

LOADING AND SUBDISTRICTS MAPS

1

Existing Stats: 895 Gross Acres, 560 Developed Acres (62.51% Developed), ADF per Flow Meter: 0.34 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.34 MGD Est Ult ADF (Sewer Comp Plan)

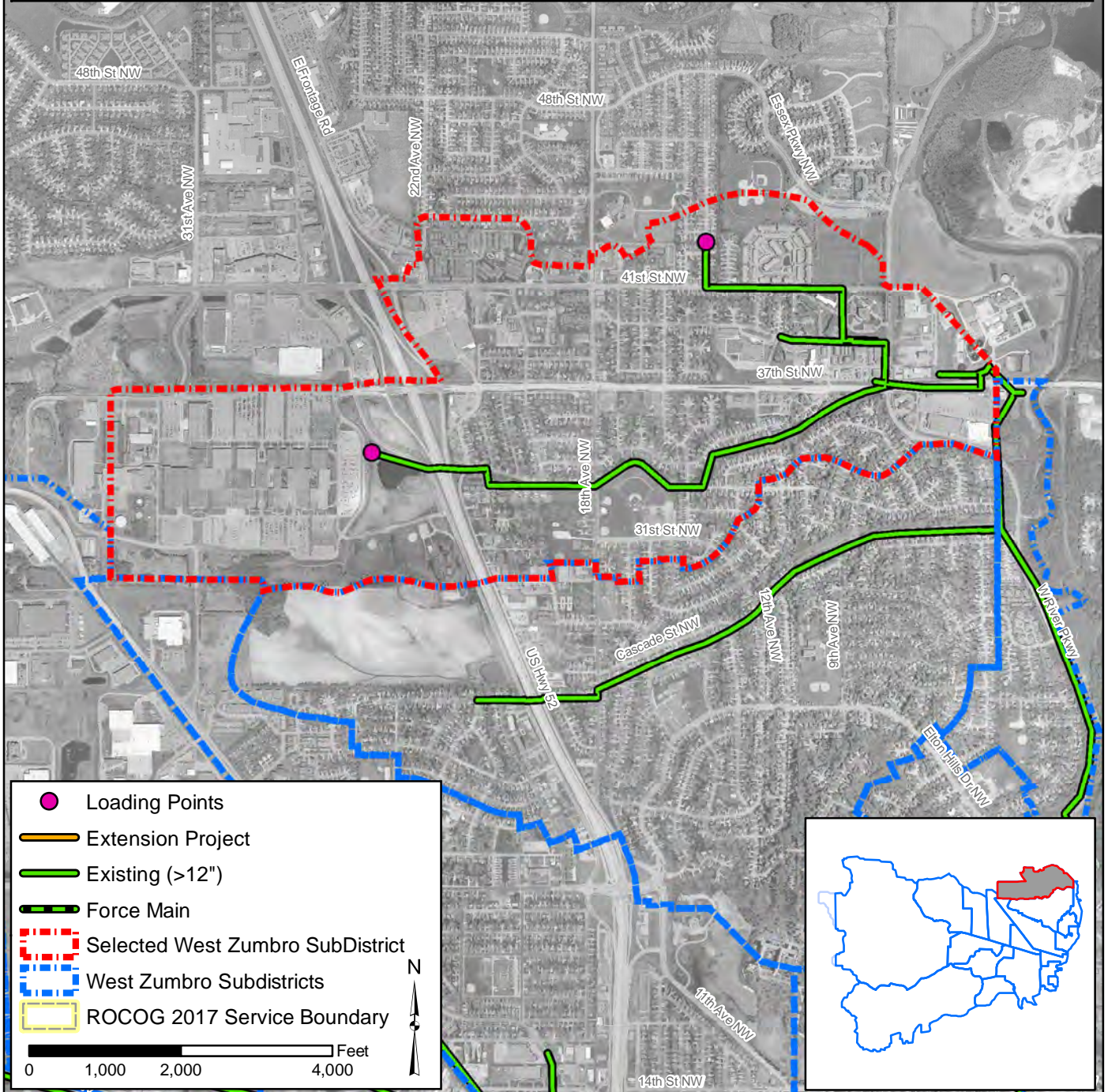
2018 Zoning on Developable Parcels: 0.17 MGD + Existing ADF = 0.51 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.23 MGD + Existing ADF = 0.57 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.35 MGD + Existing ADF = 0.69 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 1: Existing ADF: 0.34 MGD, Growth: 0.35 MGD, Ultimate Future ADF: 0.69 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 1
Recommended Ultimate Future ADF



2

Existing Stats: 828 Gross Acres, 525 Developed Acres (63.48% Developed), ADF per Flow Meter: 0.06 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.06 MGD Est Ult ADF (Sewer Comp Plan)

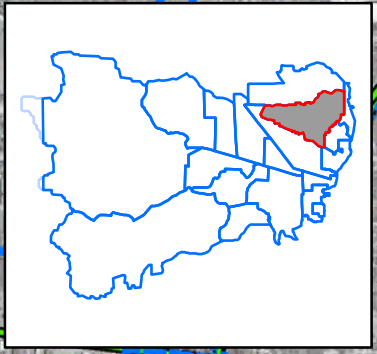
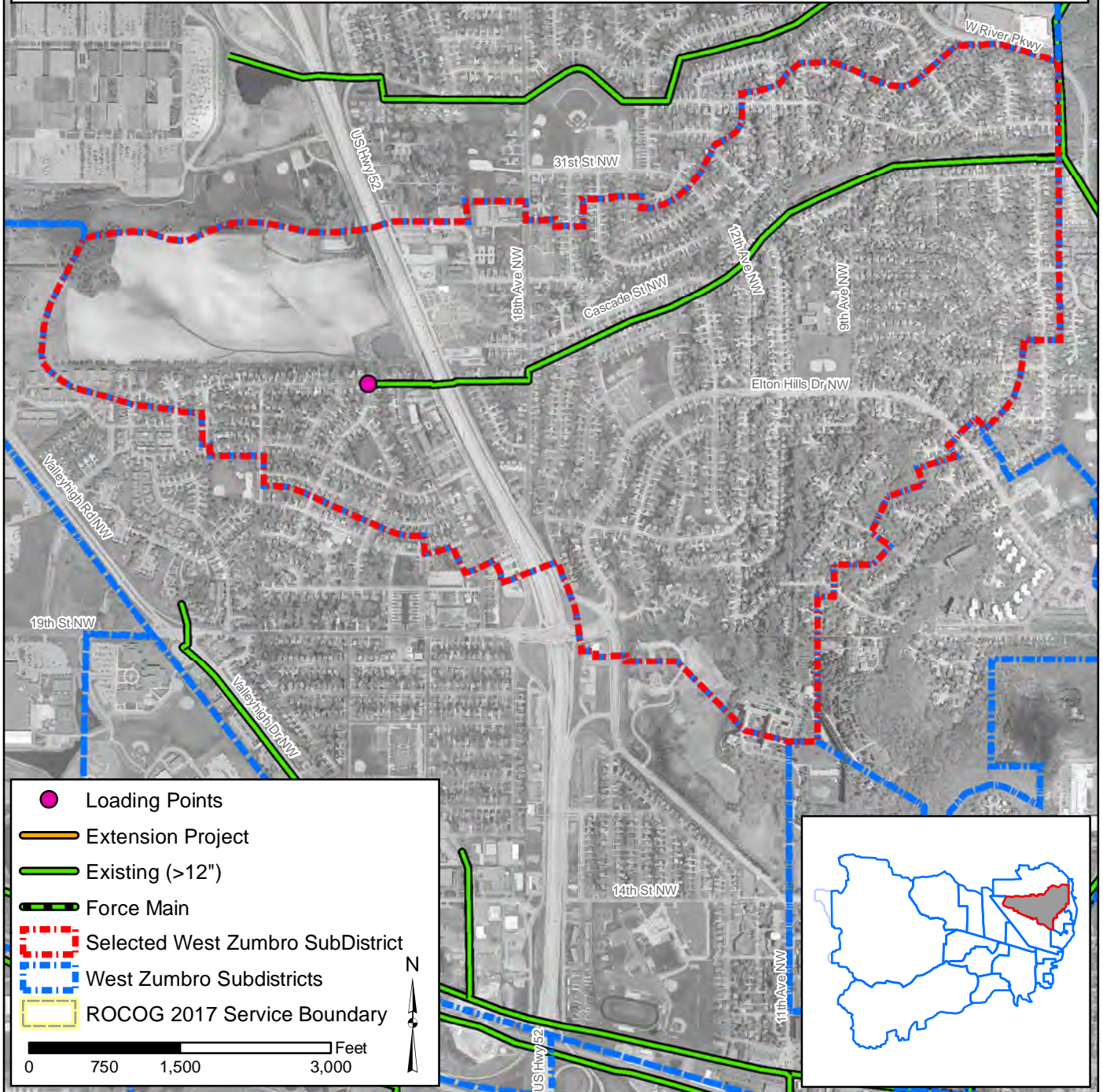
2018 Zoning on Developable Parcels: 0.141 MGD + Existing ADF = 0.201 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.082 MGD + Existing ADF = 0.142 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.136 MGD + Existing ADF = 0.196 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.


Conclusion for 2: Existing ADF: 0.06 MGD, Growth: 0.141 MGD, Ultimate Future ADF: 0.201 MGD



- Loading Points
- Extension Project
- Existing (>12")
- Force Main
- Selected West Zumbro SubDistrict
- West Zumbro Subdistricts
- ROCOG 2017 Service Boundary

N

0 750 1,500 3,000 Feet



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 2
Recommended Ultimate Future ADF



engineers + planners + land surveyors

3

Existing Stats: 688 Gross Acres, 400 Developed Acres (58.17% Developed), ADF per Flow Meter: 0.377 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.377 MGD Est Ult ADF (Sewer Comp Plan)

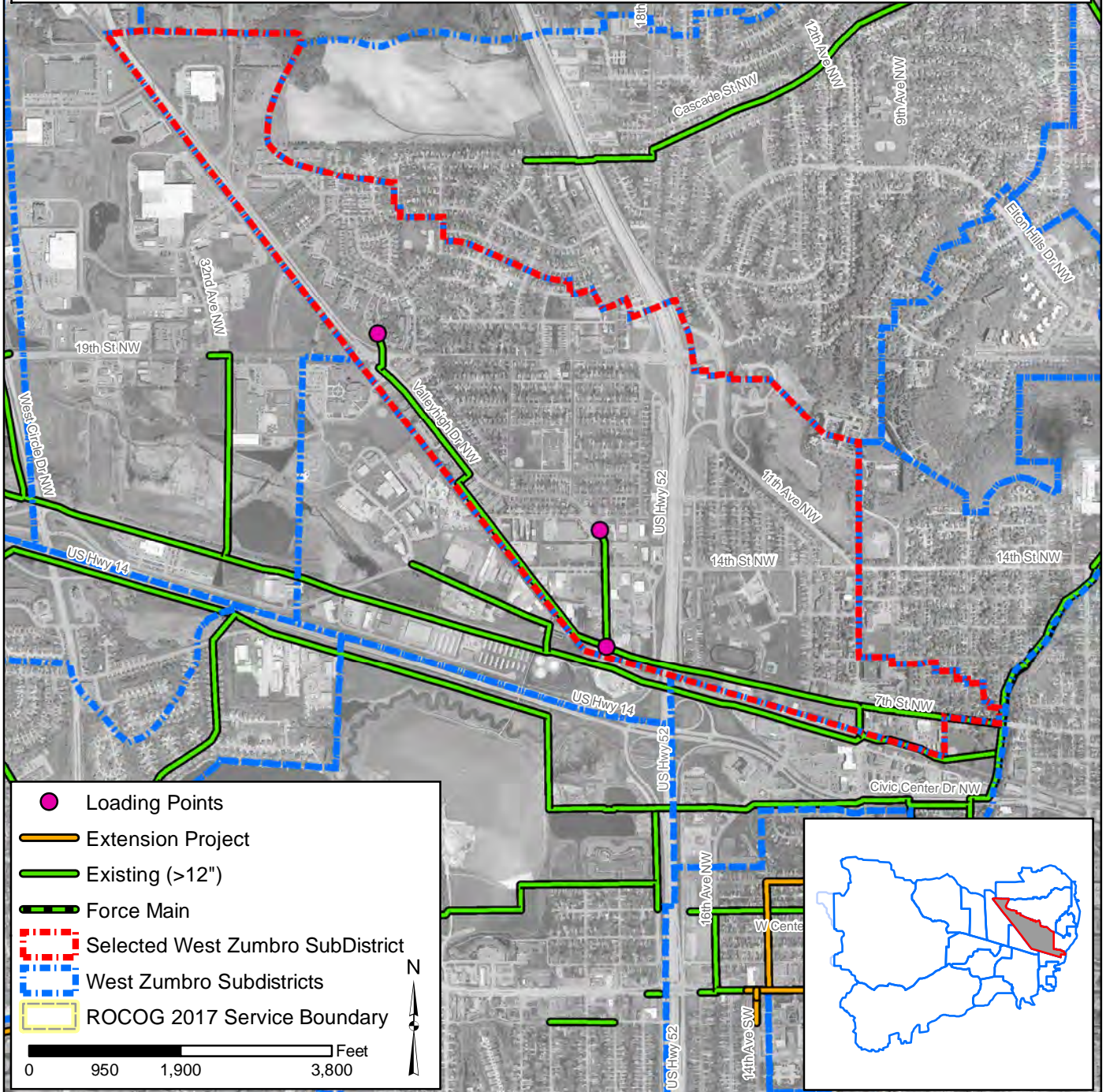
2018 Zoning on Developable Parcels: 0.031 MGD + Existing ADF = 0.408 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.059 MGD + Existing ADF = 0.437 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.085 MGD + Existing ADF = 0.463 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 3: Existing ADF: 0.377 MGD, Growth: 0.085 MGD, Ultimate Future ADF: 0.463 MGD



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Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 3
Recommended Ultimate Future ADF



Existing Stats: 204 Gross Acres, 115 Developed Acres (56.35% Developed), ADF per Flow Meter: 0.1 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.1 MGD Est Ult ADF (Sewer Comp Plan)

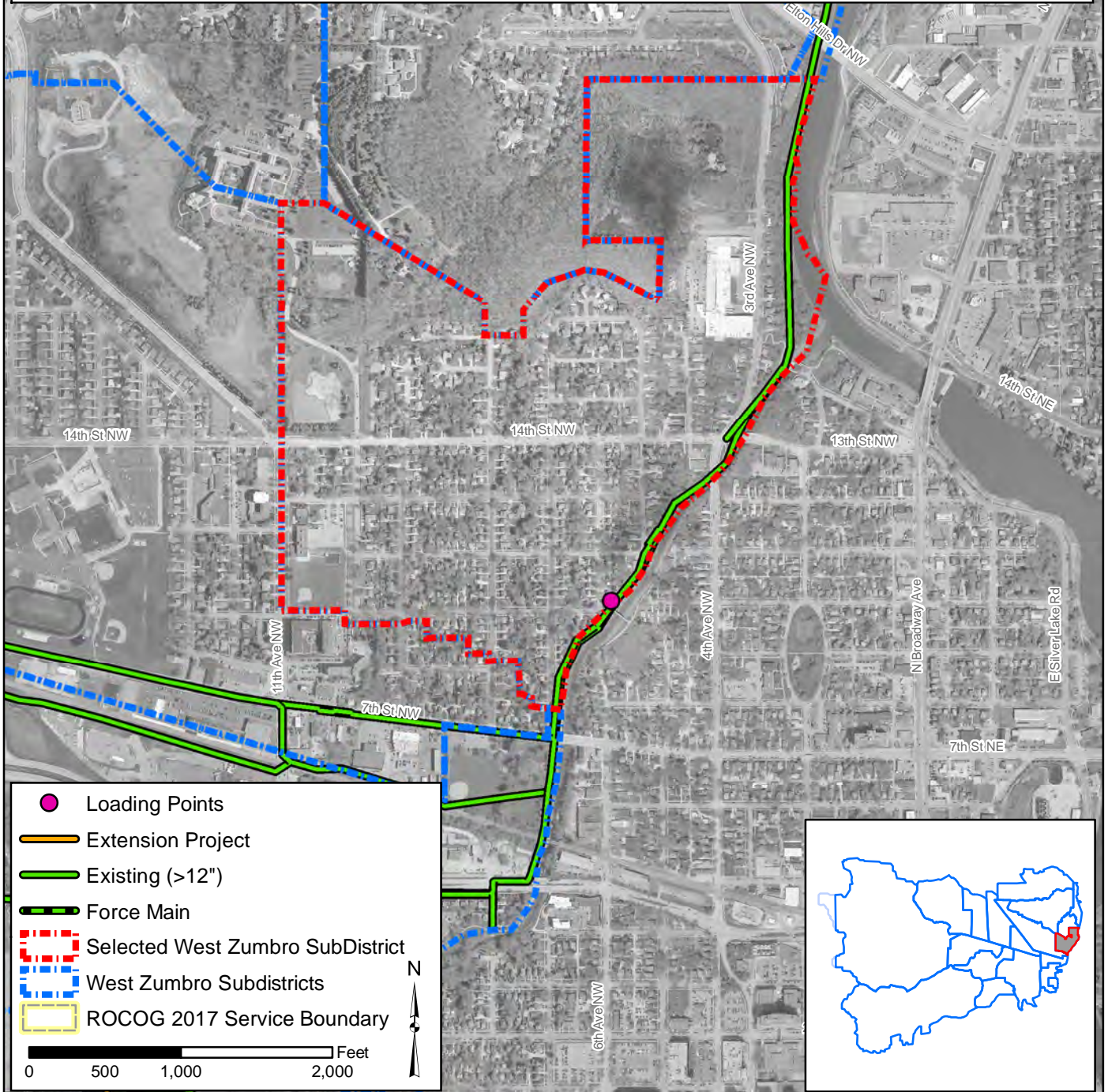
2018 Zoning on Developable Parcels: 0.02 MGD + Existing ADF = 0.12 MGD Est Ult Flow

2016-2040 TAZ Delta: 0 MGD + Existing ADF = 0.1 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.01 MGD + Existing ADF = 0.1 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 4: Existing ADF: 0.1 MGD, Growth: 0.02 MGD, Ultimate Future ADF: 0.12 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 4
Recommended Ultimate Future ADF



5A

Existing Stats: 136 Gross Acres, 49 Developed Acres (36.21% Developed), ADF per Flow Meter: 0.02 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0.02 MGD + Existing ADF = 0.04 MGD Est Ult ADF (Sewer Comp Plan)

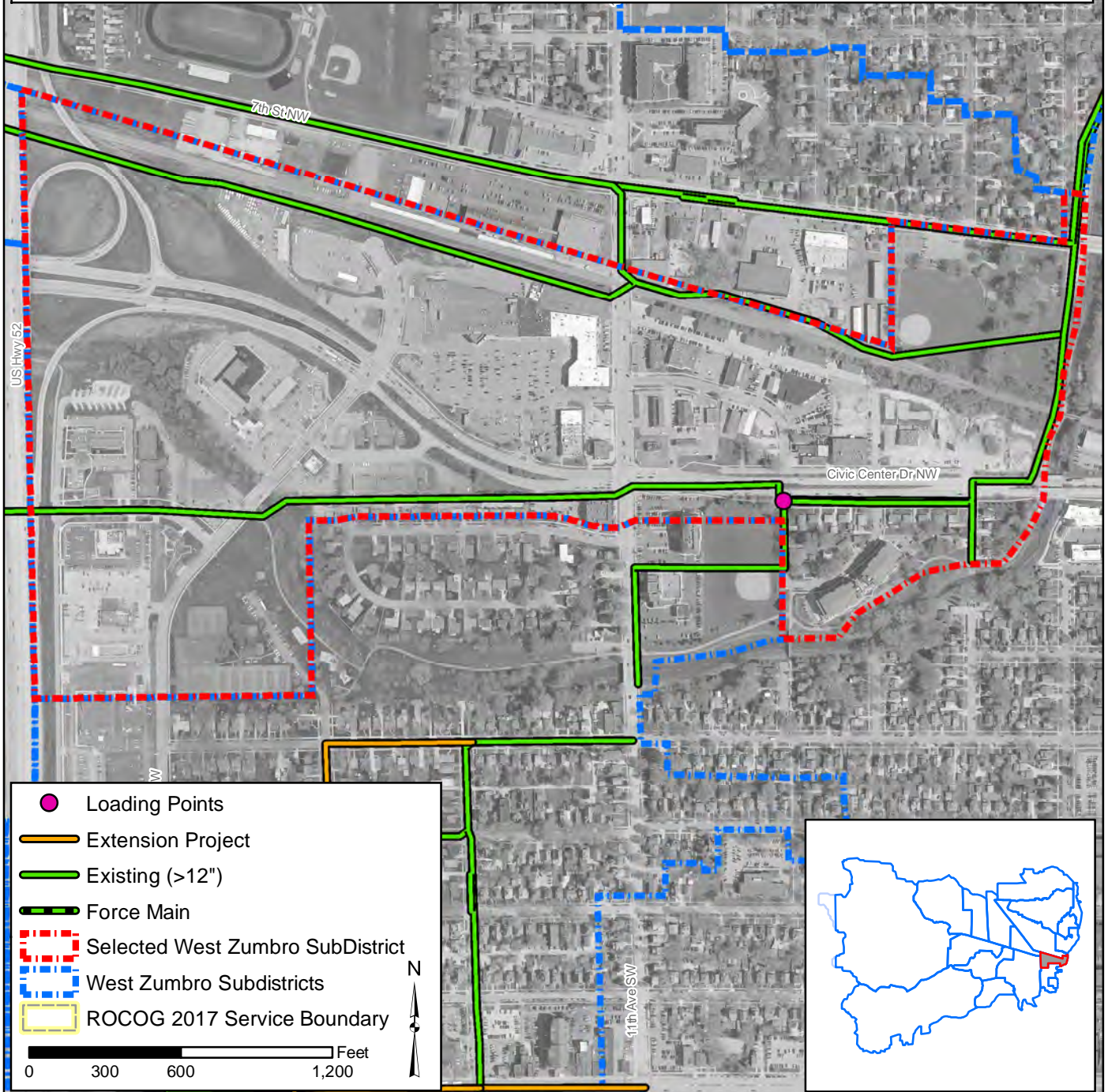
2018 Zoning on Developable Parcels: 0.02 MGD + Existing ADF = 0.04 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.02 MGD + Existing ADF = 0.04 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.03 MGD + Existing ADF = 0.05 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 5A: Existing ADF: 0.02 MGD, Growth: 0.03 MGD, Ultimate Future ADF: 0.05 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 5A
Recommended Ultimate Future ADF



5B

Existing Stats: 45 Gross Acres, 43 Developed Acres (97.01% Developed), ADF per Flow Meter: 0.23 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.23 MGD Est Ult ADF (Sewer Comp Plan)

