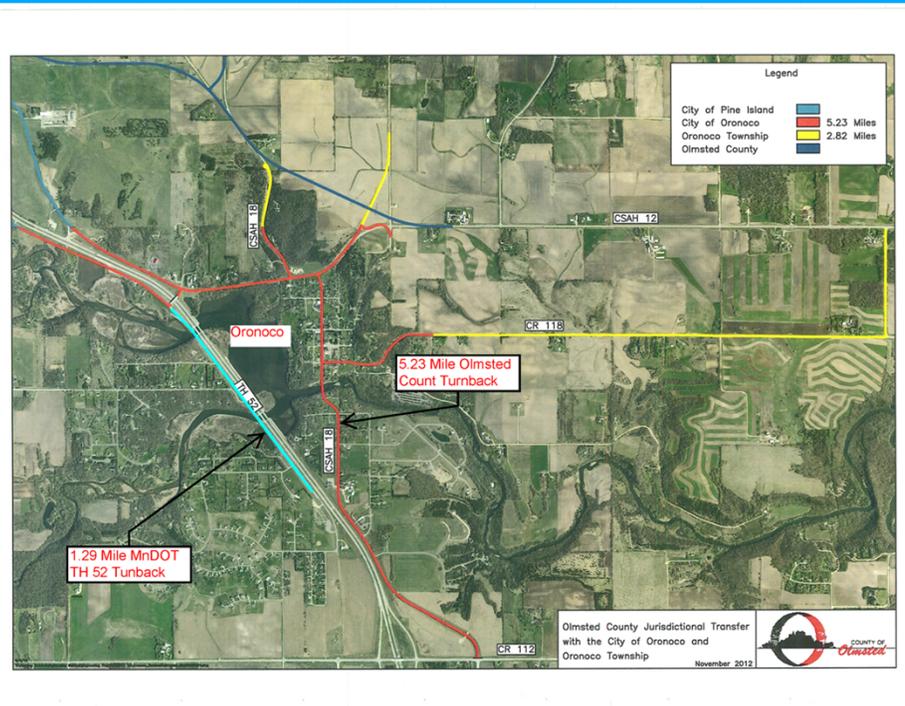
The lack of a wastewater system inhibits Oronoco's ability to attract commercial / industrial development or implement smart growth principals including higher density residential housing, retirement communities and apartments.

# The Need for Funding Assistance



Oronoco's 2014 LGA payment was \$70,114. The Average 2014 LGA funding for Cities with populations within ~ 200 population of Oronoco (pop. 1406) was \$395,510.84. This is 82.3% less LGA funding than other, similarly sized Minnesota Cities. If Oronoco received an additional \$325,396.84 in LGA to match the average LGA payment for similarly sized Cities, this funding would make a principal and interest payment on a 20 year PFA loan at 1% interest with a loan amount totaling \$7,226,306.

# The Need for Funding



Over the course of the past six years, MnDOT and Olmsted County have "Turned Back" 5 bridges and 6.52 miles of roadway to the City of Oronoco to operate and maintain. Oronoco had no authority to reject the turn backs under state law. The estimated cost to operate and maintain these facilities over the next 25 years totals nearly \$2.1 million or \$95,888 per year. The estimate is based on 2015 construction costs and excludes inflation. The 6.52 miles of turnback roadway increased Oronoco's total length of two lane roadway by 30.7% to 21.25 miles.

## The Urgency for Oronoco's Wastewater Funding Request:

- Enable Oronoco to meet mandates set forth by the MOU with Olmsted County and MPCA by 2020 (+3 years of construction required)
- Allow residents to upgrade or sell existing homes
- Protect ground and surface water
- Facilitate "Smart" commercial and residential development



More than 75% of the systems in Sewer District B (and likely Sewer Districts C & F) are either not compliant with Subsurface Sewage Treatment System (SSTS) standards, or are at the end of their expected service life. The MOU established with the MPCA and Olmsted County requires these areas (Sewer Districts B, C & F) become compliant by March of 2020. Failure to construct a Municipal Wastewater System by the mandated deadline would be a significant setback for the City and a hardship for its residents. (Residents in these areas are currently having difficulty selling / financing their homes and requiring them to invest in expensive SSTS improvements effectively eliminates the option to construct a Municipal Wastewater system.)

