

Wastewater Facilities Plan

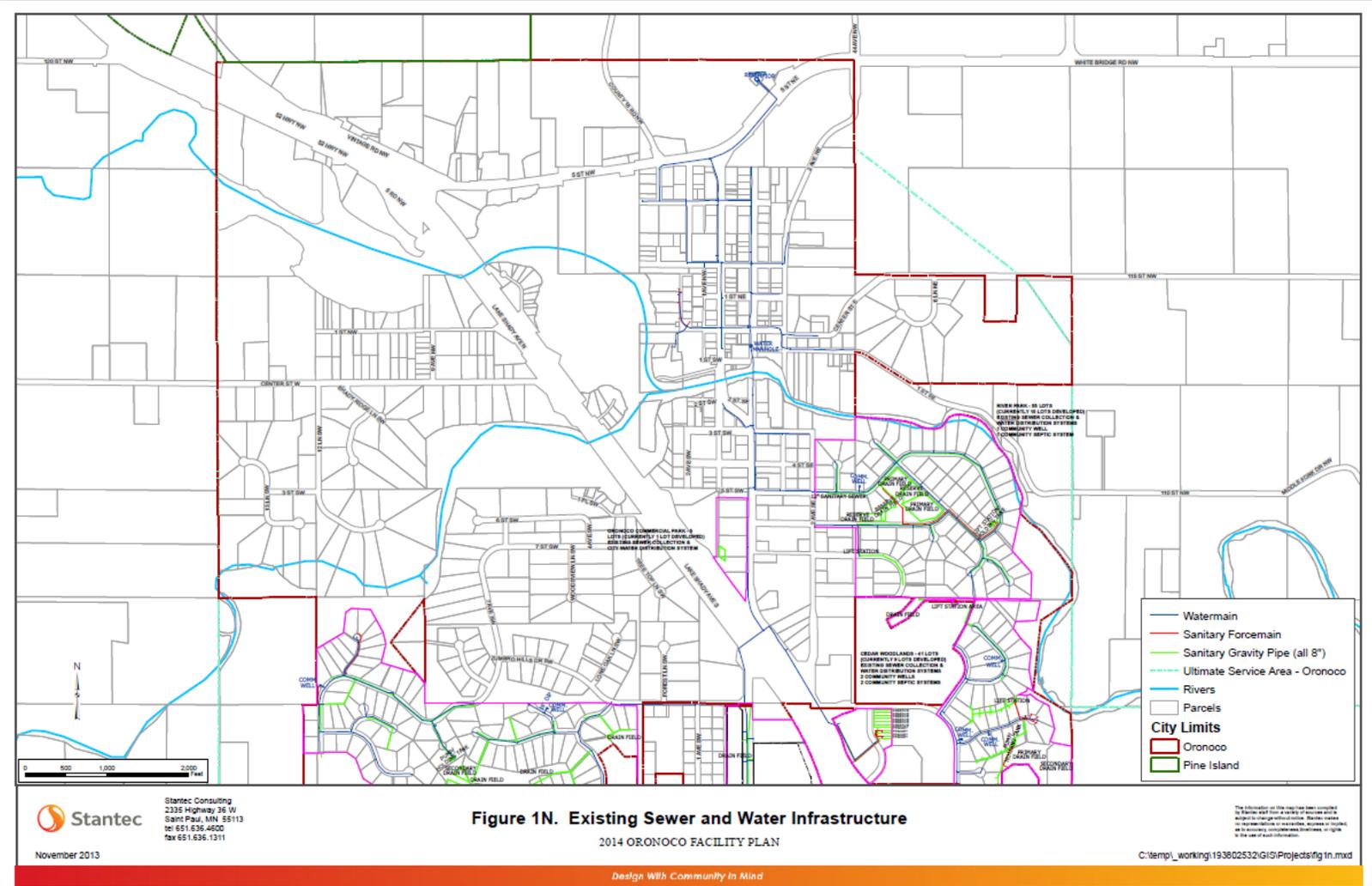
Public Hearing

City of Oronoco, MN

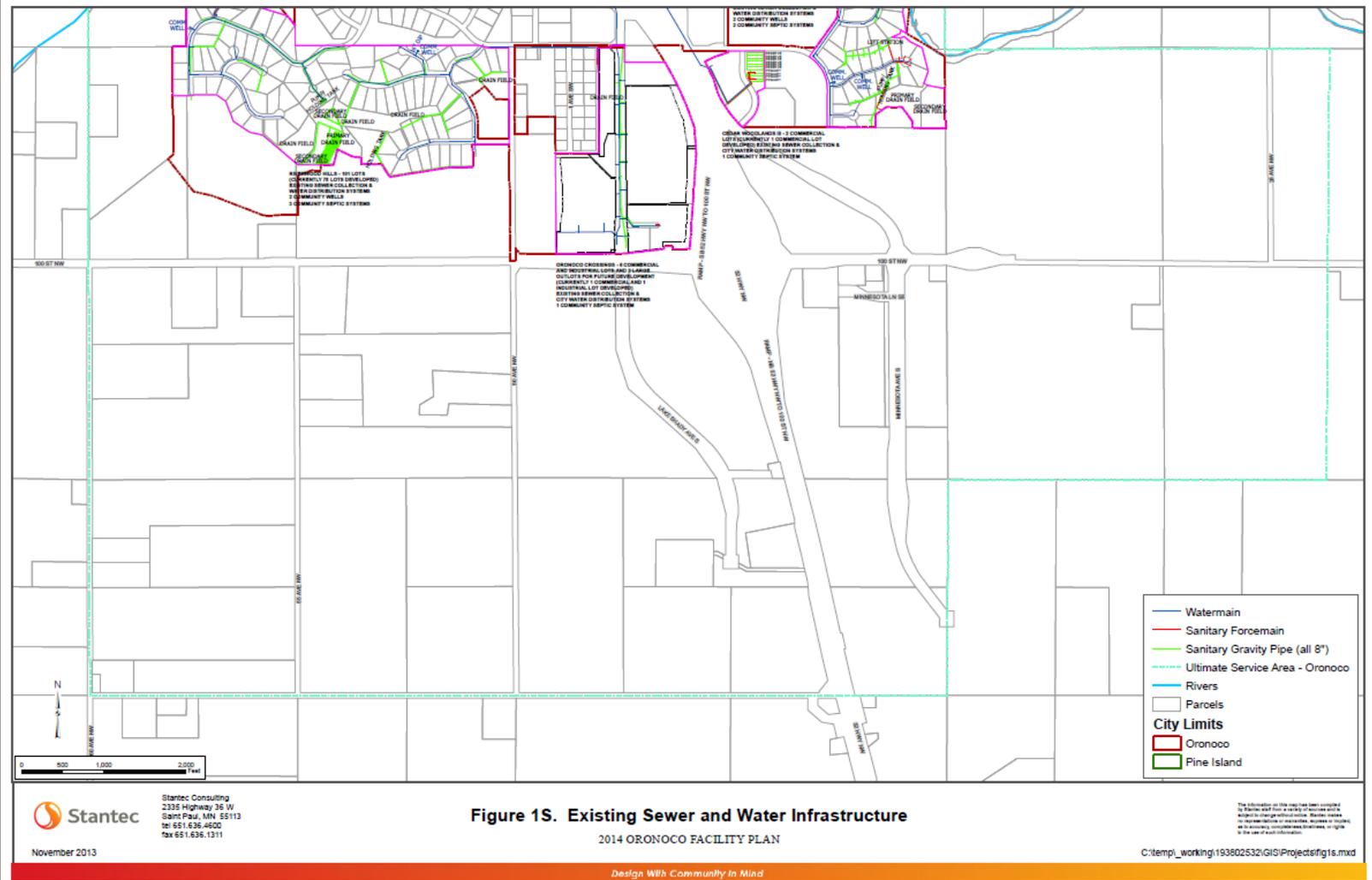
April 9, 2014



Existing Sewer and Water



Existing Sewer and Water



Sewer Service Districts & Collection System

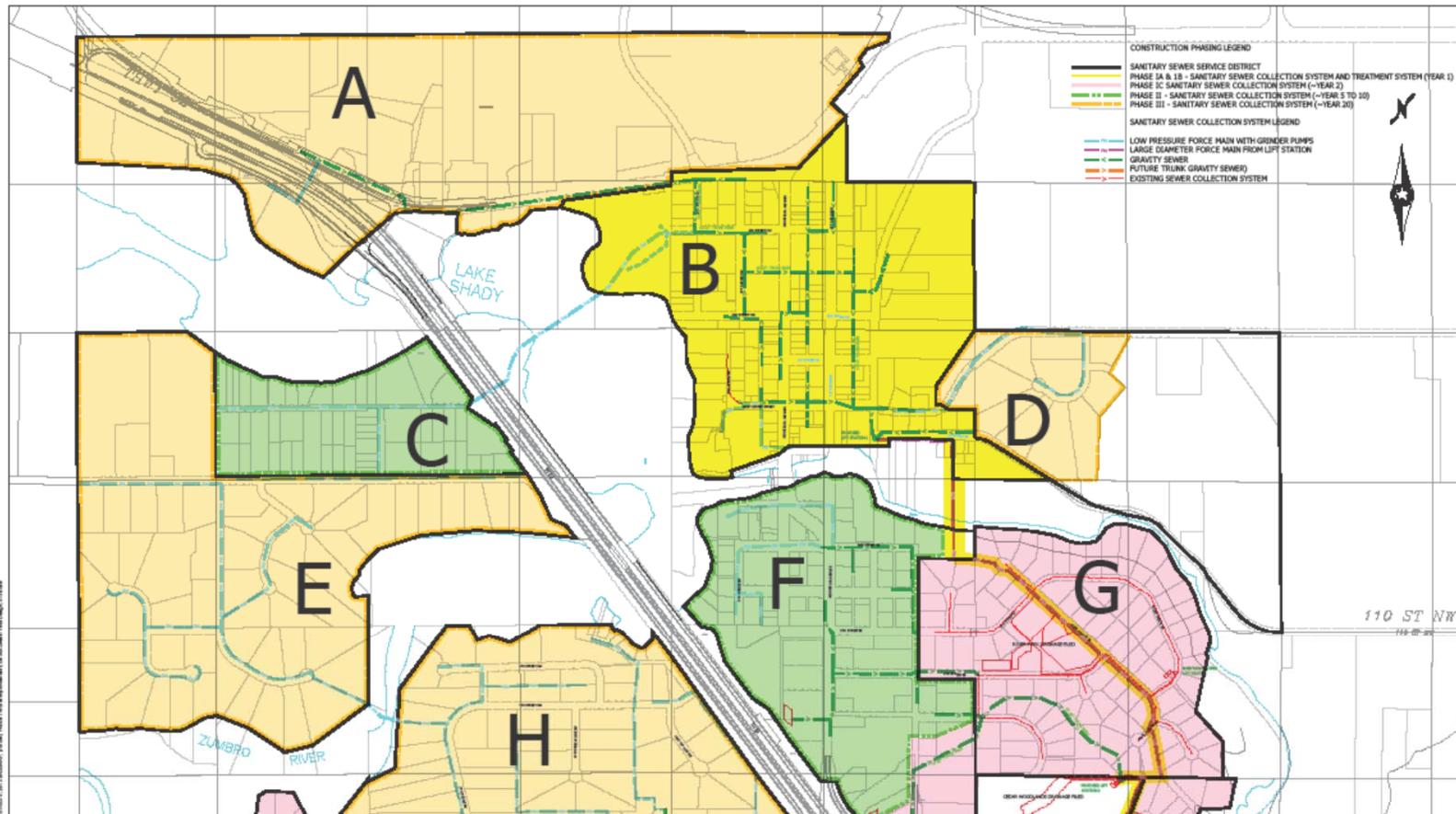


FIGURE 5-NORTH - SANITARY SEWER SERVICE DISTRICTS, COLLECTION SYSTEM AND PROJECT PHASING

CITY OF ORONOCCO
2014 ORONOCCO FACILITY PLAN



Sewer Service Districts & Collection System

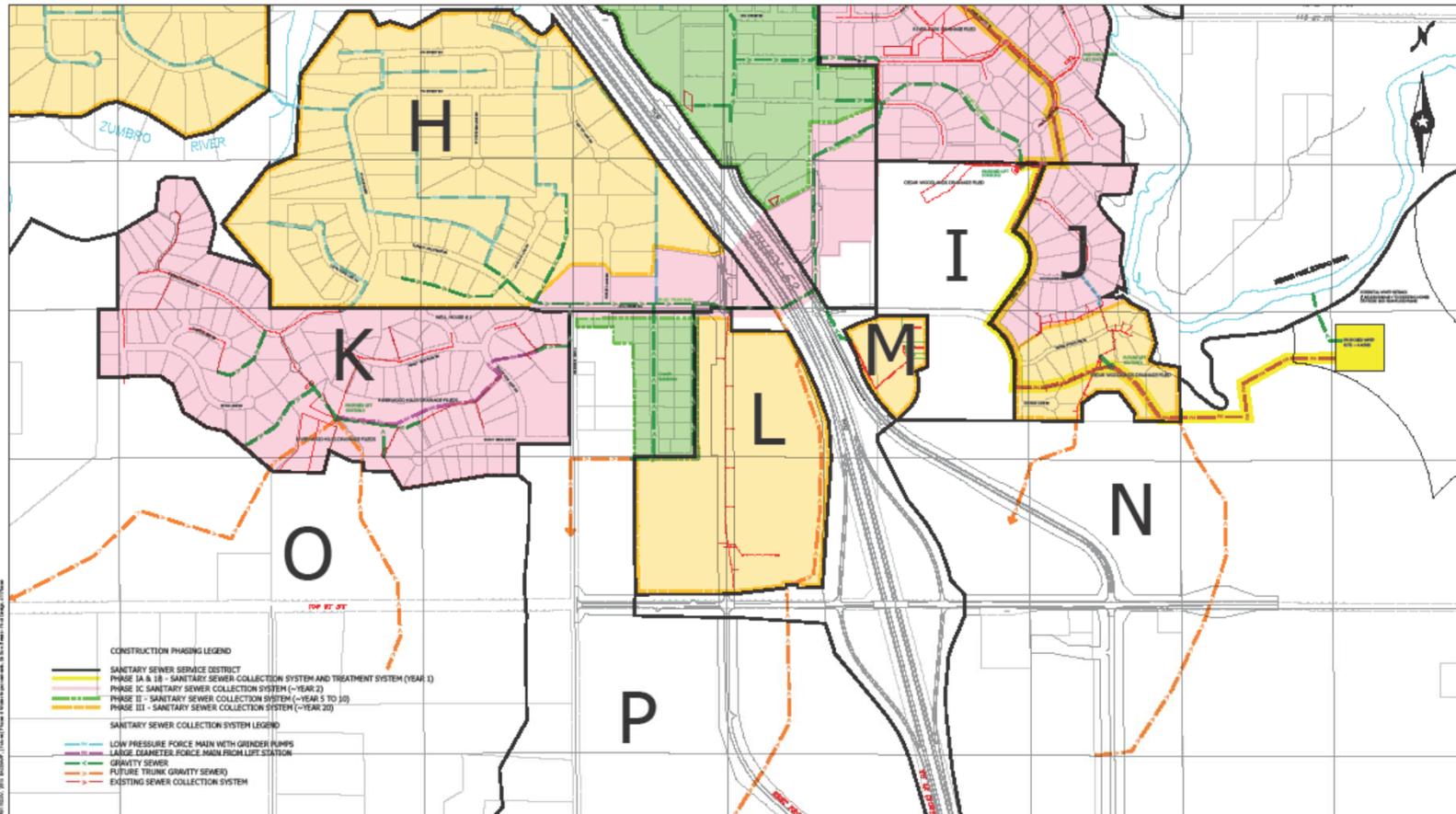


FIGURE 5-SOUTH - SANITARY SEWER SERVICE DISTRICTS, COLLECTION SYSTEM AND PROJECT PHASING

CITY OF ORONOCO
2014 ORONOCO FACILITY PLAN

0 1000 2000
500ft In Feet