2018 Zoning on Developable Parcels: 0 MGD + Existing ADF = 0.23 MGD Est Ult Flow

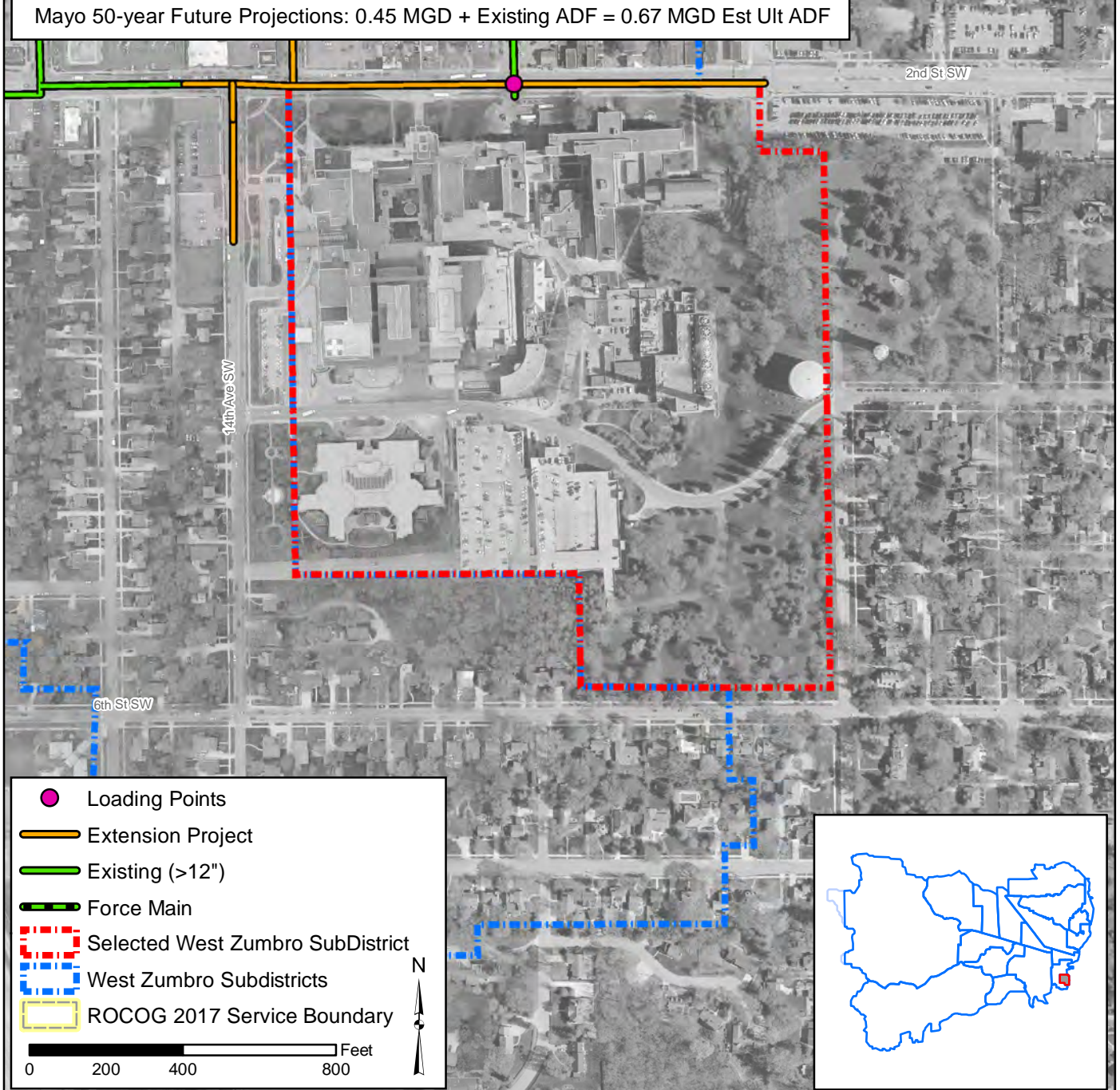
2016-2040 TAZ Delta: 0.09 MGD + Existing ADF = 0.32 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.05 MGD + Existing ADF = 0.28 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 5B: Existing ADF: 0.23 MGD, Growth: 0.45 MGD, Ultimate Future ADF: 0.67 MGD

Mayo 50-year Future Projections: 0.45 MGD + Existing ADF = 0.67 MGD Est Ult ADF



5C-MOD

Existing Stats: 193 Gross Acres, 113 Developed Acres (58.81% Developed), ADF per Flow Meter: 0.52 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.52 MGD Est Ult ADF (Sewer Comp Plan)

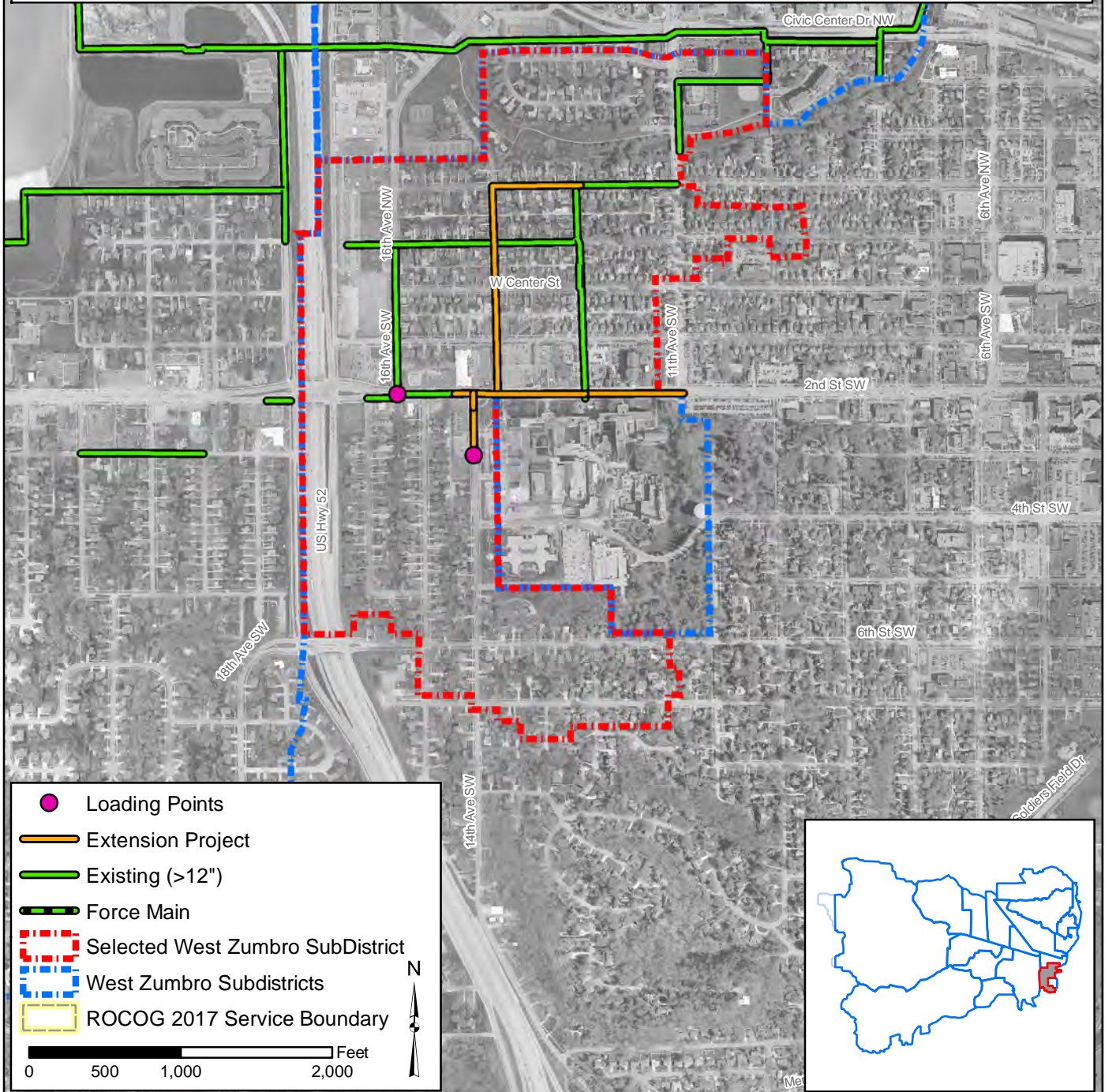
2018 Zoning on Developable Parcels: 0.01 MGD + Existing ADF = 0.53 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.04 MGD + Existing ADF = 0.56 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.09 MGD + Existing ADF = 0.61 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 5C-MOD: Existing ADF: 0.52 MGD, Growth: 0.09 MGD, Ultimate Future ADF: 0.61 MGD



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Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 5C-MOD
Recommended Ultimate Future ADF**



6A-MOD

Existing Stats: 894 Gross Acres, 377 Developed Acres (42.13% Developed), ADF per Flow Meter: 0.19 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0.06 MGD + Existing ADF = 0.25 MGD Est Ult ADF (Sewer Comp Plan)

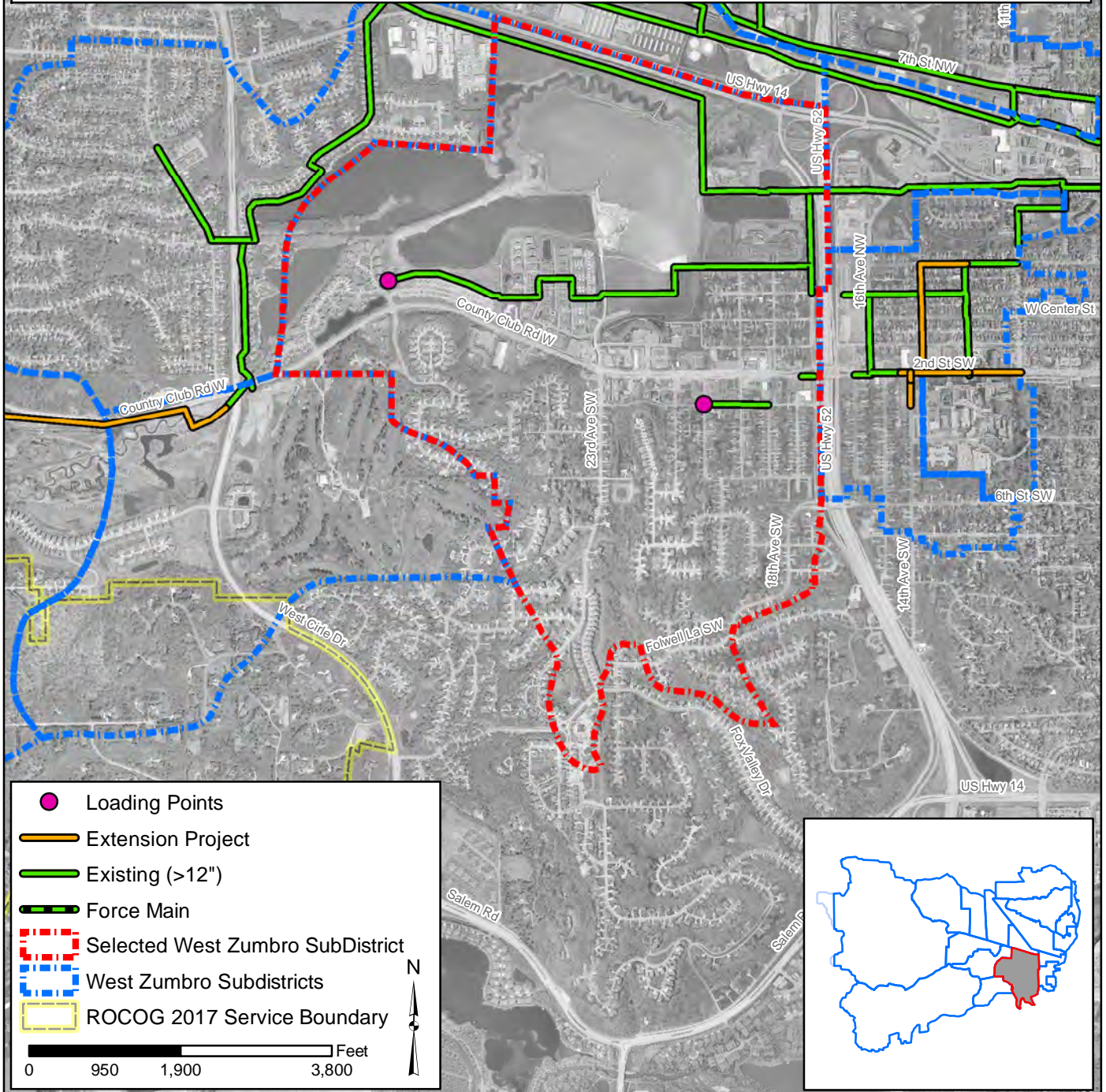
2018 Zoning on Developable Parcels: 0.05 MGD + Existing ADF = 0.25 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.15 MGD + Existing ADF = 0.34 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.15 MGD + Existing ADF = 0.35 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6A-MOD: Existing ADF: 0.19 MGD, Growth: 0.15 MGD, Ultimate Future ADF: 0.35 MGD



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Wastewater Master Plan
Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 6A-MOD
Recommended Ultimate Future ADF**



6B-MOD

Existing Stats: 509 Gross Acres, 324 Developed Acres (63.65% Developed), ADF per Flow Meter: 0.17 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.17 MGD Est Ult ADF (Sewer Comp Plan)

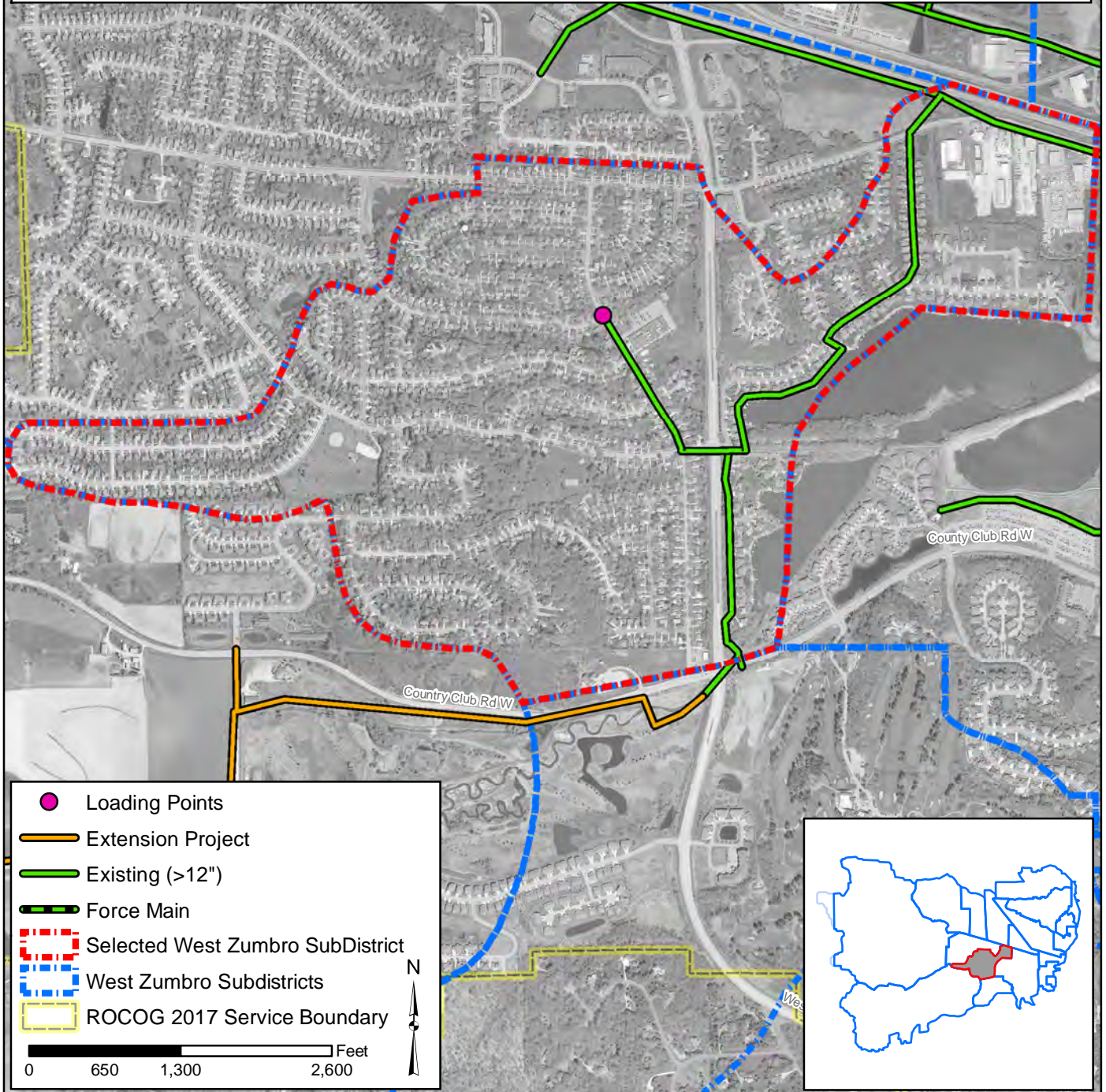
2018 Zoning on Developable Parcels: 0.01 MGD + Existing ADF = 0.18 MGD Est Ult Flow








2016-2040 TAZ Delta: 0.01 MGD + Existing ADF = 0.18 MGD Est 2040 Flow

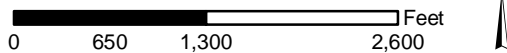
2018-2040 TAZ Delta: 0.01 MGD + Existing ADF = 0.18 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6B-MOD: Existing ADF: 0.17 MGD, Growth: 0.01 MGD, Ultimate Future ADF: 0.18 MGD



-  Loading Points
-  Extension Project
-  Existing (>12")
-  Force Main
-  Selected West Zumbro SubDistrict
-  West Zumbro Subdistricts
-  ROCOG 2017 Service Boundary



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Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 6B-MOD
Recommended Ultimate Future ADF



6C-MOD

Existing Stats: 375 Gross Acres, 33 Developed Acres (8.8% Developed), ADF per Flow Meter: 0.03 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0.17 MGD + Existing ADF = 0.19 MGD Est Ult ADF (Sewer Comp Plan)

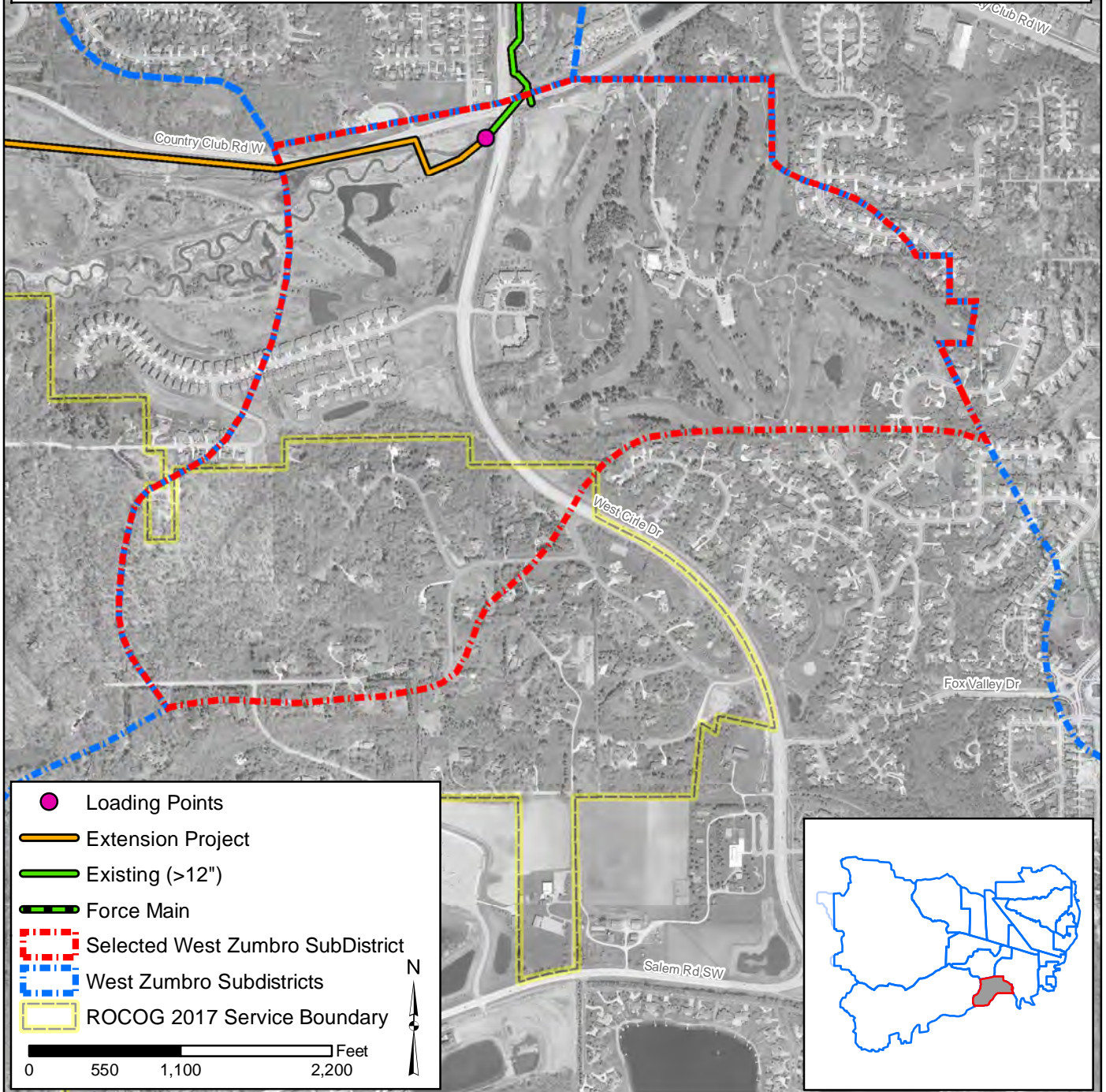
2018 Zoning on Developable Parcels: 0.19 MGD + Existing ADF = 0.22 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.02 MGD + Existing ADF = 0.04 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.05 MGD + Existing ADF = 0.07 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6C-MOD: Existing ADF: 0.03 MGD, Growth: 0.19 MGD, Ultimate Future ADF: 0.22 MGD



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Wastewater Master Plan
Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 6C-MOD
Recommended Ultimate Future ADF**



6D-MOD

Existing Stats: 3652 Gross Acres, 62 Developed Acres (1.7% Developed), ADF per Flow Meter: 0.07 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 1.91 MGD + Existing ADF = 1.98 MGD Est Ult ADF (Sewer Comp Plan)