To meet the MOU deadline and construct a Wastewater system that will meet Oronoco short and long term needs, funding must be secured in 2016. The project schedule to achieve the project goals is tight and we need Legislative assistance to move forward.

THANK YOU FOR YOUR CONSIDERATION!

- We need your help!



Should you have any questions or would like additional information regarding Oronoco proposed Wastewater System Improvements or request for Bonding Funds, please do not hesitate to contact the following individuals:

Mayor Kevin McDermott: Phone - (507) 421-4196; Email: [kmmcdermott@bevcomm.net](mailto:kmmcdermott@bevcomm.net)

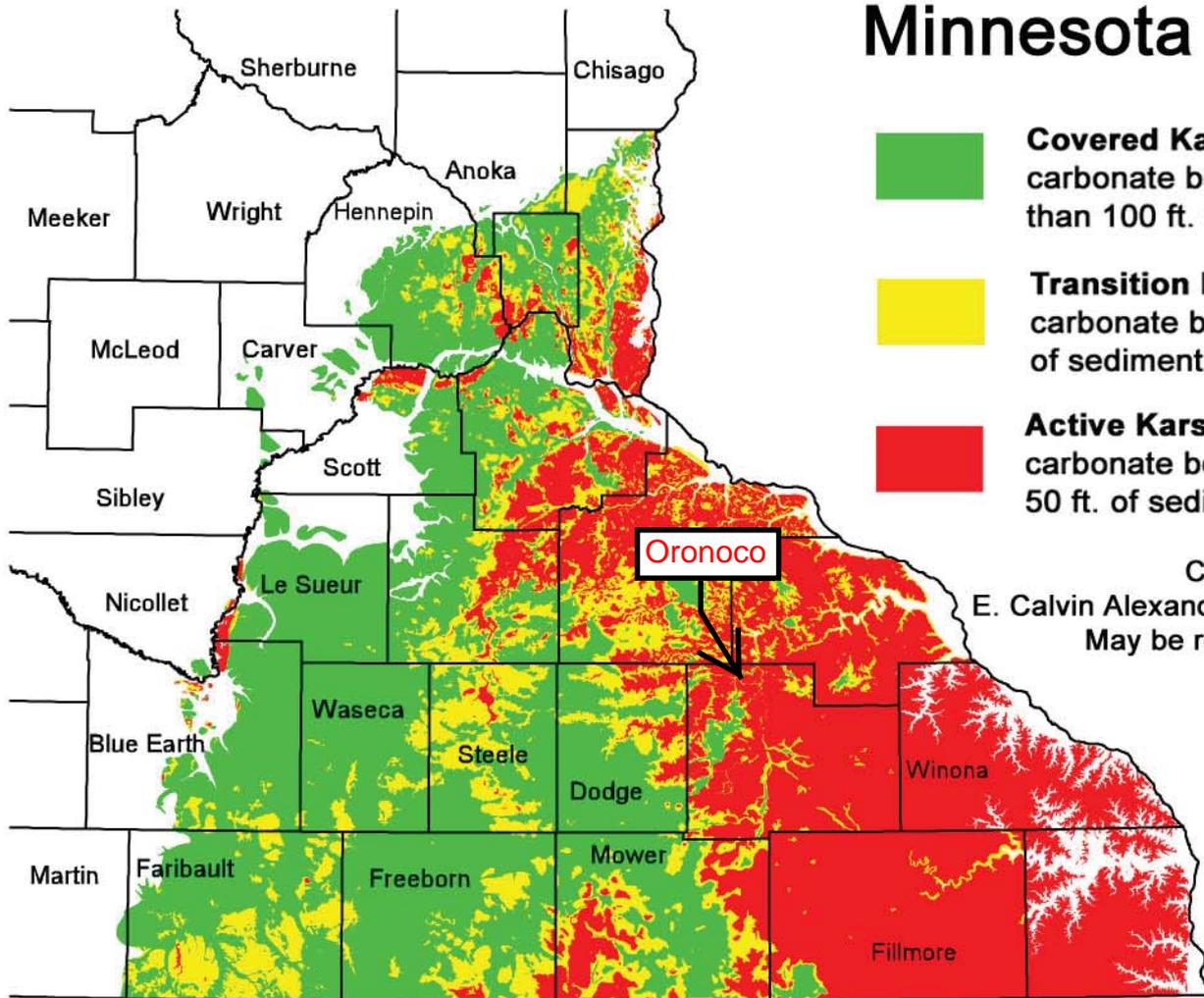
City Clerk – Sandy Jessen: Phone - (507) 367-4405; Email: [oronococity@gmail.com](mailto:oronococity@gmail.com)