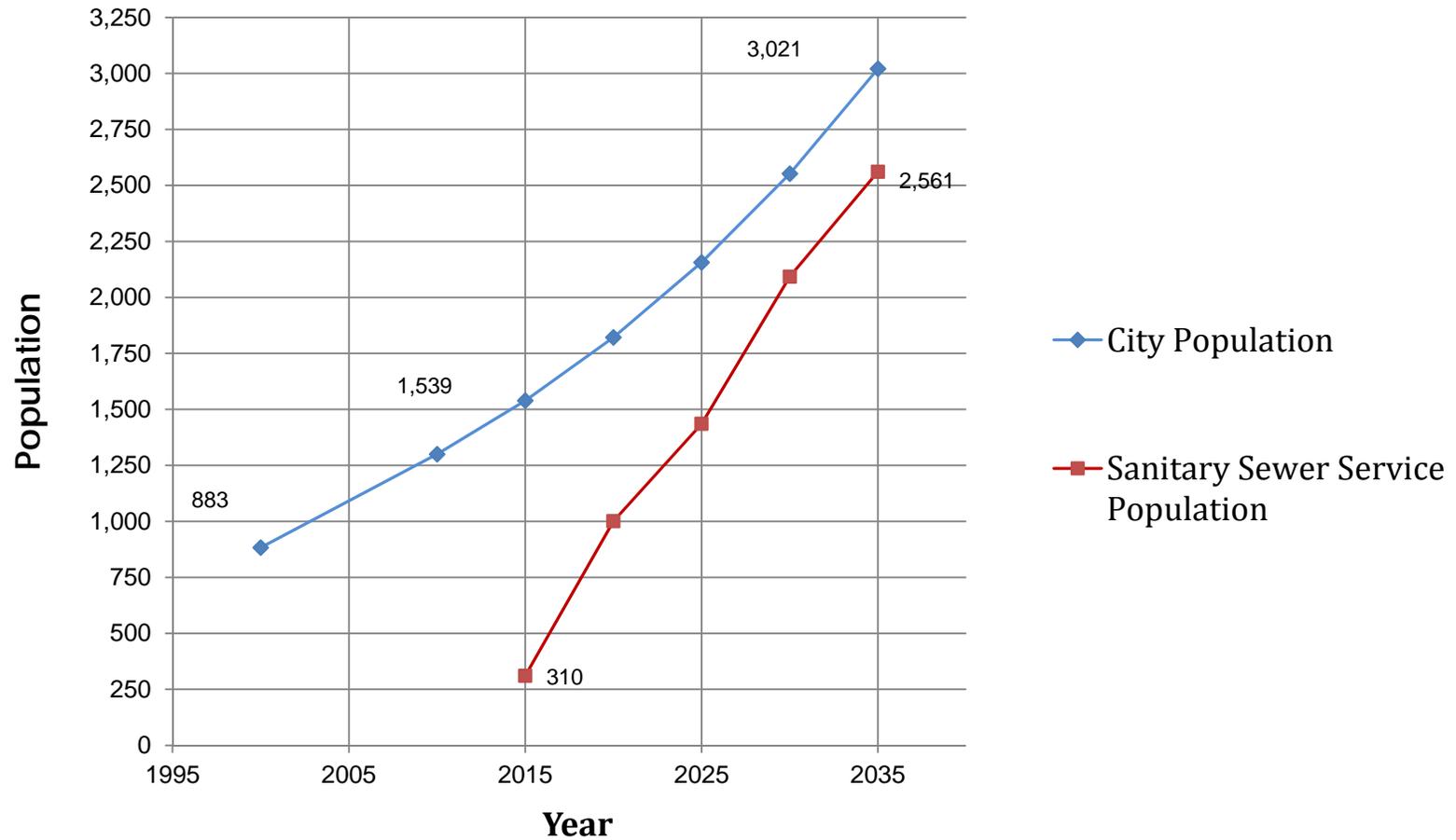
Sewer District Summary

District	Developed Residential	Developed Business & Institution	Size (acres)	Proposed Construction Phase	Future Additional Development (ERU)	Flows to Lift Station	Comments
A	12	6	223	3	40	1	Low priority for service, modest growth, systems largely compliant
B	97	15	162	1	23	1	High priority for service, minimal growth, ~ 75% of septic systems failing or obsolete
C	42	0	52	2	5	1	Medium priority for service, minimal growth, ~ Significant number of septic systems failing or obsolete
D	15	0	108	future	30	1	Low priority for service, growth limited by terrain, large lots with replacement options