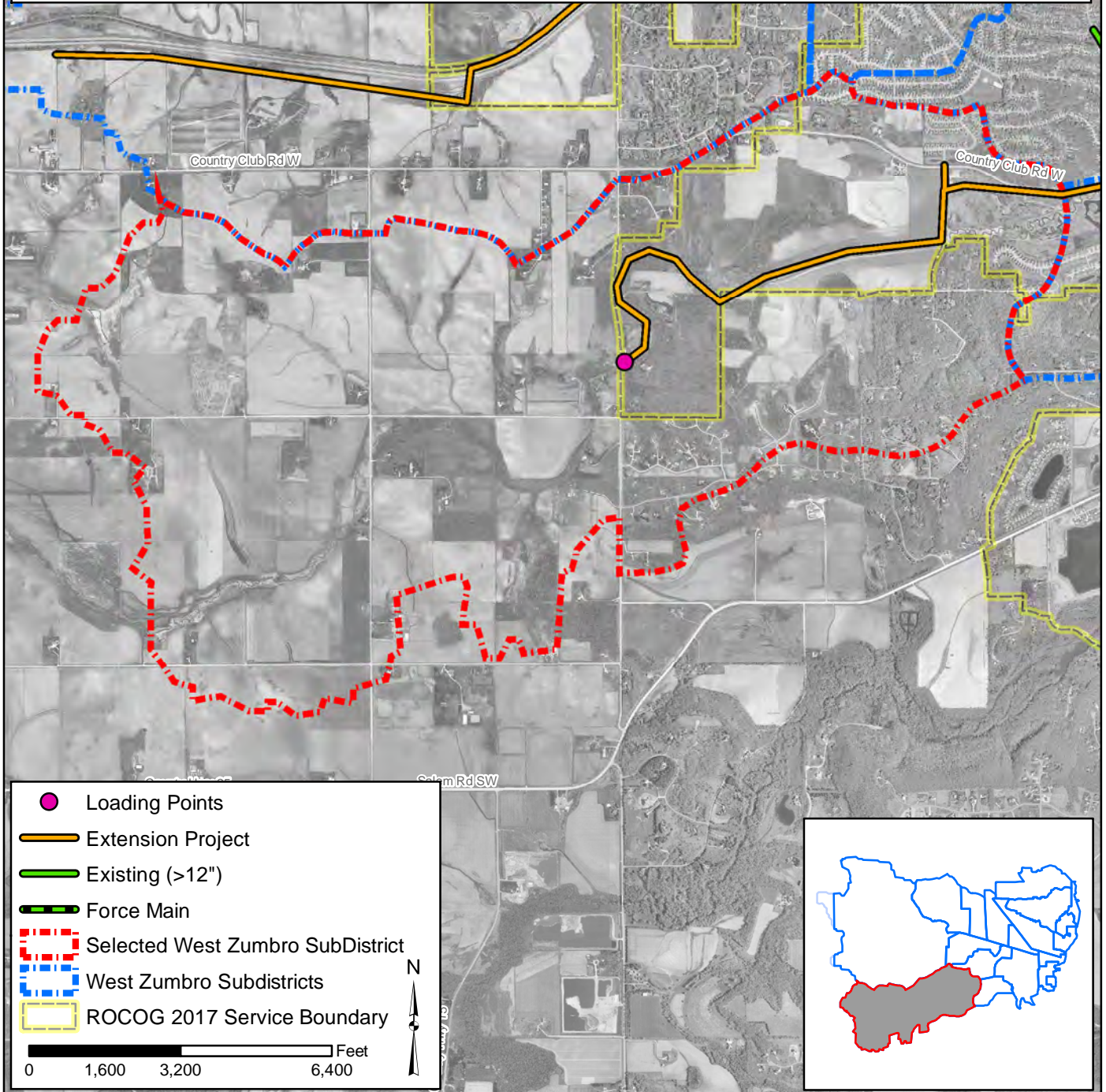
2018 Zoning on Developable Parcels: 2.01 MGD + Existing ADF = 2.08 MGD Est Ult Flow








2016-2040 TAZ Delta: 0.06 MGD + Existing ADF = 0.13 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.08 MGD + Existing ADF = 0.16 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6D-MOD: Existing ADF: 0.07 MGD, Growth: 2.01 MGD, Ultimate Future ADF: 2.08 MGD



-  Loading Points
 -  Extension Project
 -  Existing (>12")
 -  Force Main
 -  Selected West Zumbro SubDistrict
 -  West Zumbro Subdistricts
 -  ROCOG 2017 Service Boundary
- 0 1,600 3,200 6,400 Feet
- N



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 6D-MOD
Recommended Ultimate Future ADF**



6E-MOD

Existing Stats: 522 Gross Acres, 219 Developed Acres (42.07% Developed), ADF per Flow Meter: 0.2 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0.03 MGD + Existing ADF = 0.23 MGD Est Ult ADF (Sewer Comp Plan)

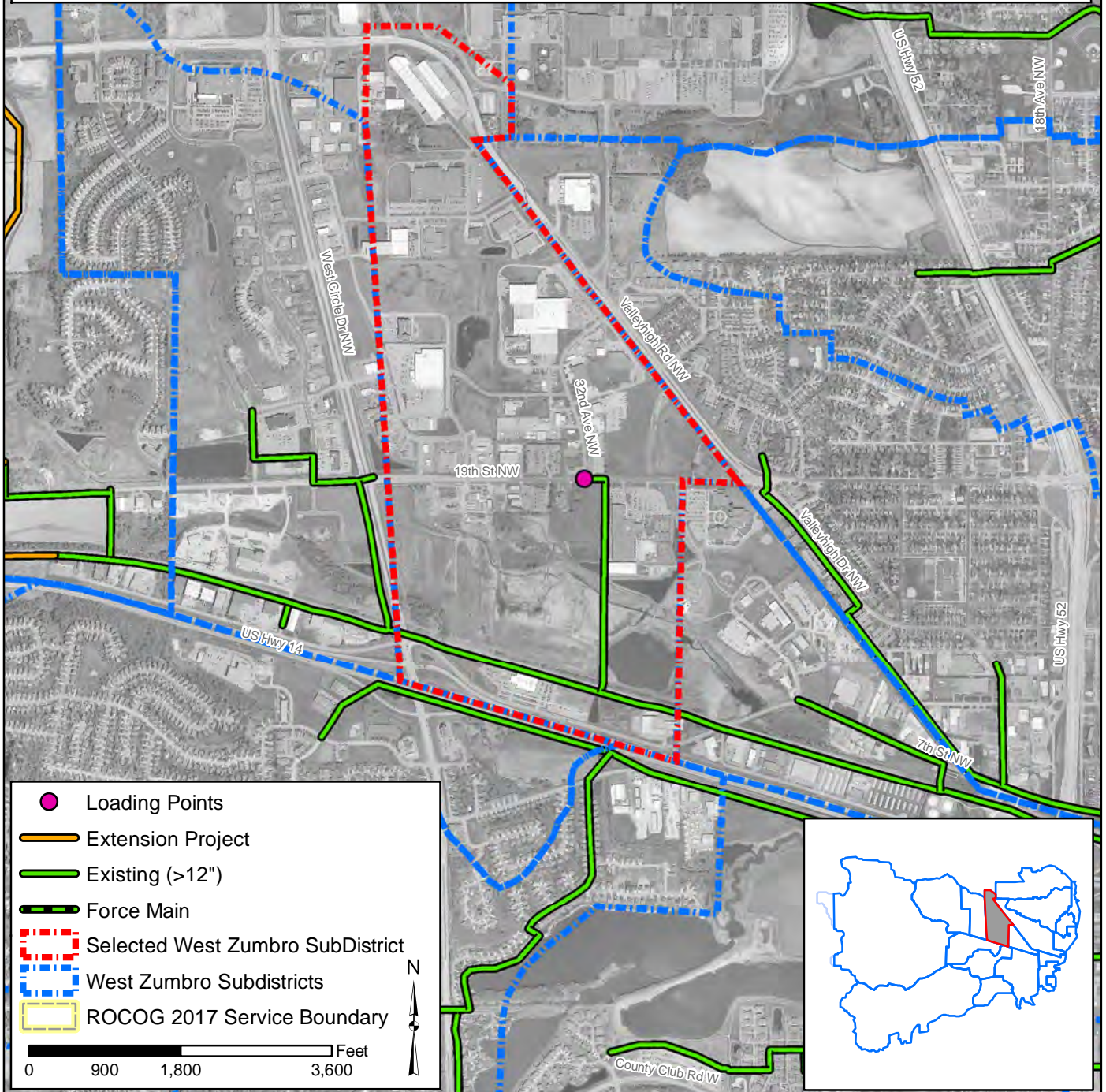
2018 Zoning on Developable Parcels: 0.14 MGD + Existing ADF = 0.33 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.07 MGD + Existing ADF = 0.26 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.14 MGD + Existing ADF = 0.33 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6E-MOD: Existing ADF: 0.2 MGD, Growth: 0.14 MGD, Ultimate Future ADF: 0.33 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 6E-MOD
Recommended Ultimate Future ADF**



6F-MOD

Existing Stats: 566 Gross Acres, 347 Developed Acres (61.35% Developed), ADF per Flow Meter: 0.16 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.16 MGD Est Ult ADF (Sewer Comp Plan)

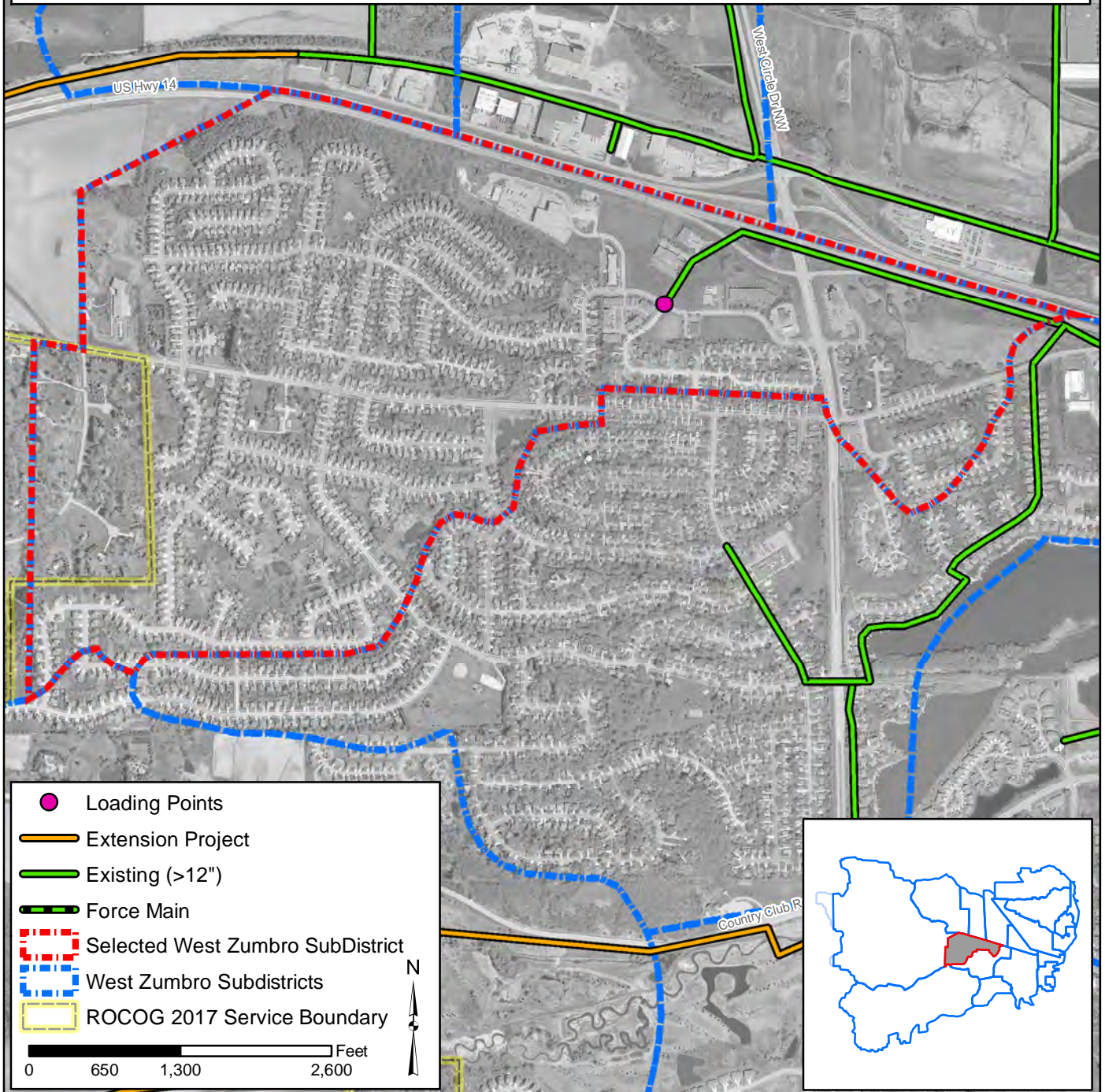
2018 Zoning on Developable Parcels: 0.08 MGD + Existing ADF = 0.24 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.02 MGD + Existing ADF = 0.18 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.01 MGD + Existing ADF = 0.17 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6F-MOD: Existing ADF: 0.16 MGD, Growth: 0.08 MGD, Ultimate Future ADF: 0.24 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 6F-MOD
Recommended Ultimate Future ADF



6G-MOD

Existing Stats: 1217 Gross Acres, 62 Developed Acres (5.13% Developed), ADF per Flow Meter: 0.05 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0.57 MGD + Existing ADF = 0.63 MGD Est Ult ADF (Sewer Comp Plan)

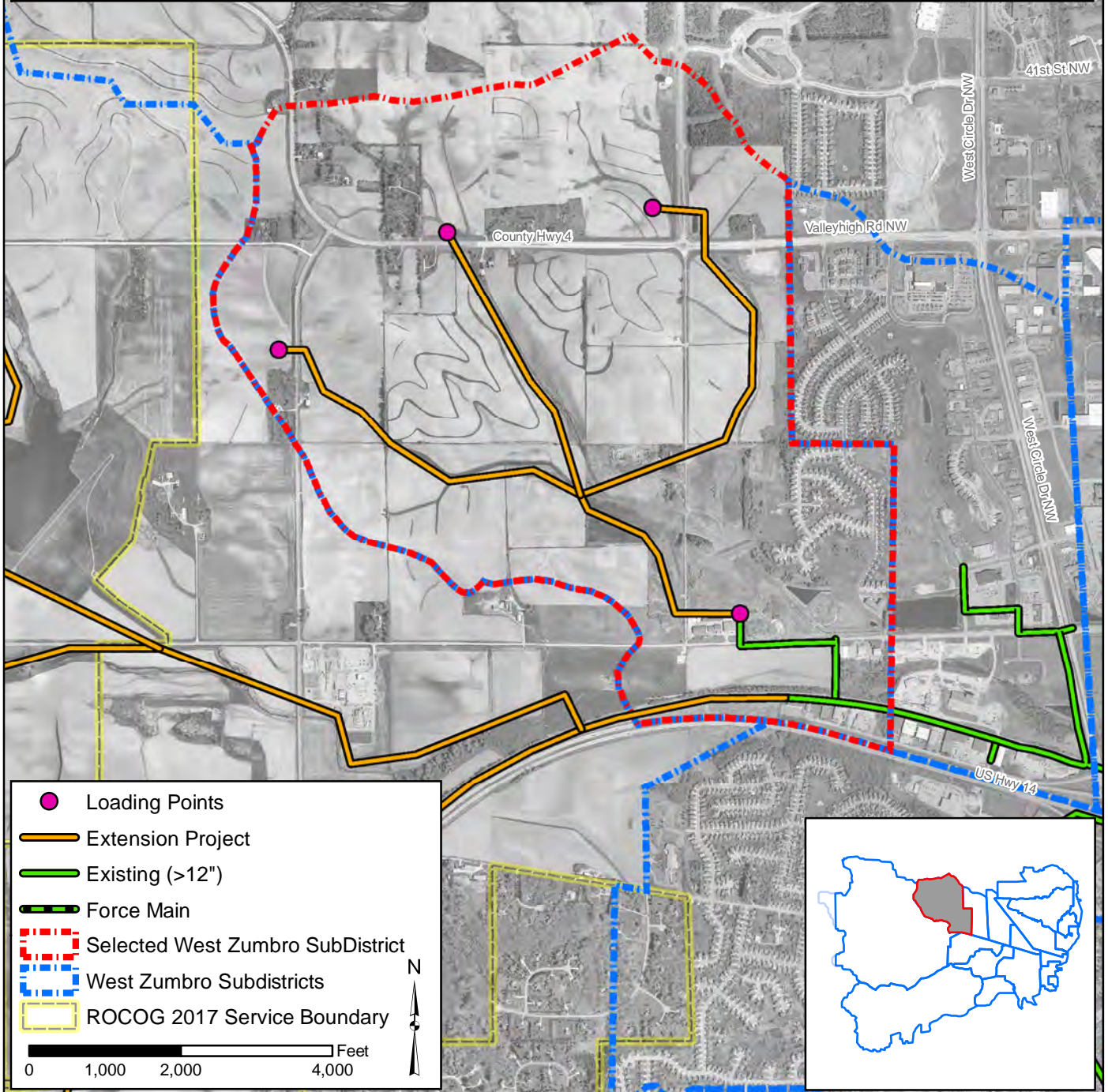
2018 Zoning on Developable Parcels: 0.58 MGD + Existing ADF = 0.64 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.11 MGD + Existing ADF = 0.16 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.23 MGD + Existing ADF = 0.29 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6G-MOD: Existing ADF: 0.05 MGD, Growth: 0.58 MGD, Ultimate Future ADF: 0.64 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 6G-MOD
Recommended Ultimate Future ADF**



6H-MOD

Existing Stats: 5831 Gross Acres, 12 Developed Acres (0.21% Developed), ADF per Flow Meter: 0 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 3.42 MGD + Existing ADF = 3.42 MGD Est Ult ADF (Sewer Comp Plan)

2018 Zoning on Developable Parcels: 3.41 MGD + Existing ADF = 3.41 MGD Est Ult Flow

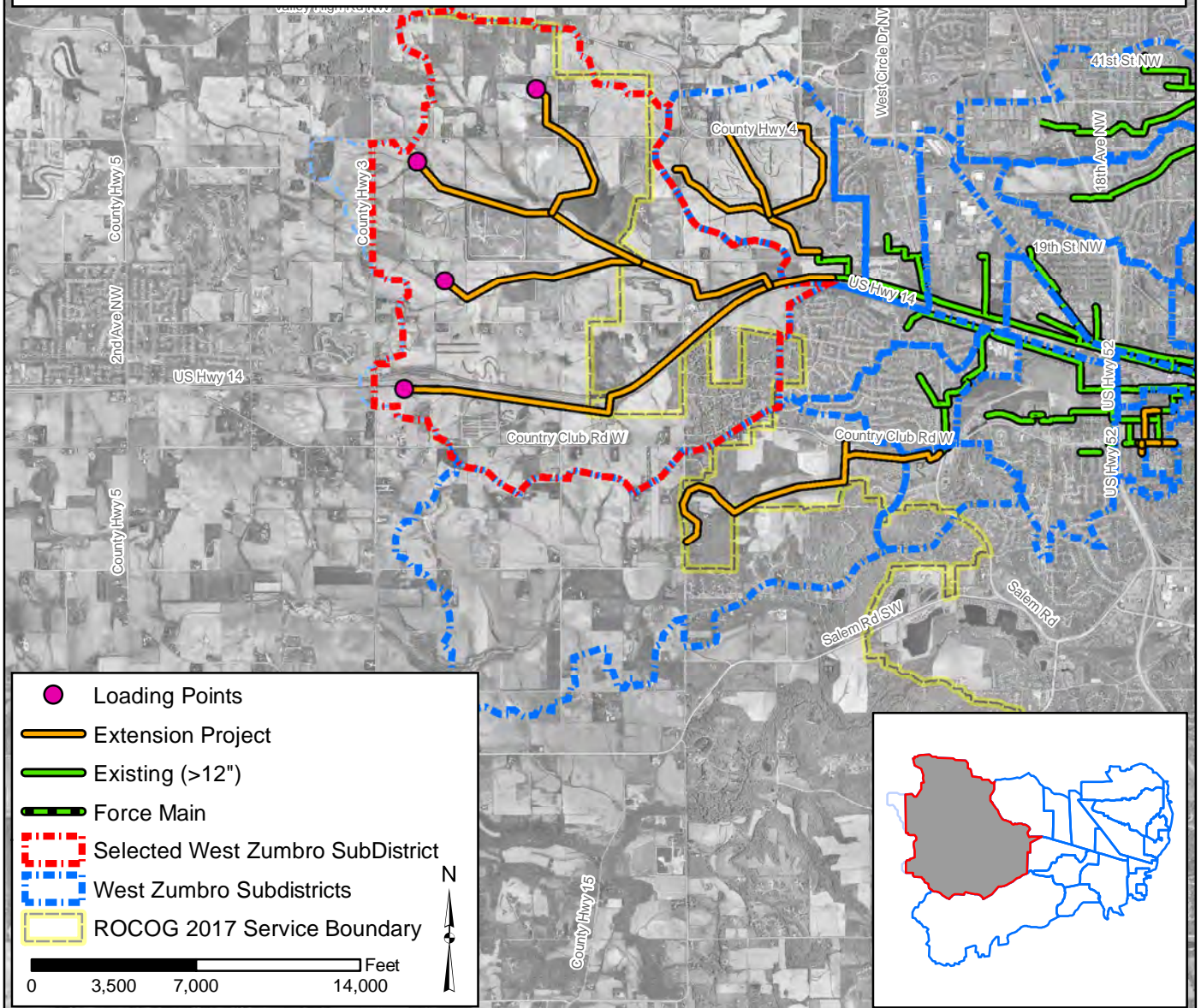
2016-2040 TAZ Delta: 0.04 MGD + Existing ADF = 0.04 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.08 MGD + Existing ADF = 0.08 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 6H-MOD: Existing ADF: 0 MGD, Growth: 3.42 MGD, Ultimate Future ADF: 3.42 MGD

The topographical area for subdistrict 6H-MOD is 6016 gross acres with an estimated ADF of 3.42 MGD. However, there is a political boundary at County Road 3 (CSAH #3). The portion of subdistrict 6H-MOD west of CSAH #3 is included in the City of Byron sanitary sewer service subordinate area. The portion of subdistrict 6H-MOD east of CSAH #3 will flow to Rochester and has a gross area of 5831 acres with an estimated ADF of 3.3 MGD. The model used the more conservative value for the whole topographical area of 3.42 MGD for the subdistrict loading. The split at CR3 does not affect sizing of the proposed extensions.