City Engineer – Joseph Palen: Phone - (507) 251-2568; Email: [joseph.palen@stantec.com](mailto:joseph.palen@stantec.com)

# ORONOCO WASTEWATER COLLECTION AND TREATMENT SYSTEM

## FIGURE APPENDIX

# Minnesota Karst Lands



**Covered Karst.** Areas underlain by carbonate bedrock but with more than 100 ft. of sediment cover.



**Transition Karst.** Areas underlain by carbonate bedrock with 50 - 100 ft. of sediment cover.



**Active Karst.** Areas underlain by carbonate bedrock with less than 50 ft. of sediment cover.

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50 0 50 100 150 Kilometers

50 0 50 100 Miles

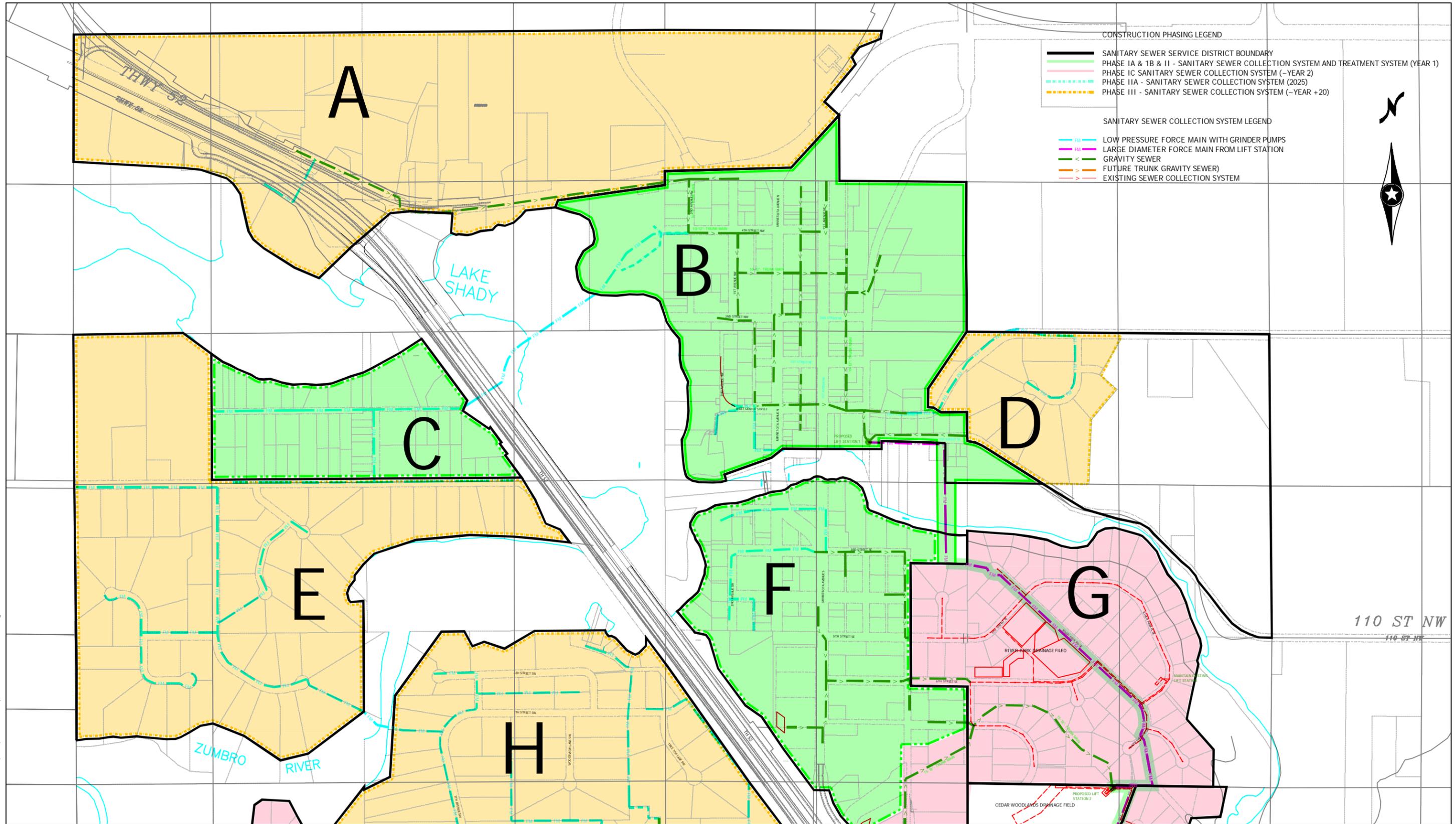