E	53	0	184	3	0	2	Low priority for service, developed residential, large lots with largely compliant systems
F	48	6	131	2	30	2	Medium priority for service, Commercial and Residential growth in short term, ~ Significant number of septic systems failing or obsolete
G	45	0	109	1	45	2	River Park Subdivision with existing collection and community treatment systems, likely fully developed in 5 years
H	88	3	197	3	5	2	Low priority for service, minimal growth, large lots with largely compliant systems
I	0	0	57	future	142.5	2	High growth and residential development potential, currently agricultural land
J	15	0	53	Half Phase 1, Half future	26	2 & 4	Cedar Woodlands Subdivisions with existing collection and 2 community treatment systems, likely fully developed in 5 to 10 years
K	99	0	139	1	3	3	Riverwood Hills Subdivisions with existing collection and community treatment systems, nearly fully developed
L	0	2	74	3	370	2	Oronoco Crossing Subdivision with existing collection and community treatment system, 31 acres to be developed, connection to City System in 2025 per development agreement
M	0	1	10	3	50	2	Cedar Woodlands II Commercial Subdivision with existing collection and community treatment system, connection to City System in 2025 per development agreement
N	5	0	972	future	2907.5	4 & others	High future growth potential (residential ~ 779 acre and commercial ~ 193 ace), currently agricultural. Will require future lift station(s) to serve entire area.
O	4	0	668	future	1666	3 & others	High future growth potential (residential), currently agricultural. Will require future lift station(s) to serve entire area.
P	36	0	592	future	2591.5	2	High future growth potential (residential ~ 433 acres and commercial ~ 159 acre), currently agricultural. Will require future lift station(s) to serve entire area. Phase 2 collection system improvements serve only the developed lots within the Cravath Subdivision.
Totals =	559	33	3731	22	7934.5		

Population Projections

Year	City Population	Sanitary Sewer Service Population
2000	883	
2010	1,300	
2015	1,539	310
2020	1,821	1,001
2025	2,156	1,435
2030	2,552	2,092
2035	3,021	2,561