26B

Existing Stats: 168 Gross Acres, 96 Developed Acres (57.3% Developed), ADF per Flow Meter: 0.113 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.113 MGD Est Ult ADF (Sewer Comp Plan)

2018 Zoning on Developable Parcels: 0.002 MGD + Existing ADF = 0.115 MGD Est Ult Flow

2016-2040 TAZ Delta: -0.003 MGD + Existing ADF = 0.11 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0 MGD + Existing ADF = 0.113 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 26B: Existing ADF: 0.113 MGD, Growth: 0.002 MGD, Ultimate Future ADF: 0.115 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: 26B
Recommended Ultimate Future ADF



26C-MOD

Existing Stats: 136 Gross Acres, 51 Developed Acres (37.56% Developed), ADF per Flow Meter: 0.07 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.07 MGD Est Ult ADF (Sewer Comp Plan)

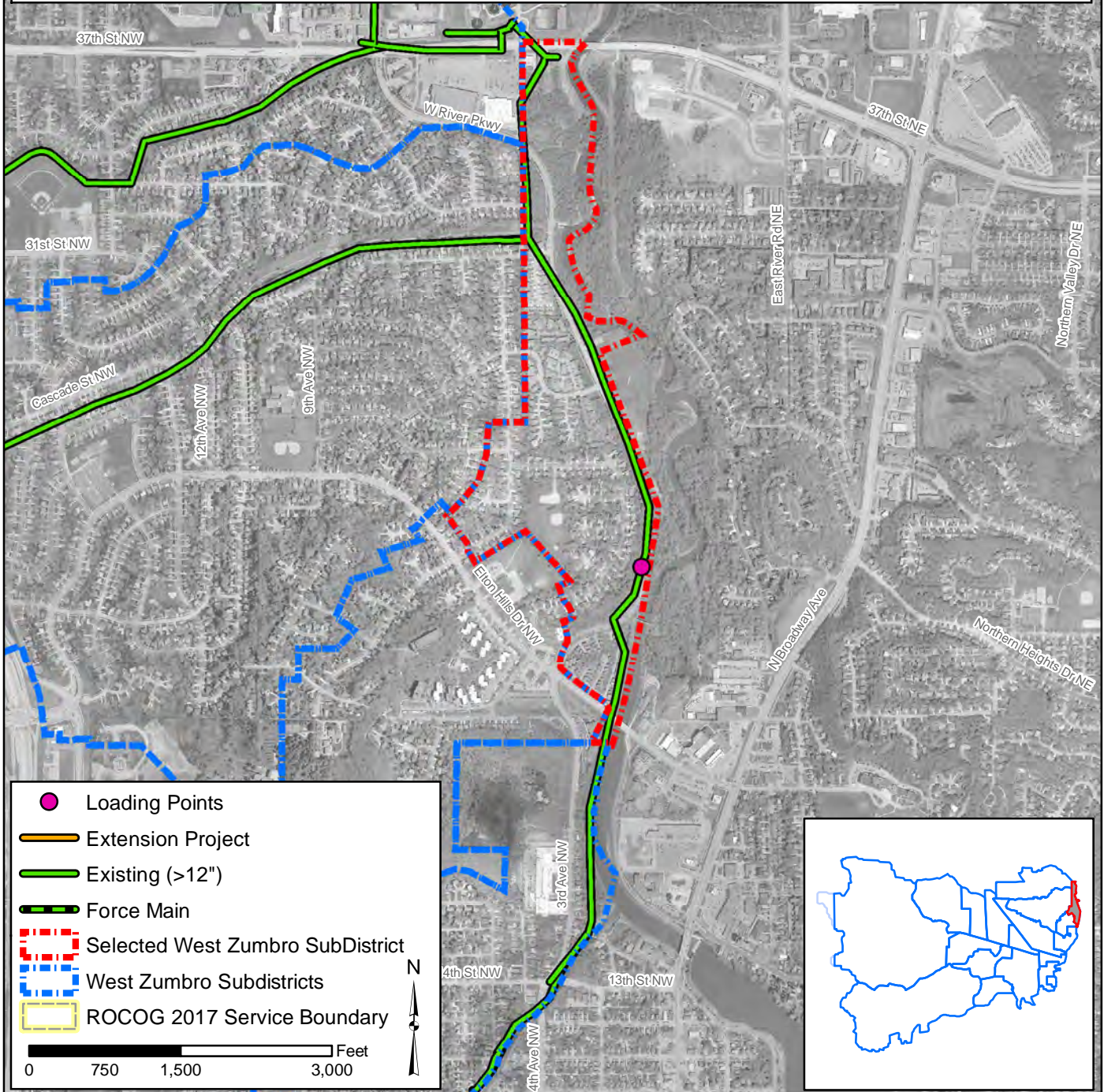
2018 Zoning on Developable Parcels: 0.02 MGD + Existing ADF = 0.09 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.01 MGD + Existing ADF = 0.08 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.01 MGD + Existing ADF = 0.08 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for 26C-MOD: Existing ADF: 0.07 MGD, Growth: 0.02 MGD, Ultimate Future ADF: 0.09 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**XII.B.5
West Zumbro
Subdistrict: 26C-MOD
Recommended Ultimate Future ADF**



UNNAMED-6-1

Existing Stats: 477 Gross Acres, 197 Developed Acres (41.34% Developed), ADF per Flow Meter: 0.2 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.2 MGD Est Ult ADF (Sewer Comp Plan)

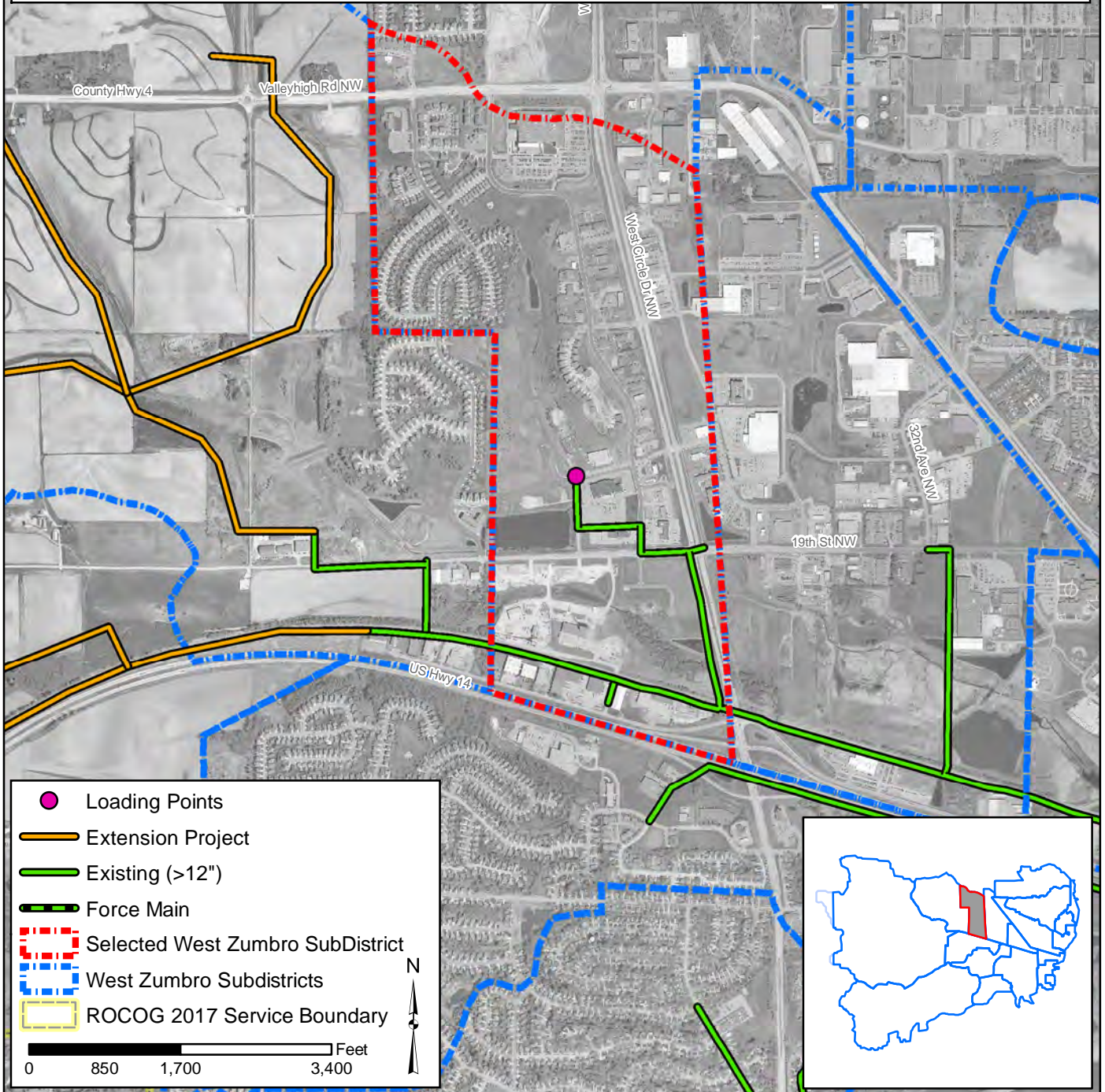
2018 Zoning on Developable Parcels: 0.04 MGD + Existing ADF = 0.24 MGD Est Ult Flow

2016-2040 TAZ Delta: 0.12 MGD + Existing ADF = 0.32 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.1 MGD + Existing ADF = 0.3 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for UNNAMED-6-1: Existing ADF: 0.2 MGD, Growth: 0.12 MGD, Ultimate Future ADF: 0.32 MGD



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

XII.B.5
West Zumbro
Subdistrict: UNNAMED-6-1
Recommended Ultimate Future ADF



UNNAMED WZ-1

Existing Stats: 213 Gross Acres, 111 Developed Acres (51.86% Developed), ADF per Flow Meter: 0.1 MGD

Future Growth Options:

2016 Zoning on Open Area up to 48%: 0 MGD + Existing ADF = 0.1 MGD Est Ult ADF (Sewer Comp Plan)

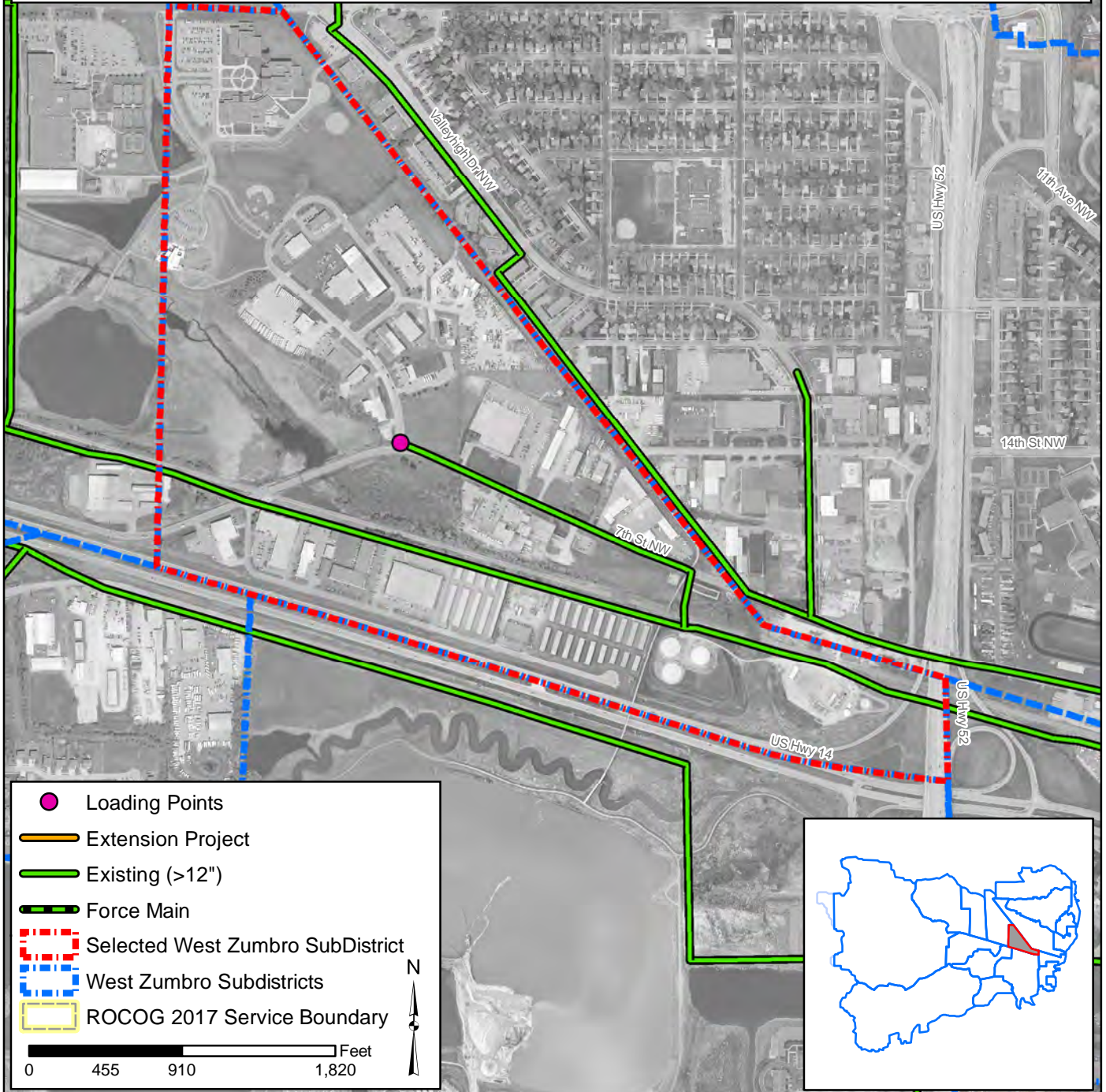
2018 Zoning on Developable Parcels: 0.03 MGD + Existing ADF = 0.12 MGD Est Ult Flow

2016-2040 TAZ Delta: 0 MGD + Existing ADF = 0.1 MGD Est 2040 Flow

2018-2040 TAZ Delta: 0.03 MGD + Existing ADF = 0.13 MGD Est 2040 Flow

*The most conservative of the loadings shown above was used as the Sanitary Sewer Wastewater Master Plan loading. See the recommended loading below.

Conclusion for UNNAMED WZ-1: Existing ADF: 0.1 MGD, Growth: 0.03 MGD, Ultimate Future ADF: 0.13 MGD



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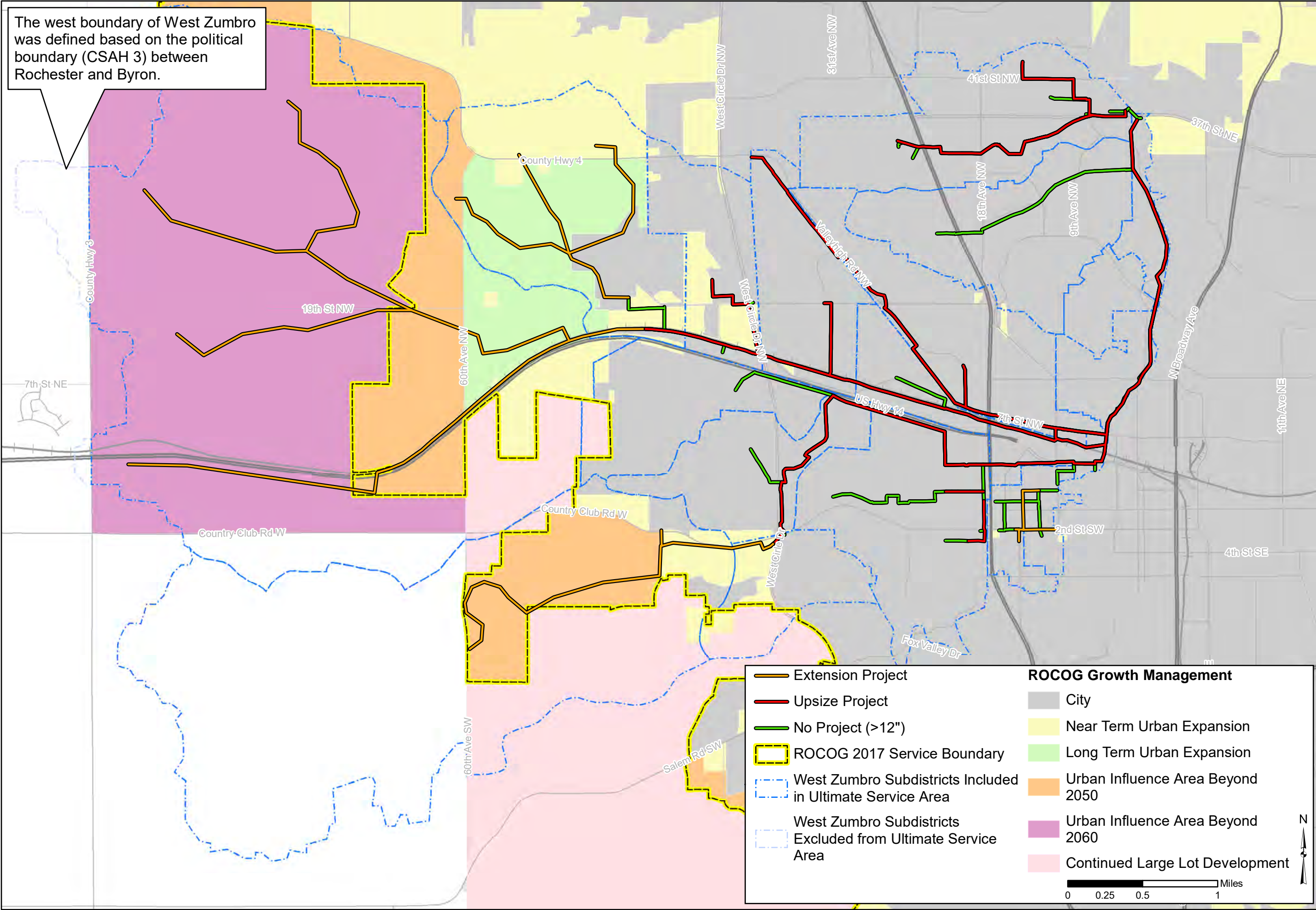
**XII.B.5
West Zumbro
Subdistrict: UNNAMED WZ-1
Recommended Ultimate Future ADF**



OVERALL MAP

ULTIMATE SEWER SERVICE AREA AND ROCOG PLANNING AREAS MAP

The west boundary of West Zumbro was defined based on the political boundary (CSAH 3) between Rochester and Byron.



<ul style="list-style-type: none"> — Extension Project — Upsize Project — No Project (>12") ROCOG 2017 Service Boundary West Zumbro Subdistricts Included in Ultimate Service Area West Zumbro Subdistricts Excluded from Ultimate Service Area 	<p>ROCOG Growth Management</p> <ul style="list-style-type: none"> City Near Term Urban Expansion Long Term Urban Expansion Urban Influence Area Beyond 2050 Urban Influence Area Beyond 2060 Continued Large Lot Development
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Miles

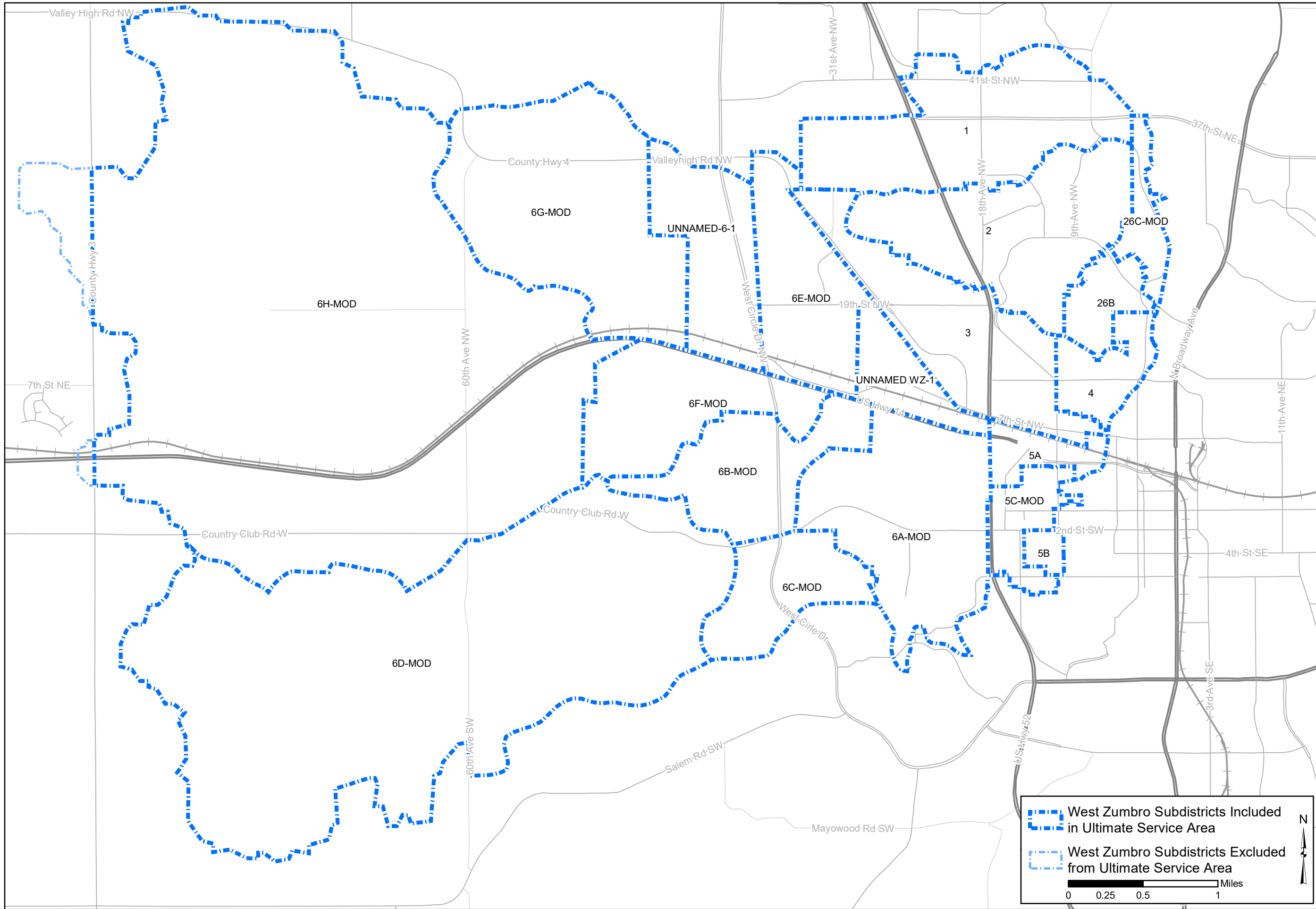


**XII.B.2
West Zumbro
Ultimate Sewer Service Area and
ROCOG Urban Planning Areas**

Sanitary Sewer
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Rochester, MN