FIGURE 1-NORTH - SANITARY SEWER SERVICE DISTRICTS, COLLECTION SYSTEM AND PROJECT PHASING

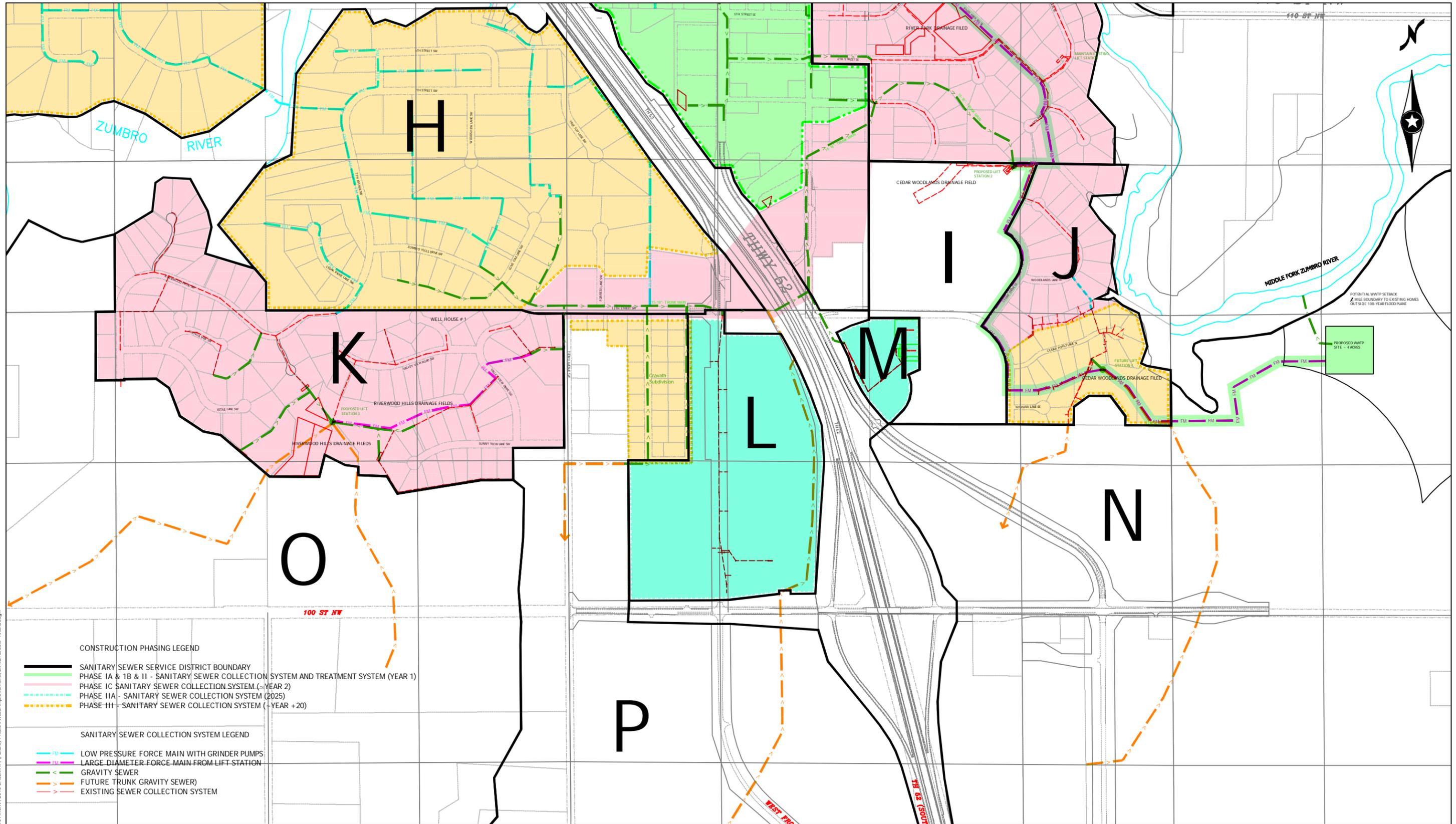
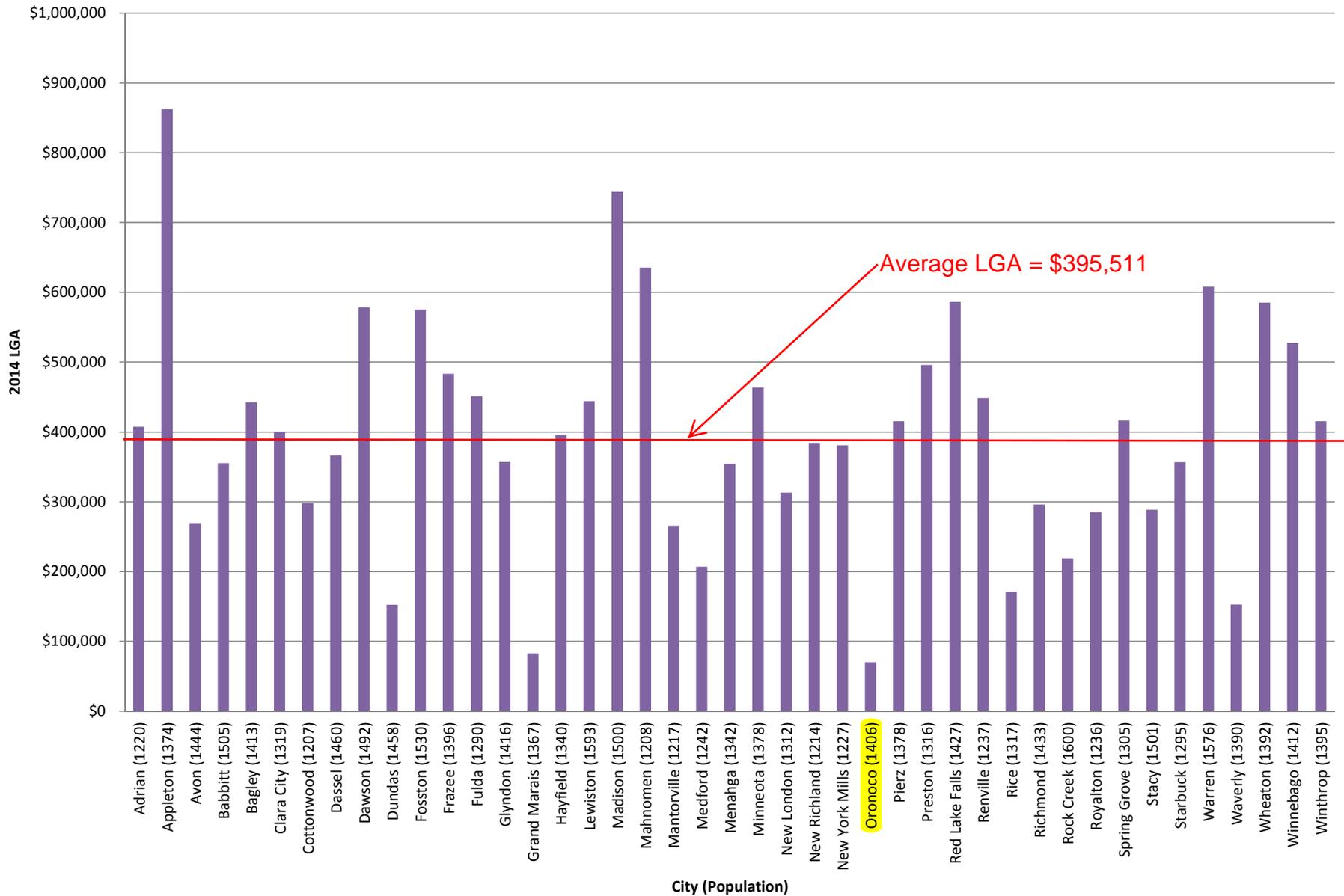
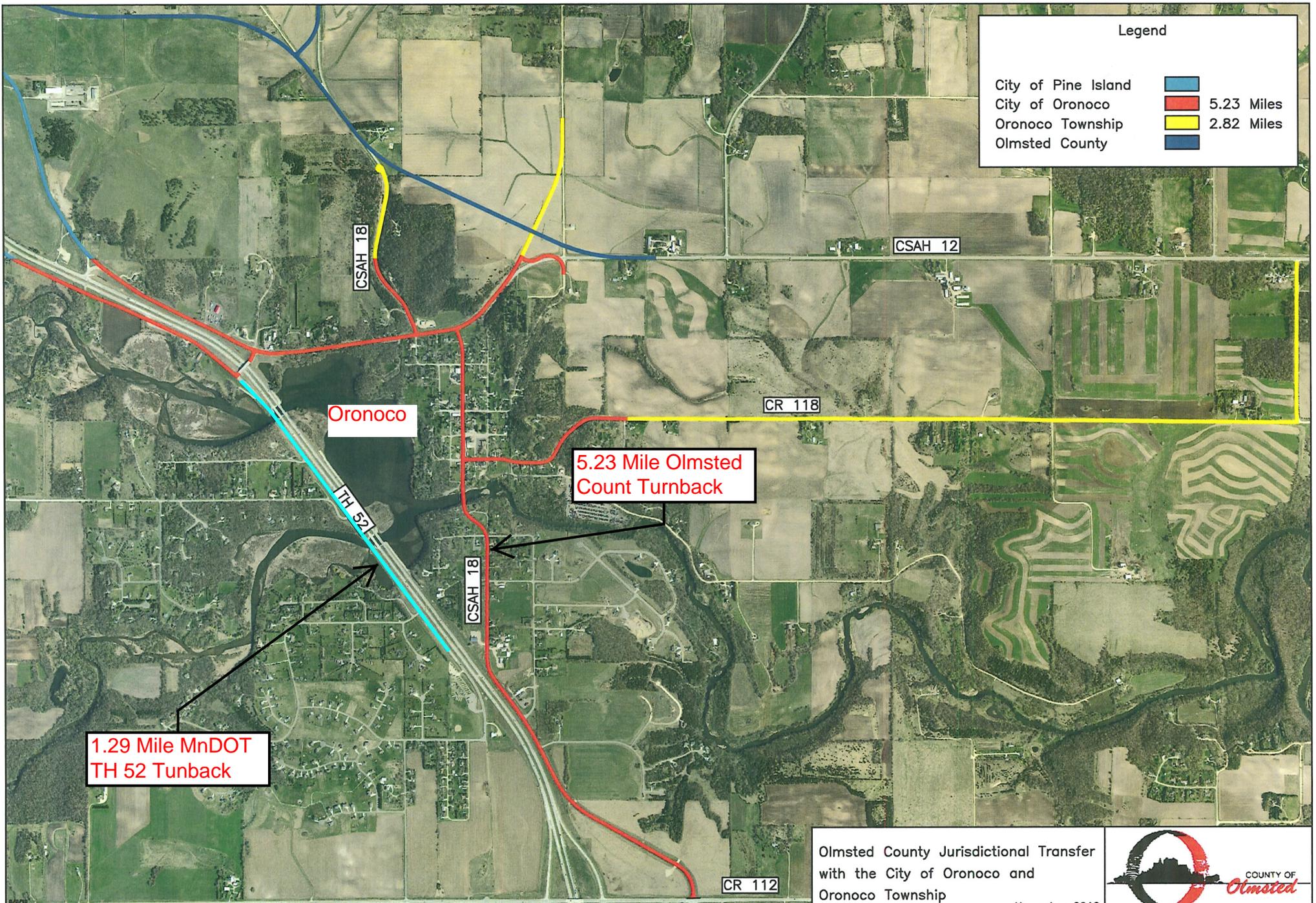


FIGURE 1-SOUTH - SANITARY SEWER SERVICE DISTRICTS, COLLECTION SYSTEM AND PROJECT PHASING

## 2014 LGA for Cities with Population Between 1206 and 1606





Legend	
City of Pine Island	
City of Oronoco	5.23 Miles
Oronoco Township	2.82 Miles
Olmsted County	

**Oronoco**

**5.23 Mile Olmsted  
Count Turnback**

**1.29 Mile MnDOT  
TH 52 Tunback**

Olmsted County Jurisdictional Transfer  
with the City of Oronoco and  
Oronoco Township  
November 2012