Population



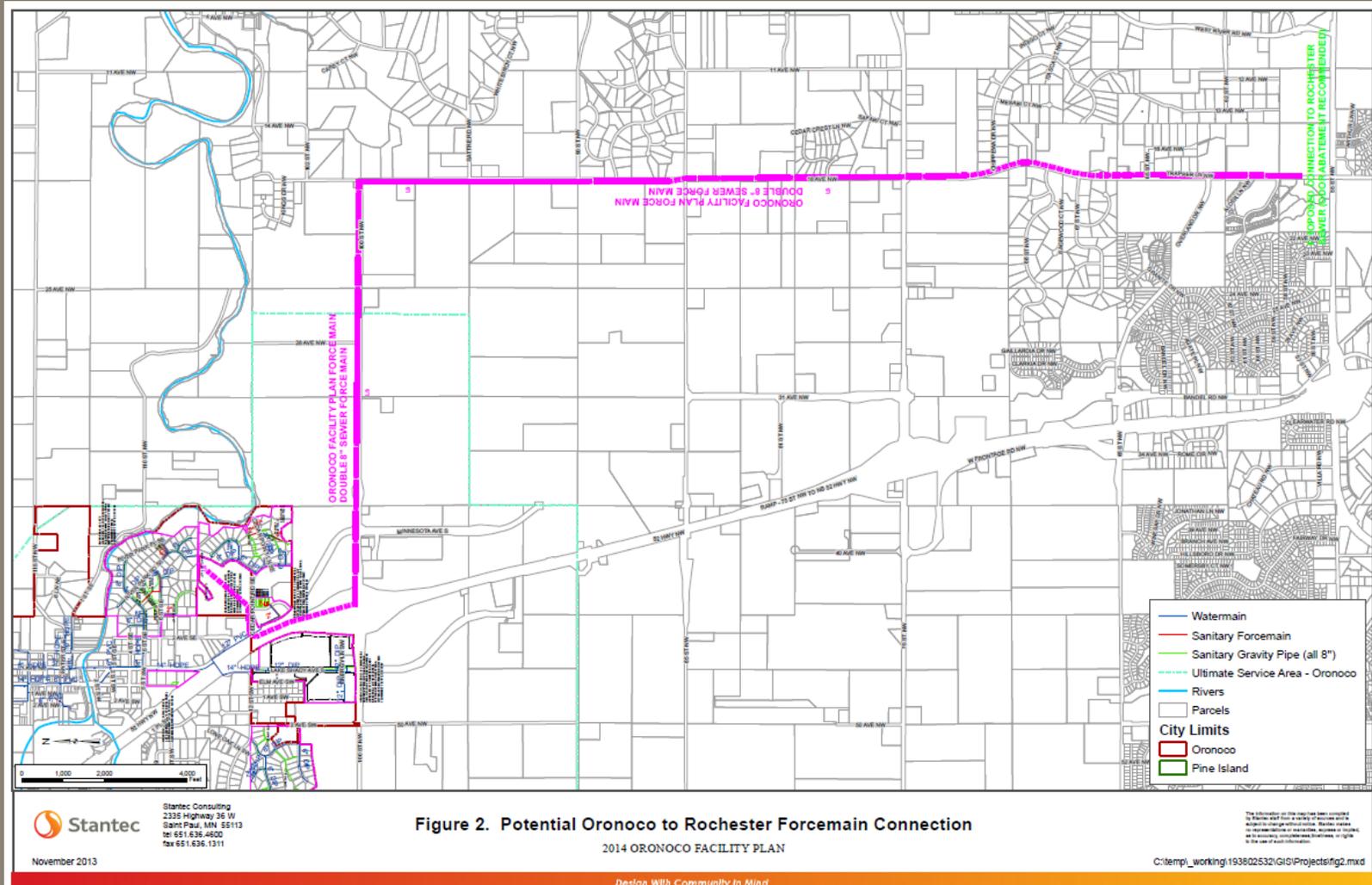
Wastewater Flow Projections

Parameter	Projections				
	2015	2020	2025	2030	2035
Service Population	310	1,001	1,435	2,092	2,561
Design Influent CBOD, lb/d	62	200	387	398	492
Average Influent Flow, MGD	0.040	0.114	0.166	0.246	0.302
Maximum Month Influent Flow, MGD (Average Wet Weather flow)	0.048	0.137	0.200	0.295	0.362
Peak Hour Influent Flow, MGD	0.192	0.548	0.800	1.180	1.448

Wastewater Treatment Options

- Convey to Rochester
- Convey to Pine Island
- Oronoco WWTF

Rochester Option



Rochester Option

- Convey wastewater to Rochester
- 4 Lift Stations
- About 7 miles of dual forcemains