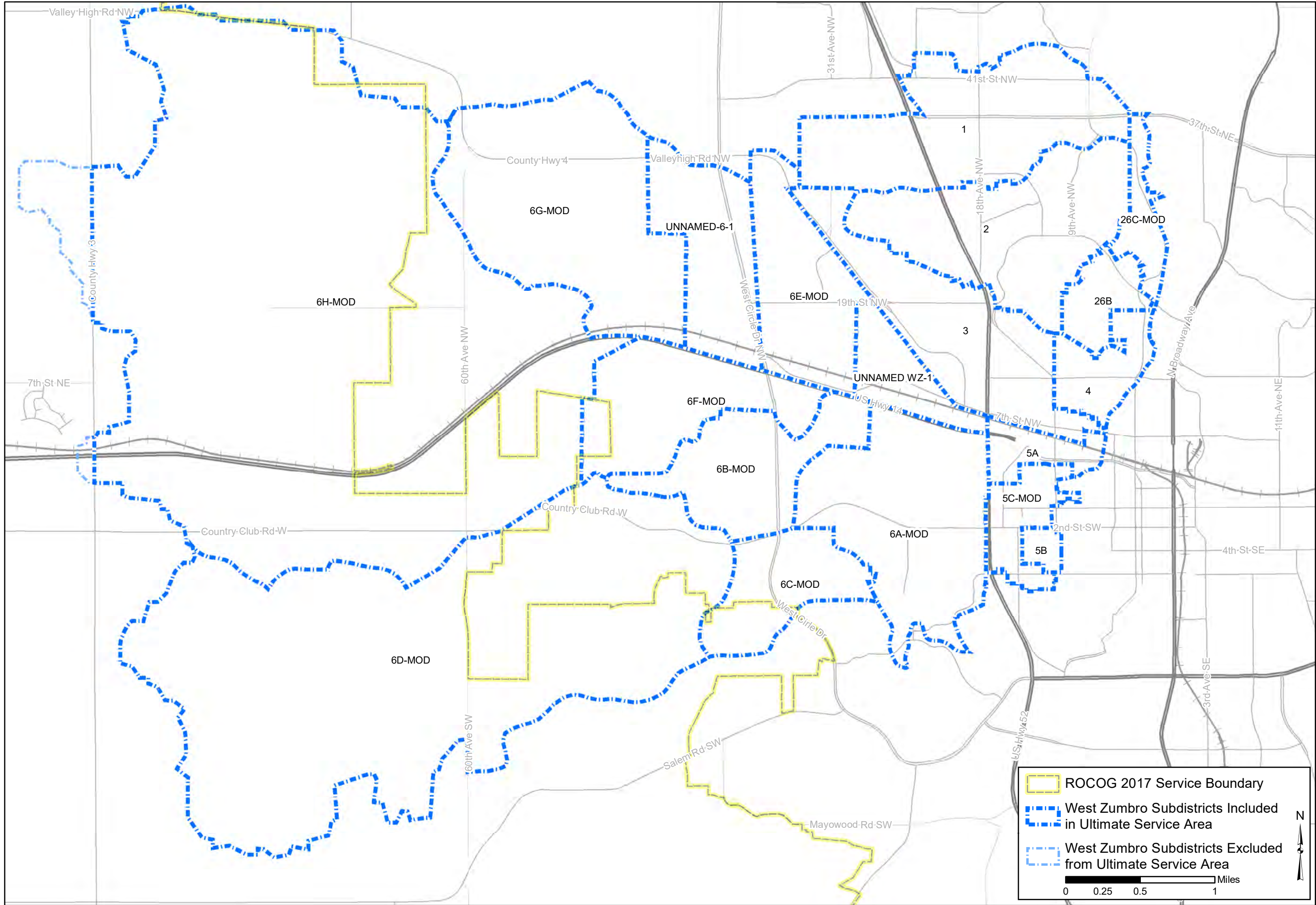
BOUNDARY MAPS



**XII.B.3
West Zumbro
Subdistricts**

**Sanitary Sewer
Wastewater Master Plan
Rochester, MN**





ROCOG 2017 Service Boundary
 West Zumbro Subdistricts Included in Ultimate Service Area
 West Zumbro Subdistricts Excluded from Ultimate Service Area

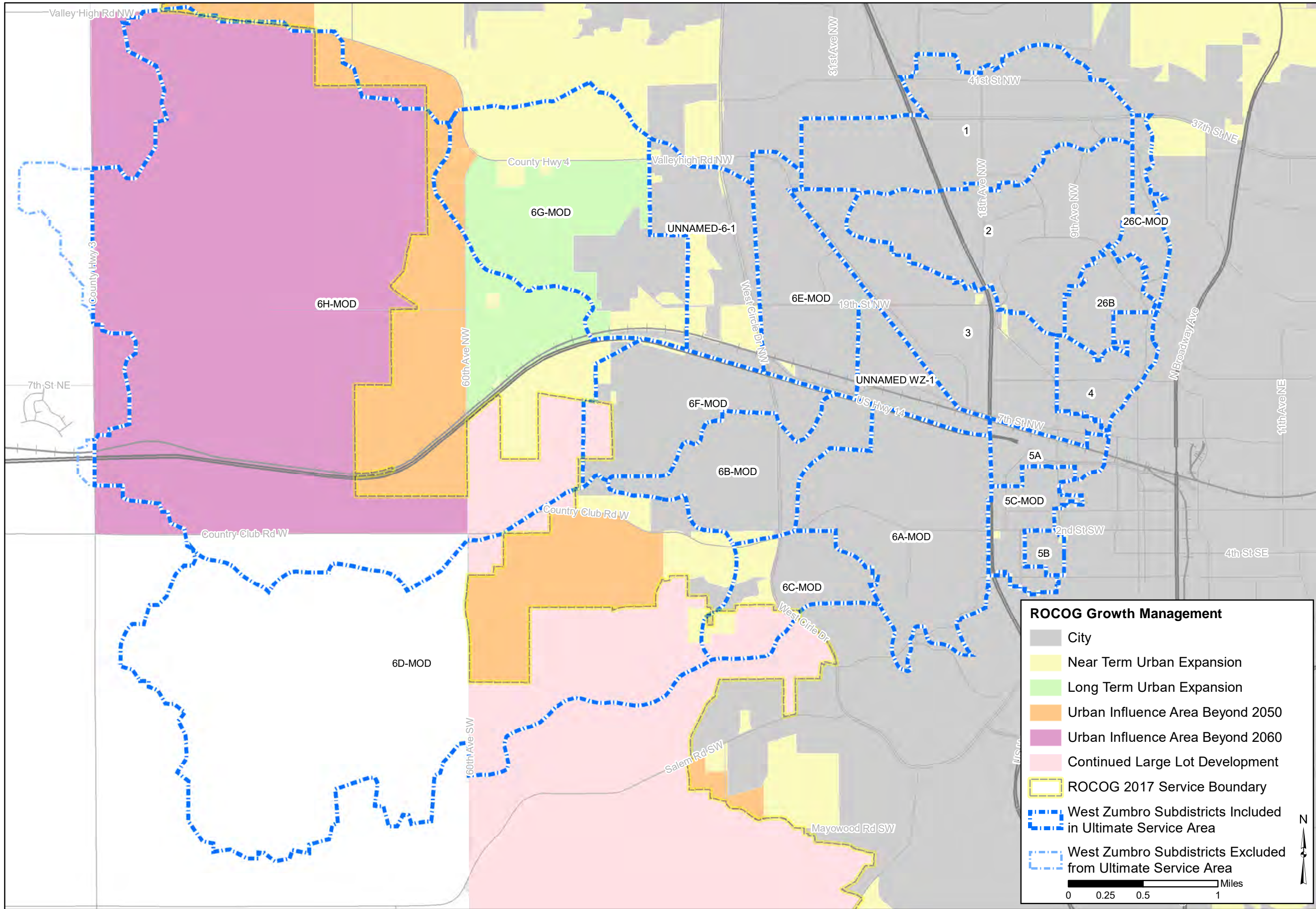
0 0.25 0.5 1 Miles

N

**XII.B.3
West Zumbro
Boundary Comparison**

Sanitary Sewer
Wastewater Master Plan
Rochester, MN





**XII.B.3
West Zumbro
Growth Projections**

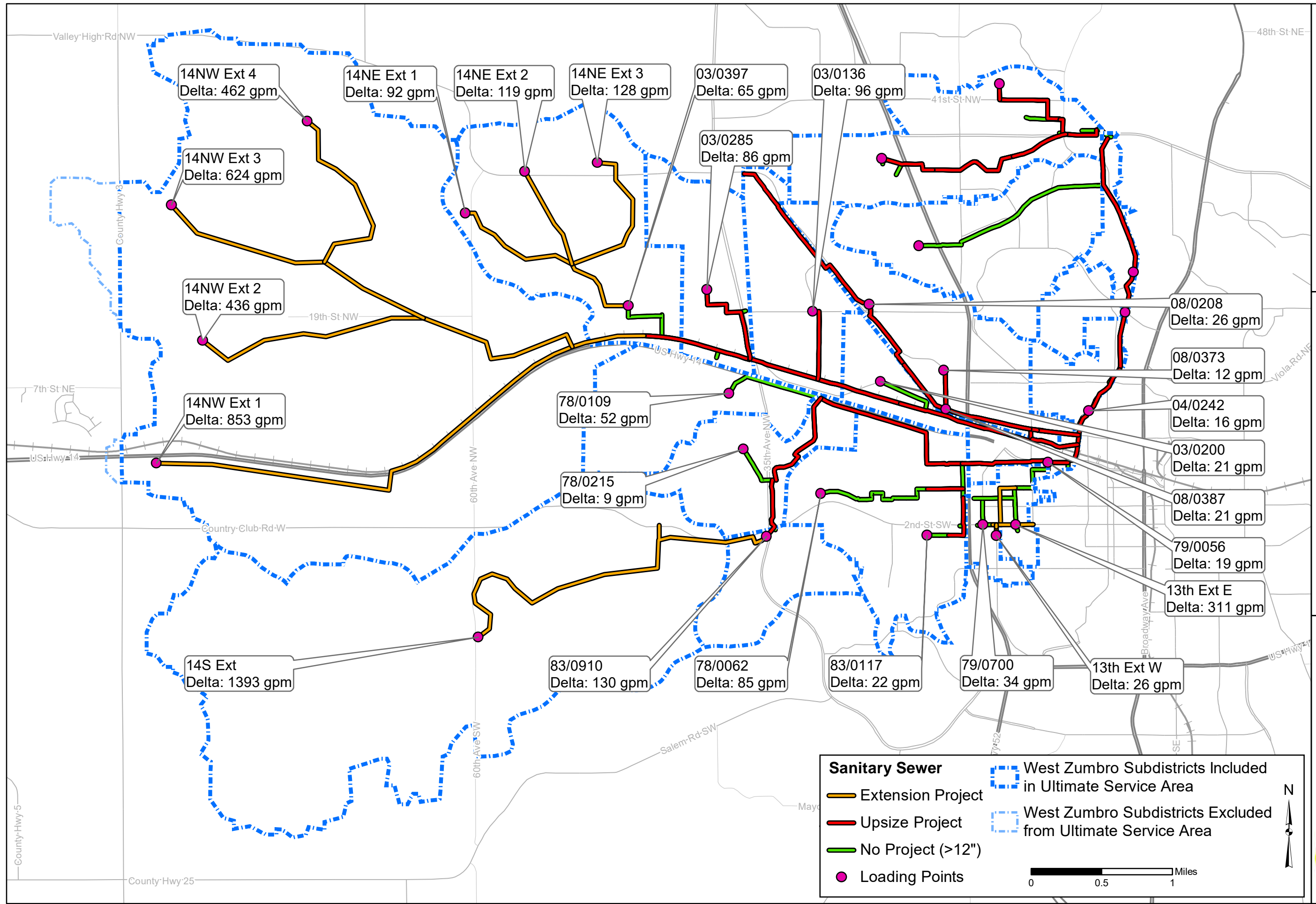
Sanitary Sewer
Wastewater Master Plan
Rochester, MN



LOADING POINTS MAP

**XII.B.4
West Zumbro
Loading Points
Delta ADF**

**Sanitary Sewer
Wastewater Master Plan
Rochester, MN**



Sanitary Sewer

- Extension Project
- Upsize Project
- No Project (>12")
- Loading Points

West Zumbro Subdistricts Included in Ultimate Service Area (Blue dashed line)

West Zumbro Subdistricts Excluded from Ultimate Service Area (Light blue dashed line)

0 0.5 1 Miles

N

PROJECT LIST

West Zumbro Project List

GIS No.		Project Name
WZ-XX-	1002	Cooke Park 04/0102 to 04/0108 (No Project)
WZ-XX-	1004	WZ Crossover 04/0102 to 79/0680
WZ-XX-	1006	13th Ave - Extension
WZ-XX-	1011	Interlachen 83/0910 to 78/0250
WZ-XX-	1018	Valleyhigh Drive 08/0208 to 04/0102
WZ-XX-	1019	Redi-Mix 03/H268 to 03/0112
WZ-XX-	1020	Kadlec/Whiting 03/0112 to 03/0144
WZ-XX-	1021	Cascade Meadows 03/0144 to 03/0125
WZ-XX-	1022	NW Hy-Vee 03/0125 to 04/0401
WZ-XX-	1023	West Circle Drive 03/0285 to 03/0272 (No Project)
WZ-XX-	1037	KR6 03/0260 to 08/0208 (No Project)
WZ-XX-	1043	R.A.C. 03/0136 to 03/0144 (No Project)
WZ-XX-	1044	Cascade Lake 78/0135 to 78/0273
WZ-XX-	1045	Cascade Creek 04/0401 to 04/0248
WZ-XX-	1046	Quarry Ridge 78/0365 to 78/0336
WZ-XX-	1047	W Frontage Road 83/0119 to 78/0361
WZ-XX-	1051	Country Club Manor 78/0250 to 78/0135
WZ-XX-	1058	Meadow Lakes - Extension
WZ-XX-	1059	J7773 - Extension
WZ-XX-	1060	J7793 - Extension
WZ-XX-	1062	Cooke Park E 79/0063 to 04/0401
WZ-XX-	1097	Kutzky Park 78/0273 to 79/0063

PRIORITIZATION LIST

Criteria and Scoring

7/29/2019

WZ Prioritization List

Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.

West Zumbro Only

Master Plan Project Name	GIS No.	Project Name
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Screening Criteria

Condition Score 5 or 6 Or Other Risks = Yes?	Existing SSO Risk = Yes?	Existing Basement Backup Risk = Yes?	Advance or Stop
If any screening criteria=Yes, advance to Detailed Criteria --> If no = stop			

Detailed Scoring

Scoring:	Risk					Benefit										
	Consequence			Likelihood		Future Growth				Rates		Present Growth		Risk Total (Max 600)	Benefit Total (Max 400)	Total Score (Max 1000)
	Impact to Major Users (Previously Consequence of Failure)	Existing SSO Risk or Basement Backup Risk	Quantity of SSO/BB's this pipe puts at risk during Q25	Condition Score or Other Risks	Utilization	Qty of Trunkline Upsize Projects Upstream of This Project	Developable Acres to be gained by String of Projects	Developable acres to be gained by this project	Capacity to be gained by this project	Trunk Sewer Rate for this project.	\$/ Dev. Acres Gained (Project with no DS Restrictions)	Capacity Recovery Rate for this project.	\$/ MGD gained			
All others = '1' HWY or <=36" Dia = '3' SIU, RR, or >36" Dia = '10'	No = '1' Yes Q25 = '3' Yes Q10 = '10'	<10 (SSOs + BB) = 1 11-99 (SSOs + BB) = 3 >100 (SSOs + BB) = 10	0, 1, 2 = '1' 3, 4 or in need repair in 3-5 years = '3' 5, 6 or in need of repair in 1-2 years = '10'	<=100% Q25 = '1' >100% Q25 = '3' >100% Q10 = '10'	0 projects = 1 1-10 projects = 3 11+ projects = 10	<2000 Ac = 1 2001-1000 Ac = 3 >10000 Ac = 10	<200 Ac = '1' 200-500 Ac = '3' >500 Ac = '10'	<10 MGD = 1 11-60 MGD = 3 >60 MGD = 10	> \$10,000 / DA = '1' > \$5,000 - \$10,000 / DA = '3' < \$5,000 DA = '10'	> \$500,000 / MGD = '1' \$100,000-\$500,000 / MGD = '3' < \$100,000 / MGD = '10'	No = '1' Yes, Developed = '3' Yes, Completely Developed, Paved = '10'	No = '1' Yes = '10'				

Projects that passed screening sorted by total score - Additional projects that did not pass screening will need to be completed to provide full capacity to the system

WZ-01- 1018	Valleyhigh Drive 08/0208 to 04/0102	Yes	Yes	Yes	-->	10	10	3	10	10	3	1	1	3	1	3	10	1	530	126	656
WZ-02- 1021	Cascade Meadows 03/0144 to 03/0125	Yes	--	--	-->	10	1	1	10	1	3	3	1	3	1	10	10	1	285	176	461
WZ-03- 1020	Kadlec/Whiting 03/0112 to 03/0144	Yes	--	--	-->	10	1	1	10	1	3	3	1	3	1	3	10	1	285	134	419
WZ-04- 1019	Redi-Mix 03/H268 to 03/0112	Yes	--	--	-->	10	1	1	10	1	1	3	1	3	1	3	10	1	285	122	407
WZ-05- 1046	Quarry Ridge 78/0365 to 78/0336	Yes	Yes	Yes	-->	1	3	3	10	3	1	1	1	1	1	3	10	10	220	142	362
WZ-06- 1044	Cascade Lake 78/0135 to 78/0273	Yes	Yes	Yes	-->	1	3	3	10	1	3	1	3	1	3	10	1	200	134	334	
WZ-07- 1047	W Frontage Road 83/0119 to 78/0361	Yes	Yes	Yes	-->	1	3	3	10	3	1	1	1	1	1	10	1	220	94	314	
WZ-08- 1051	Country Club Manor 78/0250 to 78/0135	--	Yes	Yes	-->	1	3	3	1	1	3	1	1	1	1	10	1	110	106	216	

Criteria and Scoring

7/29/2019

WZ Prioritization List

Details

Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.

West Zumbro Only

Master Plan Project Name	GIS No.	Project Name
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Impact to Major Users (Previously Consequence of Failure) Notes	Existing SSO or Basement Backup Risk Notes	SSO or Basement Backup Quantity Notes	Condition Score or Other Risks Notes	Utilization/Remaining Capacity Notes	Qty of Trunkline Upsize Projects Upstream of This Project Notes	Developable Acres to be gained by String of Projects	Developable Acres to be gained by This Project Alone	Developable acres to be Gained by this project No Downstream Restrictions Notes	Capacity to be Gained	Capacity to be Gained Notes	Sewer Trunk Rate	Capacity Recovery Rate	DA's to be directly gained in General Development Plan (GDP) area (Valid Only) Notes	Cost	Cost Notes	Tied to Other Sanitary Projects	Opportunity Project Notes
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Projects that passed screening sorted b

WZ-01- 1018	Valleyhigh Drive 08/0208 to 04/0102	Lourdes HS	Q10	35 SSO 10 BB	900 LF of 3's 300 LF of 4's 475 LF of 5's	0 MGD	1 (WZ-09)	26	26	26	13.17 MGD		\$ 15,330	\$ 454,290	\$ 5,983,000	WZ Crossover	Reconstruct 7th St NW& Cascade Creek Stabilization
WZ-02- 1021	Cascade Meadows 03/0144 to 03/0125	RR, Hwy 14 Chemical Plant			1,436 LF of 5's 1,505 LF of 4's 872 LF of 3's	3.8 MGD	3 (WZ-14, WZ-03, WZ-04)	2433	0	0	17.66 MGD		\$ 15,330	\$ 101,869	\$ 1,799,000		
WZ-03- 1020	Kadlec/Whiting 03/0112 to 03/0144	RR, Hwy 14			141 LF of 4's 495 LF of 3's Repair Needed	3 MGD	1 (WZ-04)	2,523	0	148	13.33 MGD		\$ 15,330	\$ 216,729	\$ 2,889,000		
WZ-04- 1019	Redi-Mix 03/H268 to 03/0112	RR, Hwy 14 Concrete Plants			566 LF of 5s 436 LF of 4's 1,190 LF of 3's	3.5 MGD	0	2343	0	2343	17.74 MGD		\$ 15,330	\$ 141,263	\$ 2,506,000		
WZ-05- 1046	Quarry Ridge 78/0365 to 78/0336		Q25	5 SSO 25 BB	525 LF of 3's 175 LF of 4's 430 LF of 6's	0 MGD	0	34	34	34	2.14 MGD		\$ 15,330	\$ 332,243	\$ 711,000	Quarry Ridge 9.57 Ac	
WZ-06- 1044	Cascade Lake 78/0135 to 78/0273		Q25	13 SSO 0 BB	950 LF of 3's 1,300 LF of 4's 650 LF of 5's	0.3 MGD	2 (WZ-08, WZ-21)	1,847	218	218	12.25 MGD		\$ 15,330	\$ 319,347	\$ 3,912,000		
WZ-07- 1047	W Frontage Road 83/0119 to 78/0361		Q25	5 SSO 30 BB	560 LF of 3's 360 LF of 5's	0 MGD	0	8	8	8	0.85 MGD		\$ 15,330	\$ 857,647	\$ 729,000		
WZ-08- 1051	Country Club Manor 78/0250 to 78/0135		Q25	8 SSO 83 BB	--	1.7 MGD	1 (WZ-21)	1340	0	0	3.51 MGD		\$ 15,330	\$ 721,937	\$ 2,534,000		

Criteria and Scoring

7/29/2019

WZ Prioritization List

Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.

West Zumbro Only

Master Plan Project Name	GIS No.	Project Name
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Screening Criteria

Condition Score 5 or 6 Or Other Risks = Yes?	Existing SSO Risk = Yes?	Existing Basement Backup Risk = Yes?	Advance or Stop
If any screening criteria=Yes, advance to Detailed Criteria --> If no = stop			

Detailed Scoring

Scoring:	Risk					Benefit									
	Consequence			Likelihood		Future Growth				Rates		Present Growth			
	Impact to Major Users (Previously Consequence of Failure)	Existing SSO Risk or Basement Backup Risk	Quantity of SSO/BB's this pipe puts at risk during Q25	Condition Score or Other Risks	Utilization	Qty of Trunkline Upsize Projects Upstream of This Project	Developable Acres to be gained by String of Projects	Developable acres to be gained by this project	Capacity to be gained by this project	Trunk Sewer Rate for this project.	\$/ Dev. Acres Gained (Project with no DS Restrictions)	Capacity Recovery Rate for this project.	\$/ MGD gained	Availability of Other City Services for this project	DA's to be gained in Valid General Development Plan (GDP) by this project
All others = '1' HWY or <=36" Dia = '3' SIU, RR, or >36" Dia = '10'	15	15	10	10	10	6	4	4	4	6	6	6	6	6	4
No = '1' Yes Q25 = '3' Yes Q10 = '10'															
<10 (SSOs + BB) = 1 11-99 (SSOs + BB) = 3 >100 (SSOs + BB) = 10															
0, 1, 2 = '1' 3, 4 or in need repair in 3-5 years = '3' 5, 6 or in need of repair in 1-2 years = '10'															
<=100% Q25 = '1' >100% Q25 = '3' >100% Q10 = '10'															
0 projects = 1 1-10 projects = 3 11+ projects = 10															
<2000 Ac = 1 2001-10000 Ac = 3 >10000 Ac = 10															
<200 Ac = '1' 200-500 Ac = '3' >500 Ac = '10'															
<10 MGD = 1 11-60 MGD = 3 >60 MGD = 10															
> \$10,000 / DA = '1' \$5,000 - \$10,000 / DA = '3' <\$5,000 DA = '10'															
> \$500,000 / MGD = '1' \$100,000-\$500,000 / MGD = '3' <\$100,000 / MGD = '10'															
No = '1' Yes, Developed = '3' Yes, Completely Developed, Paved = '10'															
No = '1' Yes = '10'															
Risk Total (Max 600)															
Benefit Total (Max 400)															
Total Score (Max 1000)															

Projects that did not pass screening sorted by total score

WZ-09- 1037	KR6 03/0260 to 08/0208 (No Project)	--	--	--	no project	4	4	4	3	4	4	4	4	4	4	4	4	4	305	94	399
WZ-10- 1062	Cooke Park E 79/0063 to 04/0401	--	--	--	stop	10	1	1	3	1	3	1	1	3	1	10	10	1	215	168	383
WZ-11- 1022	NW Hy-Vee 03/0125 to 04/0401	--	--	--	stop	10	1	1	1	1	3	3	1	3	1	3	10	1	195	134	329
WZ-12- 1006	13th Ave - Extension	--	--	--	stop	10	1	1	3	1	1	1	1	1	3	10	1	215	106	321	
WZ-13- 1043	R.A.C. 03/0136 to 03/0144 (No Project)	--	--	--	no project	4	4	4	3	4	4	4	4	4	4	4	4	4	245	94	309
WZ-14- 1045	Cascade Creek 04/0401 to 04/0248	--	--	--	stop	3	1	1	3	1	3	3	10	3	1	3	10	1	110	170	280
WZ-15- 1023	West Circle Drive 03/0285 to 03/0272 (No Project)	--	--	--	no project	3	4	4	4	4	4	4	4	4	4	4	4	4	480	94	274

Criteria and Scoring

7/29/2019

WZ Prioritization List

Details

Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.