Cost Analysis

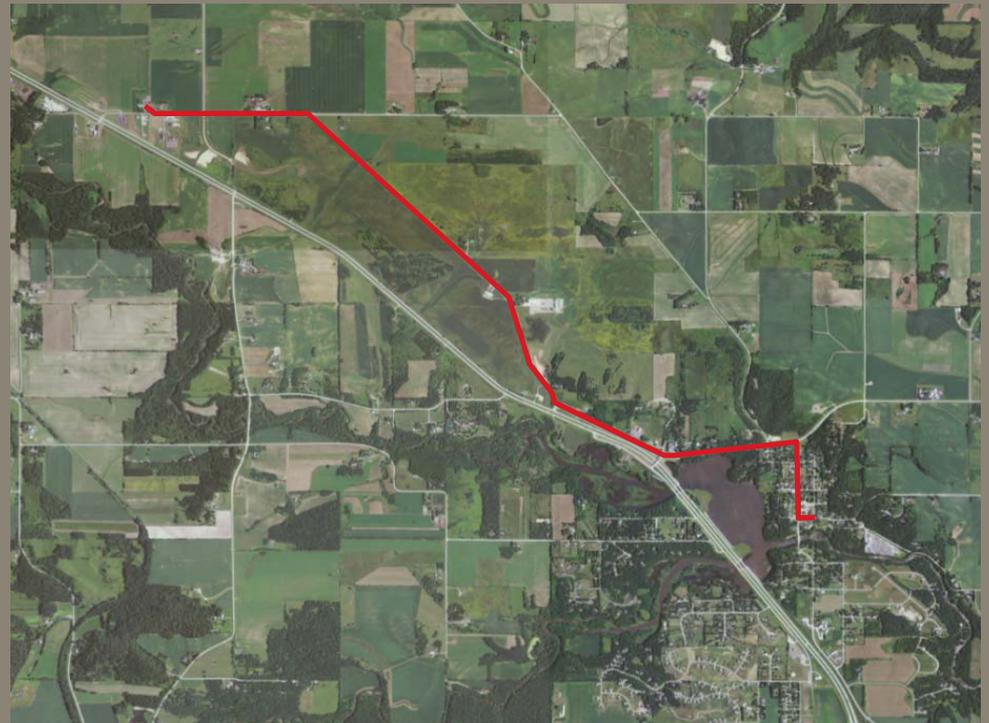
Year	Rochester Alternative		
	Connection Charge	Usage Charge	LS & FM to Rochester
2015	\$365,690	\$110,442	\$6,585,000
2016	\$478,440	\$272,601	
2017	\$62,812	\$303,917	
2018	\$64,839	\$337,763	
2019	\$66,875	\$374,327	
2020	\$69,129	\$413,939	
2021	\$185,690	\$501,879	
2022	\$73,691	\$549,908	
2023	\$75,999	\$601,793	
2024	\$78,324	\$657,824	
2025	\$80,668	\$718,313	
2026	\$376,078	\$923,662	
2027	\$85,410	\$999,082	
2028	\$87,809	\$1,080,215	
2029	\$90,226	\$1,167,479	
2030	\$92,662	\$1,261,322	
2031	\$95,116	\$1,362,227	
2032	\$97,590	\$1,470,708	
2033	\$100,082	\$1,587,320	
2034	\$102,594	\$1,712,656	
2035	\$105,125	\$1,847,352	
Present Value	\$2,835,000	\$18,255,000	\$6,585,000
	\$27,675,000		

Rochester Option

- Cost estimate based on:
 - Current Rochester Rates (7% inflation)
 - Sewer Rates: \$3.1023/100 CF = \$4.15/1000 gal
 - Fixed charge: \$13.37/month
 - \$3,000 connection fee (\$100/year increase)
 - Non-residential factor 1.5
- Sewer lining, upsizing pipes not included

Pine Island Option

- Conveyance to Pine Island
- Requires pumping over 4.5 miles
- Dual Forcemains
- Pine Island WWTF expansion (2018)