West Zumbro Only

Master Plan Project Name	GIS No.	Project Name
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Impact to Major Users (Previously Consequence of Failure) Notes	Existing SSO or Basement Backup Risk Notes	SSO or Basement Backup Quantity Notes	Condition Score or Other Risks Notes	Utilization/Remaining Capacity Notes	Qty of Trunkline Upsize Projects Upstream of This Project Notes	Developable Acres to be gained by String of Projects	Developable Acres to be gained by This Project Alone	Developable acres to be gained by this project No Downstream Restrictions Notes	Capacity to be Gained	Capacity to be Gained Notes	Sewer Trunk Rate	Capacity Recovery Rate	DA's to be directly gained in General Development Plan (GDP) area (Valid Only) Notes	Cost	Cost Notes	Tied to Other Sanitary Projects	Opportunity Project Notes
---	--	---------------------------------------	--------------------------------------	--------------------------------------	---	--	--	---	-----------------------	-----------------------------	------------------	------------------------	--	------	------------	---------------------------------	---------------------------

Projects that did not pass screening so

WZ-09- 1037	KR6 03/0260 to 08/0208 (No Project)	Benchmark	900 LF of 3's 1,200 LF of 4's	0.6 MGD	0	0	0	0	0 MGD	NO PROJECT		oo		\$ -		VH, WZ Crossover	
WZ-10- 1062	Cooke Park E 79/0063 to 04/0401	RR, HWY	100 LF of 3's 250 LF of 4's	1.5 MGD	4 (WZ-20, WZ-06, WZ-08, WZ-21)	1535	0	0	17.92 MGD		\$ 15,330	\$ 68,583		\$ 1,229,000			
WZ-11- 1022	NW Hy-Vee 03/0125 to 04/0401	RR, Hwy 14		4.5 MGD	4 (WZ-02, WZ-03, WZ-04, WZ-14)	2232	0	813	21.43 MGD		\$ 15,330	\$ 295,380		\$ 6,330,000			
WZ-12- 1006	13th Ave - Extension	St Mary's	650 LF of 3's		0	0	0	0	4.84 MGD	NO ACRES GAINED- BUT NEED FOR FUTURE DEVELOPMENT OF ST. MARYS AREA	\$ 15,330	\$ 473,347		\$ 2,291,000			
WZ-13- 1043	R.A.C. 03/0136 to 03/0144 (No Project)	RR, Hwy 14	360 LF of 4's	1.5 MGD	0	0	0	0	0 MGD	NO PROJECT		oo		\$ -			
WZ-14- 1045	Cascade Creek 04/0401 to 04/0248	=36" Crosses Broadway	340 LF of 4's	1.4 MGD	5 (WZ-02, WZ-03, WZ-04, WZ-12, WZ-14)	5,156	1,000	1,370	33.72 MGD		\$ 15,330	\$ 189,472		\$ 6,389,000			
WZ-15- 1023	West Circle Drive 03/0285 to 03/0272 (No Project)	Hwy?	--	0.9 MGD	0	0	0	0	0 MGD	NO PROJECT		oo		\$ -			

Criteria and Scoring
7/29/2019
WZ Prioritization List

Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.

West Zumbro Only

Master Plan Project Name	GIS No.	Project Name
WZ-16- 1002	1002	Cooke Park 04/0102 to 04/0108 (No Project)
WZ-17- 1004	1004	WZ Crossover 04/0102 to 79/0680
WZ-18- 1060	1060	J7793 - Extension
WZ-19- 1097	1097	Kutzky Park 78/0273 to 79/0063
WZ-20- 1011	1011	Interlachen 83/0910 to 78/0250
WZ-21- 1059	1059	J7773 - Extension
WZ-22- 1058	1058	Meadow Lakes - Extension

Screening Criteria

Condition Score 5 or 6 Or Other Risks = Yes?	Existing SSO Risk = Yes?	Existing Basement Backup Risk = Yes?	Advance or Stop
If any screening criteria=Yes, advance to Detailed Criteria --> If no = stop			
--	--	--	no project
--	--	--	stop
--	--	--	stop
--	--	--	stop
--	--	--	stop
--	--	--	stop
--	--	--	stop

Detailed Scoring

Scoring:	Weight:	Risk					Benefit								Risk Total (Max 600)	Benefit Total (Max 400)	Total Score (Max 1000)
		Consequence			Likelihood		Future Growth				Rates		Present Growth				
		Impact to Major Users (Previously Consequence of Failure)	Existing SSO Risk or Basement Backup Risk	Quantity of SSO/BB's this pipe puts at risk during Q25	Condition Score or Other Risks	Utilization	Qty of Trunkline Upsize Projects Upstream of This Project	Developable Acres to be gained by String of Projects	Developable acres to be gained by this project	Capacity to be gained by this project	Trunk Sewer Rate for this project: \$/ Dev. Acres Gained (Project with no DS Restrictions)	Capacity Recovery Rate for this project: \$/ MGD gained	Availability of Other City Services for this project	DA's to be gained in Valid General Development Plan (GDP) by this project			
		15	15	10	10	10	6	4	4	4	6	6	6	4			
All others = '1' HWY or <=36" Dia = '3' SIU, RR, or >36" Dia = '10'	No = '1' Yes Q25 = '3' Yes Q10 = '10'	<10 (SSOs + BB) = 1 11-99 (SSOs + BB) = 3 >100 (SSOs + BB) = 10	0, 1, 2 = '1' 3, 4 or in need repair in 3-5 years = '3' 5, 6 or in need of repair in 1-2 years = '10'	<=100% Q25 = '1' >100% Q25 = '3' >100% Q10 = '10'	0 projects = 1 1-10 projects = 3 11+ projects = 10	<2000 Ac = 1 2001-10000 Ac = 3 >10000 Ac = 10	<200 Ac = '1' 200-500 Ac = '3' >500 Ac = '10'	<10 MGD = 1 11-60 MGD = 3 >60 MGD = 10	> \$10,000 / DA = '1' \$5,000 - \$10,000 / DA = '3' <\$5,000 DA = '10'	> \$500,000 / MGD = '1' \$100,000-\$500,000 / MGD = '3' <\$100,000 / MGD = '10'	No = '1' Yes, Developed = '3' Yes, Completely Developed, Paved = '10'	No = '1' Yes = '10'	Risk Total (Max 600)	Benefit Total (Max 400)	Total Score (Max 1000)		
		4	4	4	3	4	4	4	4	4	4	4	4	4	170	94	264
		1	1	1	1	1	3	1	1	10	1	10	10	1	60	196	256
		10	1	1	1	1	3	1	3	1	1	1	1	195	56	251	
		3	1	1	3	1	3	1	3	1	3	10	1	110	126	236	
		1	1	1	3	1	1	1	1	3	10	10	10	80	142	222	
		1	1	1	1	1	1	1	1	1	1	10	10	60	76	136	
		1	1	1	1	1	1	1	3	1	1	1	1	60	48	108	

Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.

West Zumbro Only

Master Plan Project Name	GIS No.	Project Name
WZ-16-	1002	Cooke Park 04/0102 to 04/0108 (No Project)
WZ-17-	1004	WZ Crossover 04/0102 to 79/0680
WZ-18-	1060	J7793 - Extension
WZ-19-	1097	Kutzky Park 78/0273 to 79/0063
WZ-20-	1011	Interlachen 83/0910 to 78/0250
WZ-21-	1059	J7773 - Extension
WZ-22-	1058	Meadow Lakes - Extension

Impact to Major Users (Previously Consequence of Failure) Notes	Existing SSO or Basement Backup Risk Notes	SSO or Basement Backup Quantity Notes	Condition Score or Other Risks Notes	Utilization/Remaining Capacity Notes	Qty of Trunkline Upsize Projects Upstream of This Project Notes	Developable Acres to be gained by String of Projects	Developable Acres to be gained by This Project Alone	Developable acres to be Gained by this project No Downstream Restrictions Notes	Capacity to be Gained	Capacity to be Gained Notes	Sewer Trunk Rate	Capacity Recovery Rate	DA's to be directly gained in General Development Plan (GDP) area (Valid Only) Notes	Cost	Cost Notes	Tied to Other Sanitary Projects	Opportunity Project Notes
	Q10 - WZ Crossover will reroute flow and	4 SSO 36 BB	400 Lf of 2's 750 LF of 3's	0.5 MGD	0	0	0	0	0 MGD	NO PROJECT		oo		\$ -		WZ Crossover will reroute flow and remove SSO/BB risk	
			--	8 MGD	3 (WZ-01, WZ-17, WZ-09)	26	26	26	75.04 MGD		\$ 15,330	\$ 6,157		\$ 462,000		VH, KR6, Cooke Park	Reconstruct 7th St NW
RR, HWY					0	2875	0	2875	11.27 MGD		\$ 15,330	\$ 1,648,802		\$ 18,582,000			
HWY			100 LF of 3's 300 LF of 4's	1.8 MGD	3 (WZ-06, WZ-08, WZ-21)	1415	0	0	15.78 MGD		\$ 15,330	\$ 307,224		\$ 4,848,000			Civic Center Drive Improvements
			450 LF of 3's	1.1 MGD	0	1514	0	1514	9.91 MGD		\$ 15,330	\$ 247,629	Meadow Lakes 11.68 Ac	\$ 2,454,000			
					0	521	0	521	2.63 MGD		\$ 15,330	\$ 1,341,445	Badger Ridge 44.38 Ac	\$ 3,528,000			Construct regional stormwater facility
					0	1693	0	1693	10.65 MGD		\$ 15,330	\$ 641,033		\$ 6,827,000			

CHAPTER BOOKLET OF PRIORITY 1 PROJECTS

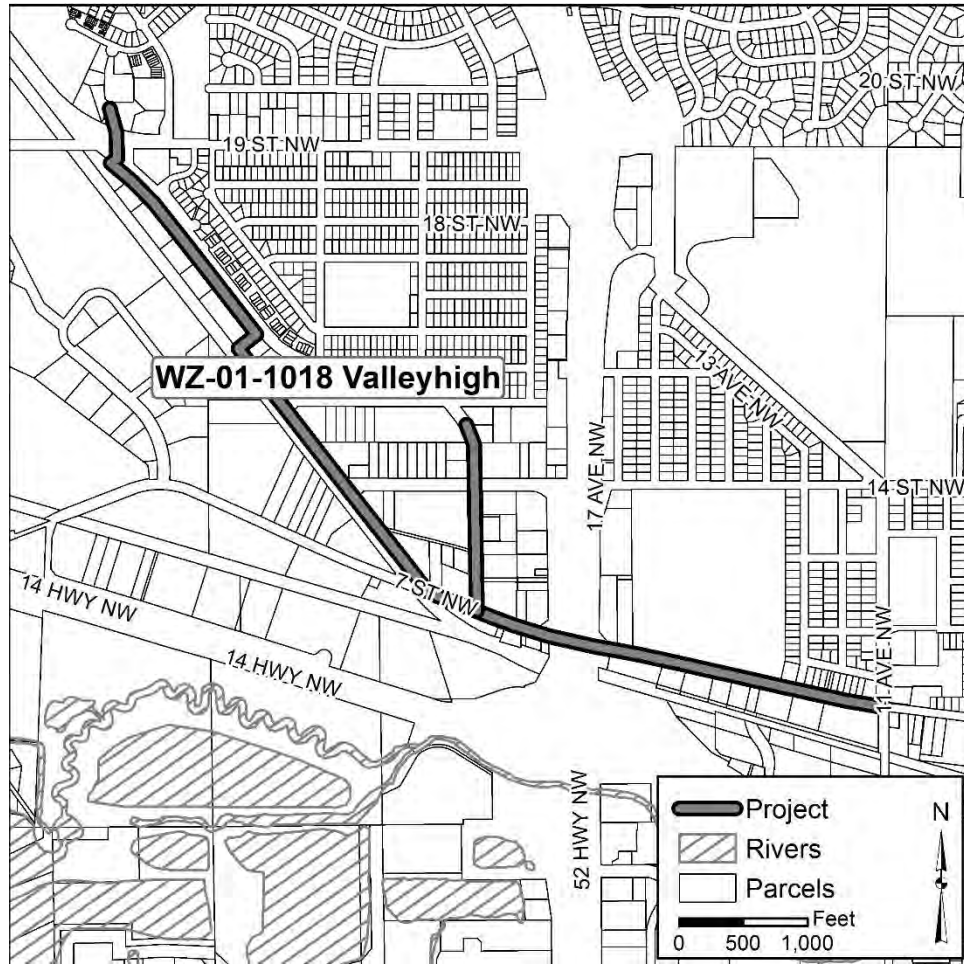
Criteria and Scoring

5/14/2019

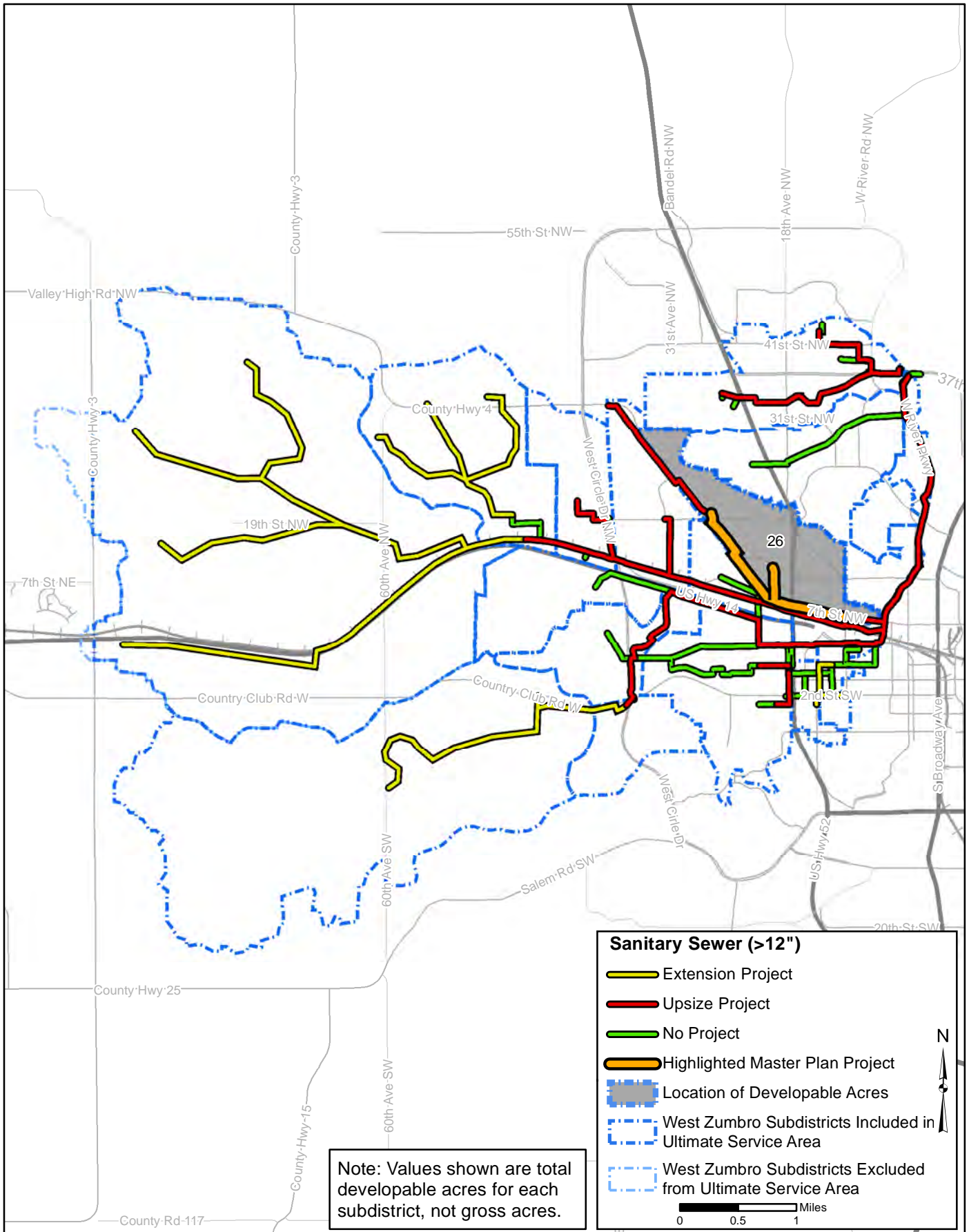
WZ 5-Year CIP List

West Zumbro Only			Risk Total (Max 600)	Benefit Total (Max 400)	Total Score (Max 1000)	Cost
Master Plan Project Name	GIS No.	Project Name				
Projects that passed screening sorted by total score						
WZ-01-	1018	Valleyhigh Drive 08/0208 to 04/0102	530	126	656	\$ 5,983,000
WZ-02-	1021	Cascade Meadows 03/0144 to 03/0125	285	176	461	\$ 1,799,000
WZ-03-	1020	Kadlec/Whiting 03/0112 to 03/0144	285	134	419	\$ 2,889,000
WZ-04-	1019	Redi-Mix 03/H268 to 03/0112	285	122	407	\$ 2,506,000
WZ-05-	1046	Quarry Ridge 78/0365 to 78/0336	220	142	362	\$ 711,000
WZ-06-	1044	Cascade Lake 78/0135 to 78/0273	200	134	334	\$ 3,912,000
WZ-07-	1047	W Frontage Road 83/0119 to 78/0361	220	94	314	\$ 729,000
WZ-08-	1051	Country Club Manor 78/0250 to 78/0135	110	106	216	\$ 2,534,000

WZ-01-1018 Valleyhigh Drive



Description:	Valleyhigh Drive (Master Plan Project Number WZ-01-1018) runs along Valleyhigh Drive NW. The project consists of upsizing the existing pipe or adding a parallel pipe. This project will reduce SSO and basement backup risks as well as address condition issues in the pipe. Opportunities exist to combine this project with the WZ Crossover sanitary sewer project as well as the 7th St NW Reconstruction project and the Cascade Creek Stabilization project to reduce impact and costs of this project. Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.		
Pipe Segment(s):	From: MH 08/0208	To: MH 04/0102	
Length:	15,600	Linear Feet	
Preliminary Project Cost:	\$ 5,983,000	Sanitary Sewer Cost:	\$ 2,882,000
Capacity:	Existing: 1.6 MGD	Future:	11.4 MGD
SSO/BBs Avoided:	45		
Downstream Projects:	4 Projects (1004, 1022, 1045, 1042)		
Upstream Projects:	1 Project (1037)		
Recovery Rate:	\$ 454,290 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Preliminary Cost Opinion for Pipe Segment "WZ-01-1018 Valleyhigh Dr"

Grading and Base				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Mobilization	Lump Sum	\$ 210,000	1	\$ 210,000
Traffic Control	Lump Sum	\$ 43,000	1	\$ 43,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	24300	\$ 122,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	3600	\$ 29,000
Remove Concrete Walk	Sq. Yd.	\$ 4	2500	\$ 10,000
Common Excavation	Cu. Yd.	\$ 6	12200	\$ 73,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	5400	\$ 173,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	4000	\$ 128,000
Bituminous Paving	Ton	\$ 80	5300	\$ 424,000
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	3600	\$ 65,000
Concrete Walk	Sq. Ft.	\$ 6	22500	\$ 135,000
Concrete Driveway	Sq. Yd.	\$ 60	1100	\$ 66,000
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	8400	\$ 42,000
Sod	Lin. Ft.	\$ 27	4200	\$ 113,000
Seed & Mulch	Lin Ft.	\$ 3	4200	\$ 13,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 1,651,000
Sanitary Sewer				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Remove Sanitary Sewer Manholes	Each	\$ 1,000	34	\$ 34,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	3200	\$ 32,000
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	3200	\$ 800,000
Construct 30" Sanitary Sewer Pipe	Lin. Ft.	\$ 200	2300	\$ 460,000
Construct 24" Sanitary Sewer Pipe	Lin. Ft.	\$ 150	2900	\$ 435,000
Construct 84" Manhole	Each	\$ 12,000	14	\$ 168,000
Construct 72" Manhole	Each	\$ 10,000	8	\$ 80,000
Construct 60" Manhole	Each	\$ 8,000	12	\$ 96,000
Manhole Waterproofing	Each	\$ 1,000	34	\$ 34,000
Bypass Pumping	MGD	\$ 10,000	7.4	\$ 74,000
Solid Rock Excavation	Lin. Ft.	\$ 120	2100	\$ 252,000
Dewatering	Lin. Ft.	\$ 20	2100	\$ 42,000
Highway Crossing	Lin. Ft.	\$ 1,250	300	\$ 375,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 2,882,000
Total Grading & Base & Sewer				\$ 4,533,000
10% Contingency				\$ 453,000
<hr/> Sub-total				\$ 4,986,000
12% Engineering				\$ 598,000
8% Administrative				\$ 399,000
<hr/> Probable Cost Opinion				\$ 5,983,000

5% of project cost, rounded to nearest \$10,000
 1% of project cost, rounded to nearest \$1,000
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 Set rate
 40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.
 40' width / 43,560 sq. ft. /acre x \$2,000/acre
 Set rate

Set rate
 Set rate
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Set rate
 Set rate
 Based on rate table
 Set rate
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Based on rate table
 Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-01-1018 Valleyhigh Dr"

Pipe Dia. & Material		Rate Table				Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost	Rock Exc.			
12	PVC	\$ 55	48 \$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48 \$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48 \$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60 \$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60 \$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60 \$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72 \$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84 \$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96 \$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108 \$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108 \$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120 \$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120 \$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	3230
Pipe Size	36
# of MH	14
New Manhole Size	84
Bypass Flow (MGD)	7.4
Major Impacts? (1 or 0)	
Rdwy Alignment	1 LF: 3230
HWY XING	0 LF: 0
RR XING	0 LF: 0
Stream XING	0 LF: 0
Rock Excavation	1 LF: 807
Dewatering	1 LF: 807

Width (ft) 50
 Driveways (#) 20
 Drvwy Width (ft) 30
 ROW (ft) 85
 Curb and Gutter? 3200
 Sidewalk Length 3000 5 ft Width
 Bike Path Width 0 60 ft disturbance

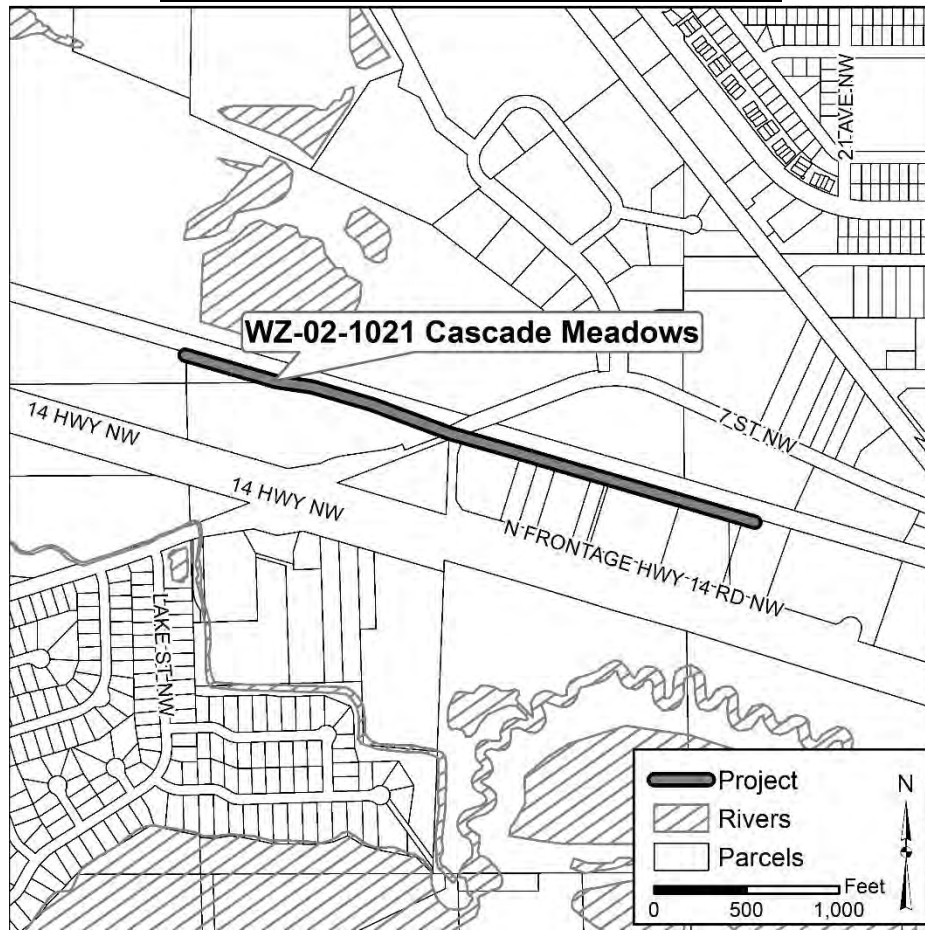
Linear Feet	2323
Pipe Size	30
# of MH	8
New Manhole Size	72
Bypass Flow (MGD)	
Major Impacts? (1 or 0)	
Rdwy Alignment	1 LF: 1000
HWY XING	0 LF: 0
RR XING	0 LF: 0
Stream XING	0 LF: 0
Rock Excavation	1 LF: 581
Dewatering	1 LF: 581

Width (ft) 50 600 ft of Parking lot
 Driveways (#) 1
 Drvwy Width (ft) 30
 ROW (ft) 85
 Curb and Gutter? 400
 Sidewalk Length 0 5 ft Width
 Bike Path Width 0 60 ft disturbance

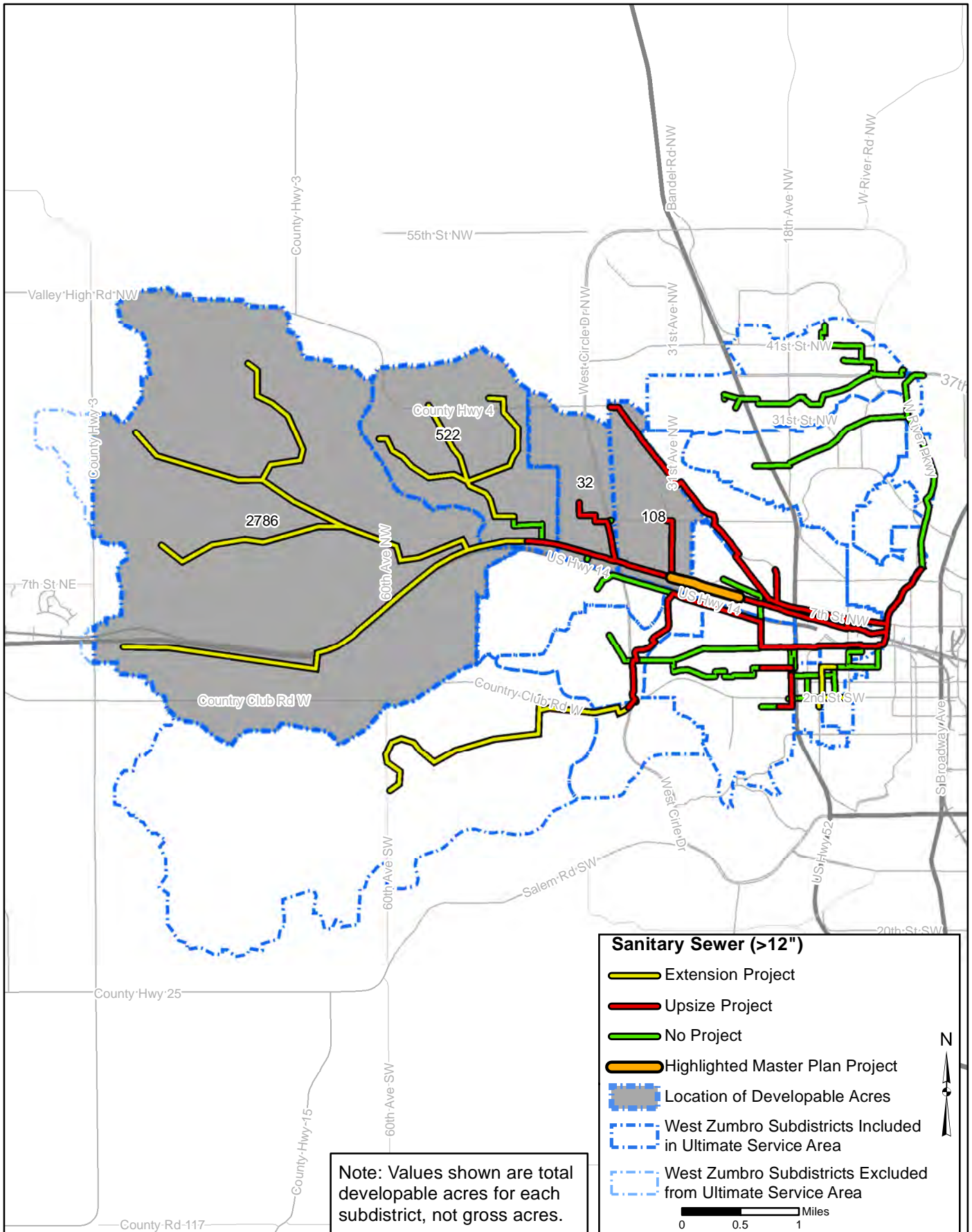
Linear Feet	2895
Pipe Size	24
# of MH	12
New Manhole Size	60
Bypass Flow (MGD)	
Major Impacts? (1 or 0)	
Rdwy Alignment	1 LF: 150
HWY XING	1 LF: 250
RR XING	0 LF: 0
Stream XING	0 LF: 0
Rock Excavation	1 LF: 724
Dewatering	1 LF: 724

Width (ft) 50 Parking Lot
 Driveways (#) 7
 Drvwy Width (ft) 25
 ROW (ft) 90
 Curb and Gutter? 0
 Sidewalk Length 1500 5 ft Width
 Bike Path Width 0 60 ft disturbance

WZ-02-1021 Cascade Meadows



Description:	Cascade Meadows (Master Plan Project Number WZ-02-1021) runs along the north side of US Highway 14. The project consists of upsizing the existing pipe or adding a parallel pipe. This project addresses condition issues throughout the pipe segment. Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.		
Pipe Segment(s):	From: MH 03/0144	To: MH 03/0125	
Length:	3,200	Linear Feet	
Preliminary Project Cost:	\$ 1,799,000	Sanitary Sewer Cost:	\$ 1,221,000
Capacity:	Existing: 5.5 MGD	Future:	23.2 MGD
SSO/BBs Avoided:	0		
Additional Acres-			
Existing Available Acres in Pipe:	1,154	Acres	
Acres Gained with Upstream & Downstream Projects Completed:	2,433	Acres	
Total Upstream Developable Acres:	3,586	Acres	
Restrictions to Total Upstream Developable Acres -			
Acres Gained by this Project Alone:	0	Acres at 1045	
Acres Gained with Downstream Improvements Completed:	0	Acres at 1043 and 1020	
Downstream Projects:	3 Projects (1022, 1045, 1042)		
Upstream Projects:	3 Projects (1043, 1020, 1019)		
Recovery Rate:	\$101,869 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Note: Values shown are total developable acres for each subdistrict, not gross acres.

Sanitary Sewer (>12")

- Extension Project
- Upsize Project
- No Project
- Highlighted Master Plan Project
- Location of Developable Acres
- West Zumbro Subdistricts Included in Ultimate Service Area
- West Zumbro Subdistricts Excluded from Ultimate Service Area

0 0.5 1 Miles



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**Location of Developable Acres
for Highlighted Project:
WZ-02-1021 Cascade Meadows**



Preliminary Cost Opinion for Pipe Segment "WZ-02-1021 Cascade Meadows"

Grading and Base					
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>	
Mobilization	Lump Sum	\$ 60,000	1	\$ 60,000	5% of project cost, rounded to nearest \$10,000
Traffic Control	Lump Sum	\$ 13,000	1	\$ 13,000	1% of project cost, rounded to nearest \$1,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	0	\$ -	Set rate
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -	Set rate
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -	Set rate
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -	Set rate
Common Excavation	Cu. Yd.	\$ 6	0	\$ -	Set rate
Aggregate Base (CV)	Cu. Yd.	\$ 32	0	\$ -	Set rate
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	0	\$ -	Set rate
Bituminous Paving	Ton	\$ 80	0	\$ -	Set rate
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -	Set rate
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -	Set rate
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -	Set rate
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -	Set rate
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -	Set rate
Erosion Control	Lin. Ft.	\$ 5	3200	\$ 16,000	Set rate
Sod	Lin. Ft.	\$ 27	1600	\$ 43,000	40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.
Seed & Mulch	Lin Ft.	\$ 3	1600	\$ 5,000	40' width / 43,560 sq. ft. /acre x \$2,000/acre
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000	Set rate
Grading & Base				\$ 142,000	
Sanitary Sewer					
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>	
Remove Sanitary Sewer Manholes	Each	\$ 1,000	10	\$ 10,000	Set rate
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	3200	\$ 32,000	Set rate
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	3200	\$ 800,000	Based on rate table
Construct 84" Manhole	Each	\$ 12,000	10	\$ 120,000	Based on rate table
Manhole Waterproofing	Each	\$ 1,000	10	\$ 10,000	Set rate
Bypass Pumping	MGD	\$ 10,000	1.7	\$ 17,000	Set rate
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Dewatering	Lin. Ft.	\$ 20	1600	\$ 32,000	Set rate
Highway Crossing	Lin. Ft.	\$ 2,000	100	\$ 200,000	Based on rate table
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -	Use separate probable cost spreadsheet
Sanitary Sewer				\$ 1,221,000	
Total Grading & Base & Sewer				\$ 1,363,000	
10% Contingency				\$ 136,000	
Sub-total				\$ 1,499,000	
12% Engineering				\$ 180,000	
8% Administrative				\$ 120,000	
Probable Cost Opinion				\$ 1,799,000	

Preliminary Cost Opinion for Pipe Segment "WZ-02-1021 Cascade Meadows"

Pipe Dia. & Material	F&I Cost	Manhole Dia/ F&I Cost	Rock Exc.	Trenchless Steel Casing Hwy & RR	Open Cut Streams
12 PVC	\$ 55	48 \$ 6,000	\$ 80	\$ 250	\$ 300
15 PVC	\$ 65	48 \$ 6,000	\$ 85	\$ 500	\$ 400
18 PVC	\$ 75	48 \$ 6,000	\$ 90	\$ 750	\$ 500
21 PVC	\$ 100	60 \$ 8,000	\$ 95	\$ 1,000	\$ 600
24 PVC	\$ 150	60 \$ 8,000	\$ 105	\$ 1,250	\$ 700
27 PVC	\$ 175	60 \$ 8,000	\$ 110	\$ 1,500	\$ 800
30 PVC	\$ 200	72 \$ 10,000	\$ 120	\$ 1,750	\$ 900
36 Hobas	\$ 250	84 \$ 12,000	\$ 130	\$ 2,000	\$ 1,200
42 Hobas	\$ 350	96 \$ 14,000	\$ 145	\$ 2,250	\$ 1,400
48 Hobas	\$ 400	108 \$ 16,000	\$ 155	\$ 2,500	\$ 1,600
54 Hobas	\$ 450	108 \$ 16,000	\$ 170	\$ 2,750	\$ 1,800
60 Hobas	\$ 500	120 \$ 18,000	\$ 180	\$ 3,000	\$ 2,000
66 Hobas	\$ 550	120 \$ 18,000	\$ 195	\$ 3,250	\$ 2,200

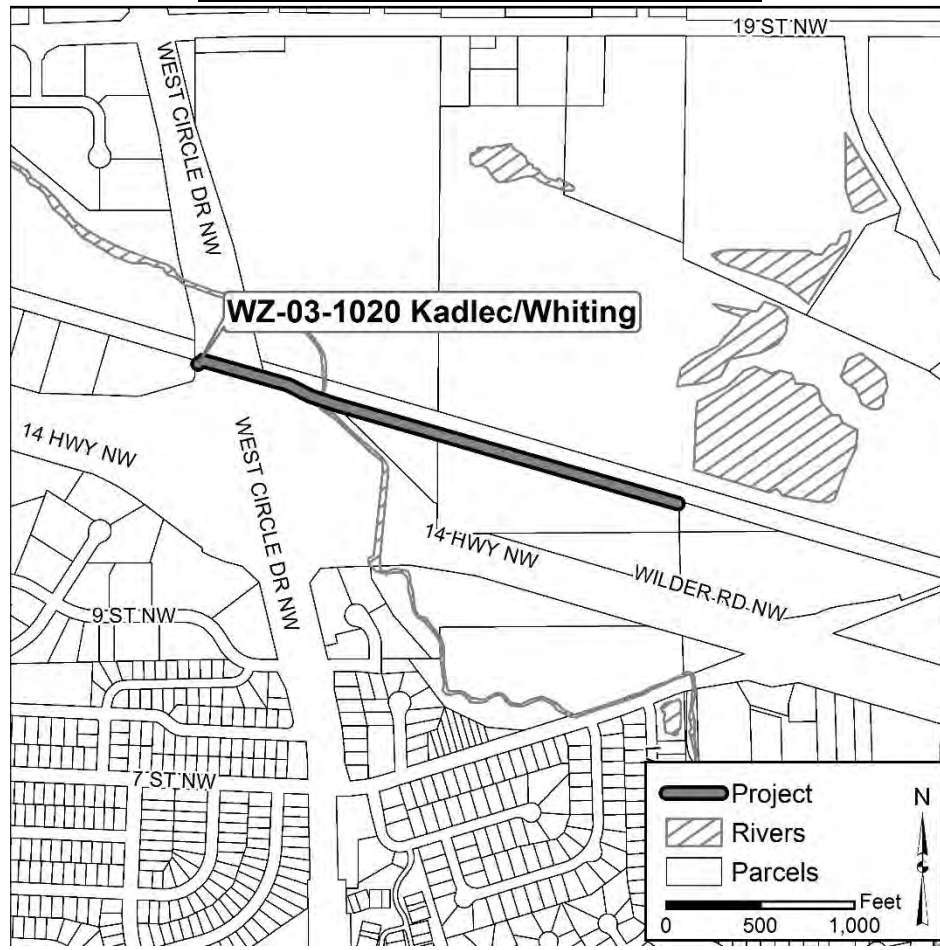
pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	3216																								
Pipe Size	36																								
# of MH	10																								
New Manhole Size	84																								
Bypass Flow (MGD)	1.7																								
Major Impacts? (1 or 0)																									
	<table border="1"> <tr> <td>Rdwy Alignment</td> <td>0</td> <td>LF:</td> <td></td> </tr> <tr> <td>HWY XING</td> <td>1</td> <td>LF:</td> <td>120</td> </tr> <tr> <td>RR XING</td> <td>0</td> <td>LF:</td> <td></td> </tr> <tr> <td>Stream XING</td> <td>0</td> <td>LF:</td> <td></td> </tr> <tr> <td>Rock Excavation</td> <td>0</td> <td>LF:</td> <td>0</td> </tr> <tr> <td>Dewatering</td> <td>1</td> <td>LF:</td> <td>1608</td> </tr> </table>	Rdwy Alignment	0	LF:		HWY XING	1	LF:	120	RR XING	0	LF:		Stream XING	0	LF:		Rock Excavation	0	LF:	0	Dewatering	1	LF:	1608
Rdwy Alignment	0	LF:																							
HWY XING	1	LF:	120																						
RR XING	0	LF:																							
Stream XING	0	LF:																							
Rock Excavation	0	LF:	0																						
Dewatering	1	LF:	1608																						

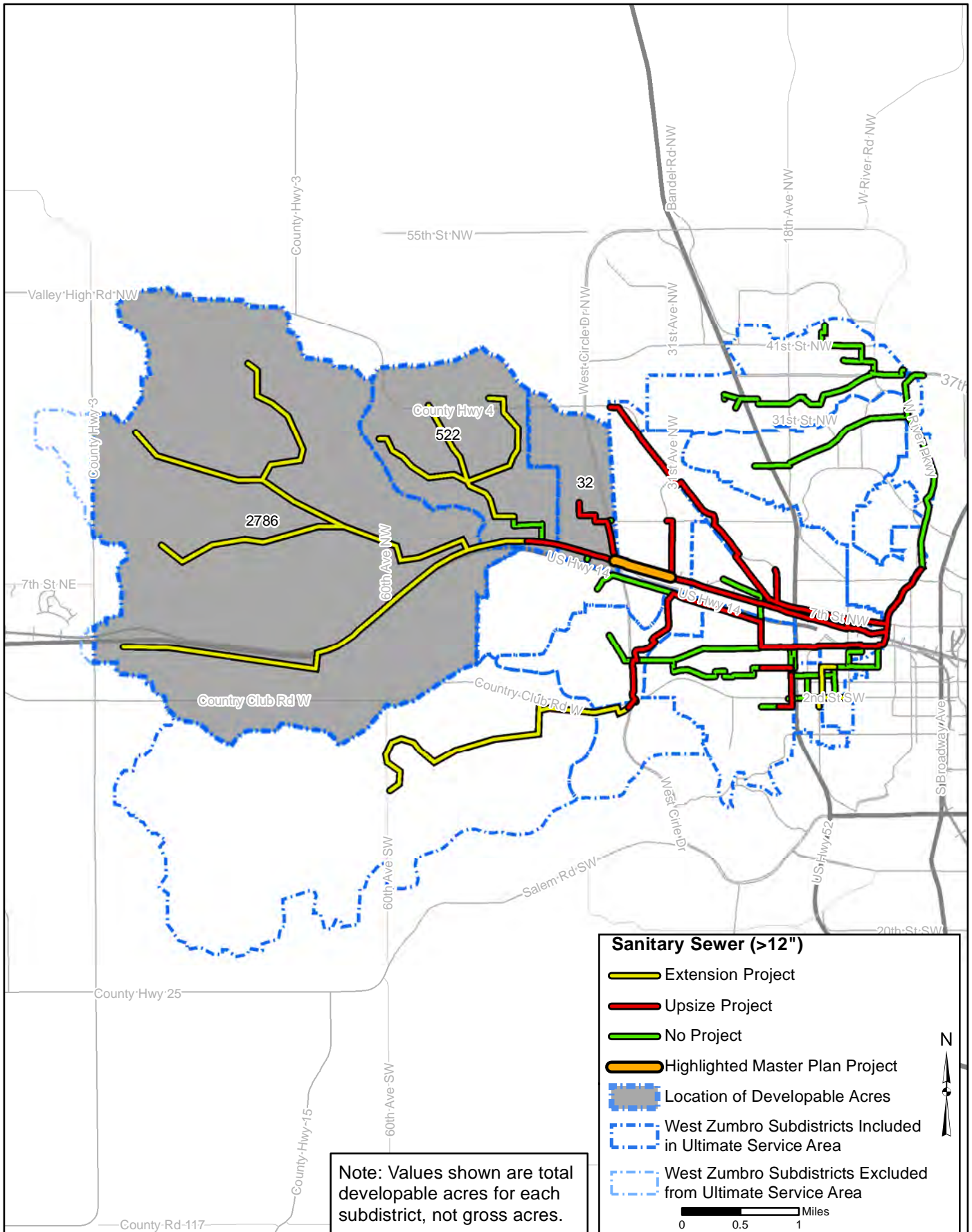
Width (ft)
 Driveways (#)
 Drvwy Width (ft)
 ROW (ft)
 Curb and Gutter?
 Sidewalk Length
 Bike Path Width

5 ft Width
 60 ft disturbance

WZ-03-1020 Kadlec/Whiting



Description:	Kadlec/Whiting (Master Plan Project Number WZ-03-1020) runs along the north side of US Highway 14. The project consists of upsizing the existing pipe or adding a parallel pipe. This project addresses condition issues throughout the pipe segment. Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.		
Pipe Segment(s):	From: MH 03/0112	To: MH 03/0144	
Length:	2,700	Linear Feet	
Preliminary Project Cost:	\$ 2,889,000	Sanitary Sewer Cost:	\$ 1,866,000
Capacity:	Existing: 4.15 MGD	Future:	17.5 MGD
SSO/BBs Avoided:	0		
Additional Acres-			
Existing Available Acres in Pipe:	906	Acres	
Acres Gained with Upstream & Downstream Projects Completed:	2,523	Acres	
Total Upstream Developable Acres:	3,428	Acres	
Restrictions to Total Upstream Developable Acres -			
Acres Gained by this Project Alone:	0	Acres at 1045	
Acres Gained with Downstream Improvements Completed:	148	Acres at 1019	
Downstream Projects:	4 Projects (1021, 1022, 1045, 1042)		
Upstream Projects:	1 Projects (1019)		
Recovery Rate:	\$ 216,729 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Note: Values shown are total developable acres for each subdistrict, not gross acres.