Cost Analysis

Year	Pine Island Alternative			
	Connection Charge	Usage Charge	Oronoco Share of Pine Island WWTF Expansion	LS & FM to Pine Island
2015	\$109,707	\$73,635		\$4,500,000
2016	\$141,680	\$161,023		
2017	\$18,380	\$171,597		
2018	\$18,766	\$182,302	\$4,330,000	
2019	\$19,161	\$193,141		
2020	\$19,626	\$204,182		
2021	\$52,279	\$236,603		
2022	\$20,590	\$247,856		
2023	\$21,090	\$259,328		
2024	\$21,601	\$271,026		
2025	\$22,125	\$282,955		
2026	\$102,645	\$347,756		
2027	\$23,212	\$359,655		
2028	\$23,775	\$371,809		
2029	\$24,351	\$384,224		
2030	\$24,942	\$396,907		
2031	\$25,547	\$409,866		
2032	\$26,167	\$423,107		
2033	\$26,802	\$436,636		
2034	\$27,452	\$450,463		
2035	\$28,118	\$464,593		
Present Value	\$800,000	\$6,330,000	\$4,330,000	\$4,500,000
	\$15,960,000			

Pine Island Option

- Cost estimate based on:
 - Current Pine Island charges (2% inflation)
 - \$3.19 per 1,000 gallons
 - \$18.50 monthly fixed charge
 - \$900 connection charge
 - Oronoco purchases 30% of capacity of new Pine Island WWTF constructed in 2018

Oronoco Option

- Construction of Oronoco WWTF
- Pumping about 1 mile
- Dual Forcemains
- Flexibility in expansion



Cost Analysis

Year	Oronoco WWTF Alternative		
	Annual O&M Costs	Oronoco WWTF	LS & FM to Oronoco WWTF
2015	\$112,447	\$6,200,000	\$1,250,000
2016	\$132,538		
2017	\$134,045		
2018	\$135,595		
2019	\$137,190		
2020	\$138,841		
2021	\$145,436		
2022	\$147,153		
2023	\$148,929		
2024	\$150,765	\$3,160,000	
2025	\$246,136		
2026	\$179,772		
2027	\$181,553		
2028	\$183,403		
2029	\$185,322		
2030	\$187,313		
2031	\$189,376		
2032	\$191,513		
2033	\$193,726		
2034	\$196,017		
2035	\$198,386		
Present Value	\$3,520,000	\$9,360,000	\$1,250,000
		\$14,130,000	

Oronoco WWTF Option

- Cost estimate includes:
 - O&M, labor, chemicals, utilities, biosolids disposal, supplies, testing
 - 2% Inflation
- Initial WWTF capacity of 0.20 MGD
- Expansion in 2024/2025 to 0.40 MGD

Treatment Analysis Summary

Treatment Option	2015 Present Value
Rochester	\$27,675,000
Pine Island	\$15,960,000
Oronoco	\$14,130,000

Other Factors

- Pine Island Option:
 - Agreement, Sanitary District needed
 - Control of development in Oronoco
- Oronoco Option:
 - Phosphorus discharge allowed is 0 lbs/year
 - Purchase credits or implement remediation
 - Stream bank restoration (Lake Shady)

Collection System

- Mainly conventional gravity sewers with lift stations
- Pressure systems proposed in locations where suitable
- Planned expansion of system

Collection System Summary

Collection System	Estimated Cost
Phase I	\$6,270,000
Phase II	\$2,690,000
Total	\$8,960,000

Estimated Capital Costs

Phase	Collection System	Treatment System	Total Estimated Cost
Phase I	\$6,270,000	\$6,200,000	\$12,470,000
Phase II	\$2,690,000	\$3,160,000	\$5,850,000
		Total Project	\$18,320,000

Estimated O&M Costs

Phase	Collection	Treatment	Total
Phase I	\$54,500	\$126,500	\$181,000
Phase II	\$26,000	\$62,000	\$88,000
	Total Estimated O&M		\$269,000

Residential Sewer Rates – Phase I

Funding Scenarios	Total Phase I Project Costs	Assumed Grant and/or Bonding Bill Funding	Loan Amount	Connection Charge	Usage Charge per ERU Based on 6,000 gal/mo	Monthly Fixed Fee Per Connection	Total Est. Monthly Sewer Charge per ERU ⁴
1	\$12,470,000	\$0	\$12,470,000	\$13,000	\$30	\$25	\$55
2	\$12,470,000	\$3,120,000	\$9,350,000	\$9,000	\$27	\$25	\$52
3	\$12,470,000	\$6,235,000	\$6,235,000	\$6,500	\$21	\$20	\$41
4	\$12,470,000	\$9,350,000	\$3,120,000	\$4,000	\$15	\$18	\$33

Recommendations

- Oronoco construct WWTF & Collection System
- Submit Facility Plan to MPCA
- Pursue Funding – Grants, Bonding Bill

Next Steps

- Application for placement on PFA's Project Priority List submitted March 7
- Conduct Public Hearing on April 9
- Submit Facilities Plan to MPCA April 15
- Pursue Funding
- Projected Construction Start - Spring 2016

Questions?