Sanitary Sewer (>12")

- Extension Project
- Upsize Project
- No Project
- Highlighted Master Plan Project
- Location of Developable Acres
- West Zumbro Subdistricts Included in Ultimate Service Area
- West Zumbro Subdistricts Excluded from Ultimate Service Area

0 0.5 1 Miles

Preliminary Cost Opinion for Pipe Segment "WZ-03-1020 Kadlec/Whiting"

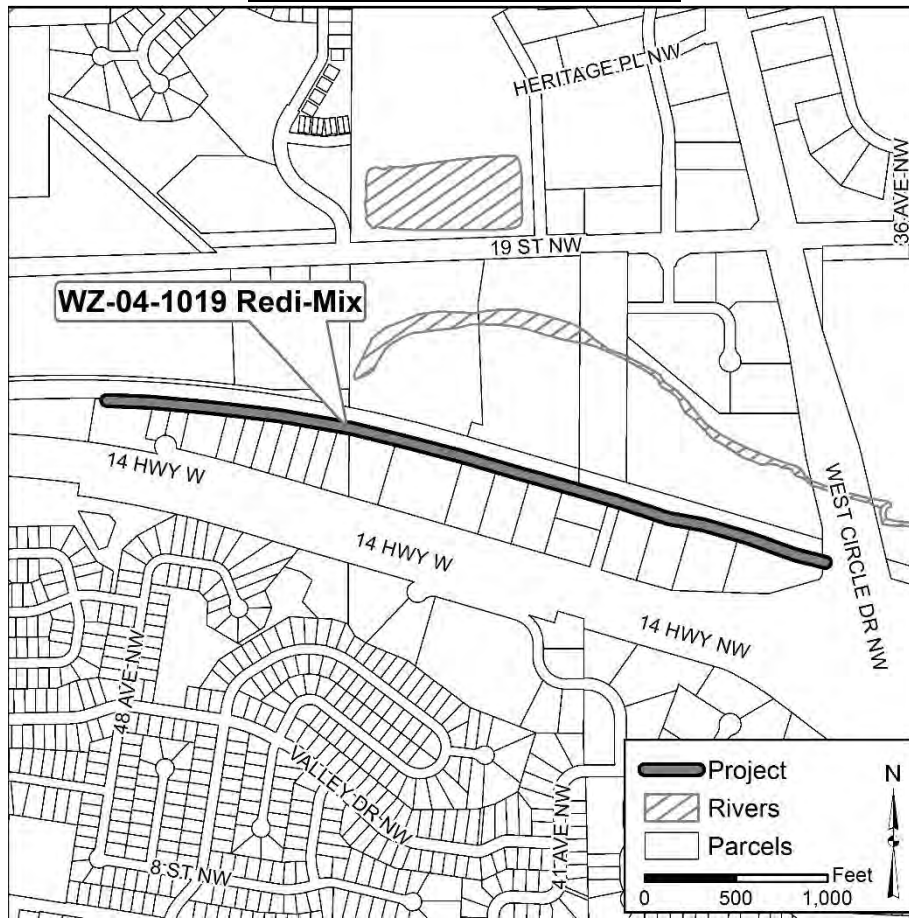
Rate Table						Trenchless	Open Cut
Pipe Dia. & Material	F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.	Steel Casing Hwy & RR	Streams	
12 PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15 PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18 PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21 PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24 PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27 PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30 PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36 Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42 Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48 Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54 Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60 Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66 Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

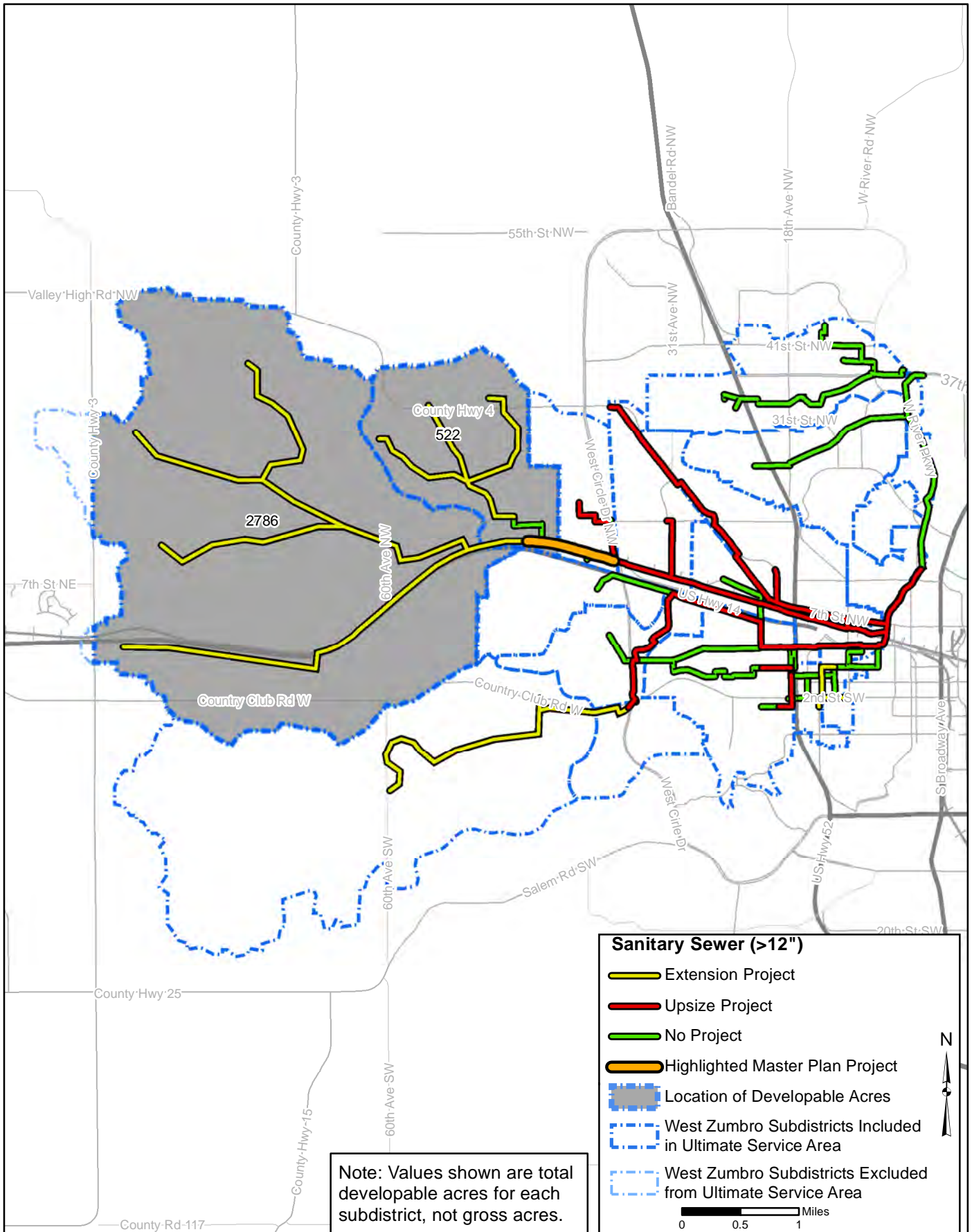
Linear Feet	2672		
Pipe Size	36		
# of MH	9		
New Manhole Size	84		
Bypass Flow (MGD)	1.2		
Major Impacts? (1 or 0)			
Rdwy Alignment	0	LF:	700
HWY XING	1	LF:	450
RR XING	0	LF:	
Stream XING	1	LF:	30
Rock Excavation	0	LF:	0
Dewatering	1	LF:	1336

Width (ft) 50 PARKING LOT
 Driveways (#)
 Drvwy Width (ft)
 ROW (ft)
 Curb and Gutter?
 Sidewalk Length 5 ft Width
 Bike Path Width 60 ft disturbance

WZ-04-1019 Redi-Mix










Description:	Redi-Mix (Master Plan Project Number WZ-04-1019) runs along the north side of US Highway 14. The project consists of upsizing the existing pipe or adding a parallel pipe. This project addresses condition issues throughout the pipe segment. Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.		
Pipe Segment(s):	From: MH 03/H268	To: MH 03/0112	
Length:	4,100	Linear Feet	
Preliminary Project Cost:	\$ 2,506,000	Sanitary Sewer Cost:	\$ 1,535,000
Capacity:	Existing: 4.0 MGD	Future:	21.7 MGD
SSO/BBs Avoided:	0		
Additional Acres-			
Existing Available Acres in Pipe:	1,054	Acres	
Acres Gained with Upstream & Downstream Projects Completed:	2,343	Acres	
Total Upstream Developable Acres:	3,397	Acres	
Restrictions to Total Upstream Developable Acres -			
Acres Gained by this Project Alone:	0	Acres at 1045	
Acres Gained with Downstream Improvements Completed:	2,343	Upstream Developable Acres	
Downstream Projects:	4 Projects (1020, 1021, 1022, 1045, 1042)		
Upstream Projects:	No Proposed Master Plan Projects		
Recovery Rate:	\$ 141,263 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Note: Values shown are total developable acres for each subdistrict, not gross acres.

Sanitary Sewer (>12")

-  Extension Project
-  Upsize Project
-  No Project
-  Highlighted Master Plan Project
-  Location of Developable Acres
-  West Zumbro Subdistricts Included in Ultimate Service Area
-  West Zumbro Subdistricts Excluded from Ultimate Service Area

0 0.5 1 Miles



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**Location of Developable Acres
for Highlighted Project:
WZ-04-1019 Redi-Mix**



Preliminary Cost Opinion for Pipe Segment "WZ-04-1019 Redi-Mix"				
Grading and Base				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Mobilization	Lump Sum	\$ 90,000	1	\$ 90,000
Traffic Control	Lump Sum	\$ 18,000	1	\$ 18,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	4400	\$ 22,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	2200	\$ 13,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	1000	\$ 32,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	700	\$ 22,000
Bituminous Paving	Ton	\$ 80	1000	\$ 80,000
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	4100	\$ 21,000
Sod	Lin. Ft.	\$ 27	2000	\$ 54,000
Seed & Mulch	Lin. Ft.	\$ 3	2000	\$ 6,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 363,000
Sanitary Sewer				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Remove Sanitary Sewer Manholes	Each	\$ 1,000	16	\$ 16,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	4100	\$ 41,000
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	4100	\$ 1,025,000
Construct 84" Manhole	Each	\$ 12,000	16	\$ 192,000
Manhole Waterproofing	Each	\$ 1,000	16	\$ 16,000
Bypass Pumping	MGD	\$ 10,000	0.5	\$ 5,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	2000	\$ 40,000
Highway Crossing	Lin. Ft.	\$ 2,000	100	\$ 200,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 1,535,000
Total Grading & Base & Sewer				\$ 1,898,000
10% Contingency				\$ 190,000
Sub-total				\$ 2,088,000
12% Engineering				\$ 251,000
8% Administrative				\$ 167,000
Probable Cost Opinion				\$ 2,506,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. / acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-04-1019 Redi-Mix"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

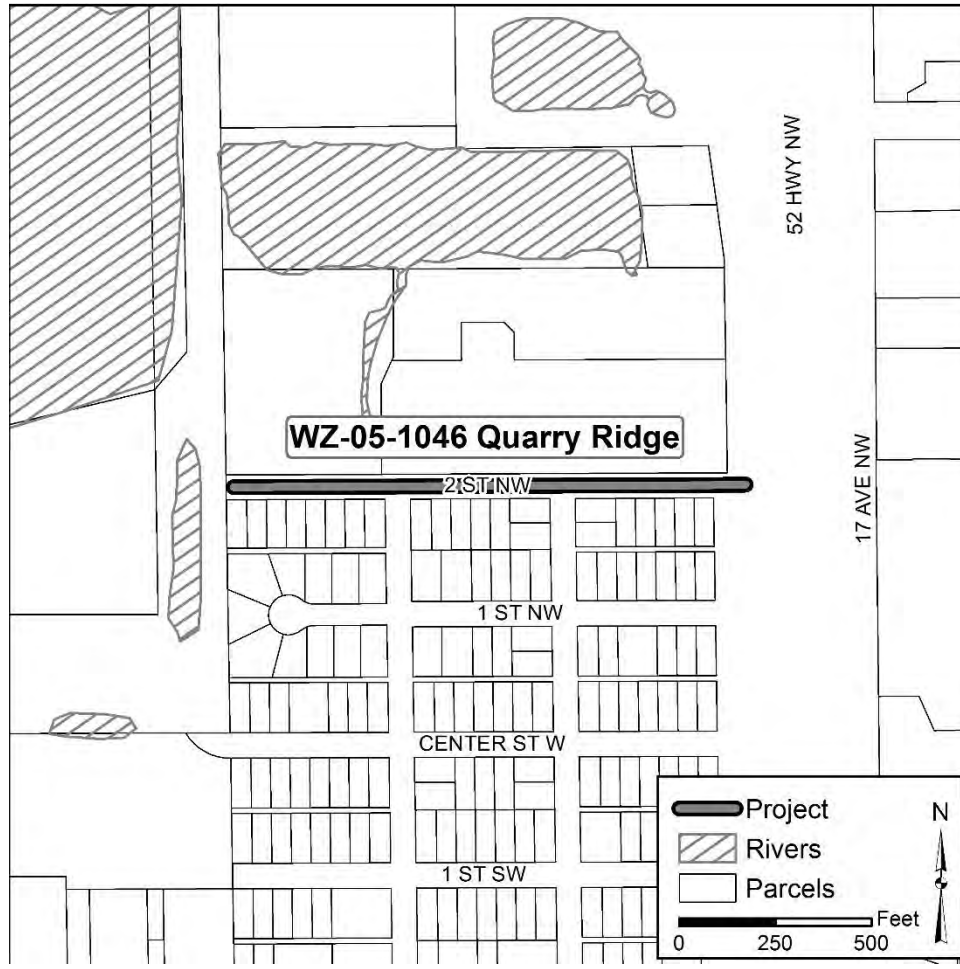
pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	4051
Pipe Size	36
# of MH	16
New Manhole Size	84
Bypass Flow (MGD)	0.5
Major Impacts? (1 or 0)	

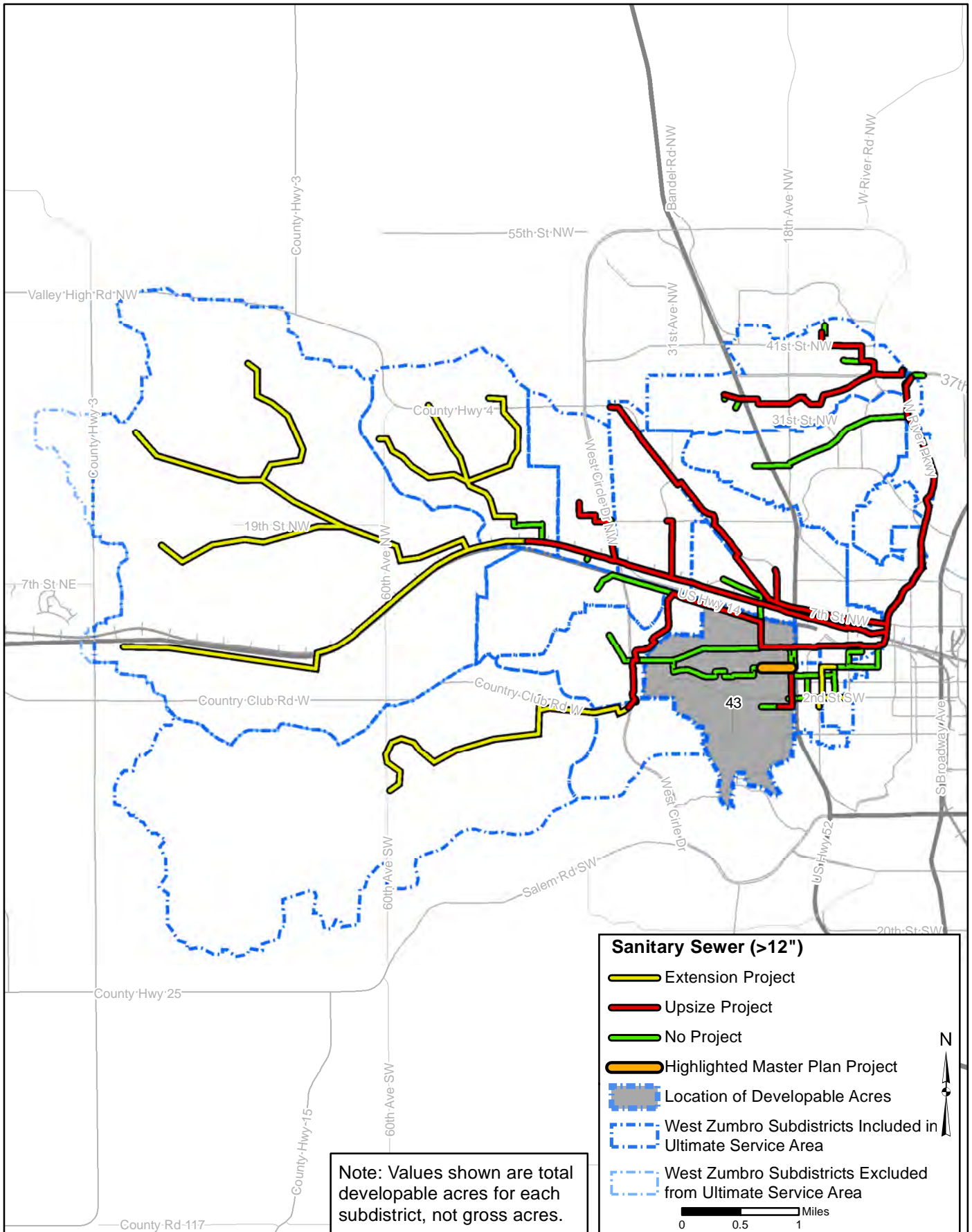
Rdwy Alignment	1	LF:	800
HWY XING	1	LF:	50
RR XING	0	LF:	
Stream XING	0	LF:	
Rock Excavation	0	LF:	0
Dewatering	1	LF:	2026

Width (ft) 50 PARKING LOT
 Driveways (#)
 Drvwy Width (ft)
 ROW (ft)
 Curb and Gutter?
 Sidewalk Length 5 ft Width
 Bike Path Width 60 ft disturbance

WZ-05-1046 Quarry Ridge



Description:		Quarry Ridge (Master Plan Project Number WZ-05-1046) runs along 2nd St NW. The project consists of upsizing the existing pipe or adding a parallel pipe. This project will reduce SSO and basement backup risks as well as address condition issues in the pipe.	
Pipe Segment(s):	From:	MH 78/0365	To: MH 78/0336
Length:	1,300	Linear Feet	
Preliminary Project Cost:	\$ 711,000	Sanitary Sewer Cost:	\$192,000
Capacity:	Existing:	1.1 MGD	Future: 3.2 MGD
SSO/BBs Avoided:	30		
Downstream Projects:	No Proposed Master Plan Projects		
Upstream Projects:	No Proposed Master Plan Projects		
Recovery Rate:	\$ 332,243 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

Location of Developable Acres
for Highlighted Project:
WZ-05-1046 Quarry Ridge



Preliminary Cost Opinion for Pipe Segment "WZ-05-1046 Quarry Ridge"					
Grading and Base					
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>	
Mobilization	Lump Sum	\$ 30,000	1	\$ 30,000	5% of project cost, rounded to nearest \$10,000
Traffic Control	Lump Sum	\$ 5,000	1	\$ 5,000	1% of project cost, rounded to nearest \$1,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	4400	\$ 22,000	Set rate
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -	Set rate
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	1300	\$ 10,000	Set rate
Remove Concrete Walk	Sq. Yd.	\$ 4	1000	\$ 4,000	Set rate
Common Excavation	Cu. Yd.	\$ 6	2200	\$ 13,000	Set rate
Aggregate Base (CV)	Cu. Yd.	\$ 32	1000	\$ 32,000	Set rate
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	700	\$ 22,000	Set rate
Bituminous Paving	Ton	\$ 80	1000	\$ 80,000	Set rate
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -	Set rate
Concrete Curb & Gutter	Lin. Ft.	\$ 18	1300	\$ 23,000	Set rate
Concrete Walk	Sq. Ft.	\$ 6	9200	\$ 55,000	Set rate
Concrete Driveway	Sq. Yd.	\$ 60	300	\$ 18,000	Set rate
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -	Set rate
Erosion Control	Lin. Ft.	\$ 5	1300	\$ 7,000	Set rate
Sod	Lin. Ft.	\$ 27	700	\$ 19,000	40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.
Seed & Mulch	Lin. Ft.	\$ 3	700	\$ 2,000	40' width / 43,560 sq. ft. /acre x \$2,000/acre
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000	Set rate
				Grading & Base	\$ 347,000
Sanitary Sewer					
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>	
Remove Sanitary Sewer Manholes	Each	\$ 1,000	6	\$ 6,000	Set rate
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	1300	\$ 13,000	Set rate
Construct 18" Sanitary Sewer Pipe	Lin. Ft.	\$ 75	1300	\$ 98,000	Based on rate table
Construct 48" Manhole	Each	\$ 6,000	6	\$ 36,000	Based on rate table
Manhole Waterproofing	Each	\$ 1,000	6	\$ 6,000	Set rate
Bypass Pumping	MGD	\$ 10,000	1.25	\$ 13,000	Set rate
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Dewatering	Lin. Ft.	\$ 20	1000	\$ 20,000	Set rate
Highway Crossing	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -	Use separate probable cost spreadsheet
				Sanitary Sewer	\$ 192,000
				Total Grading & Base & Sewer	\$ 539,000
				10% Contingency	\$ 54,000
				Sub-total	\$ 593,000
				12% Engineering	\$ 71,000
				8% Administrative	\$ 47,000
				Probable Cost Opinion	\$ 711,000

Preliminary Cost Opinion for Pipe Segment "WZ-05-1046 Quarry Ridge"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

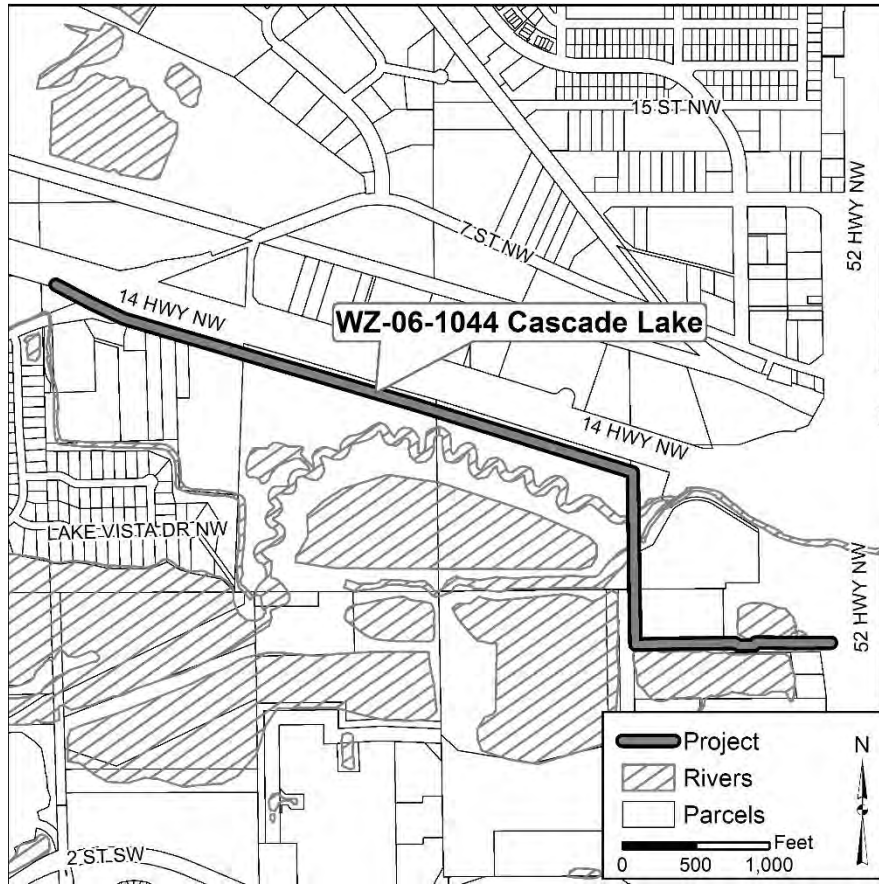
pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	1332
Pipe Size	18
# of MH	6
New Manhole Size	48
Bypass Flow (MGD)	1.25
Major Impacts? (1 or 0)	

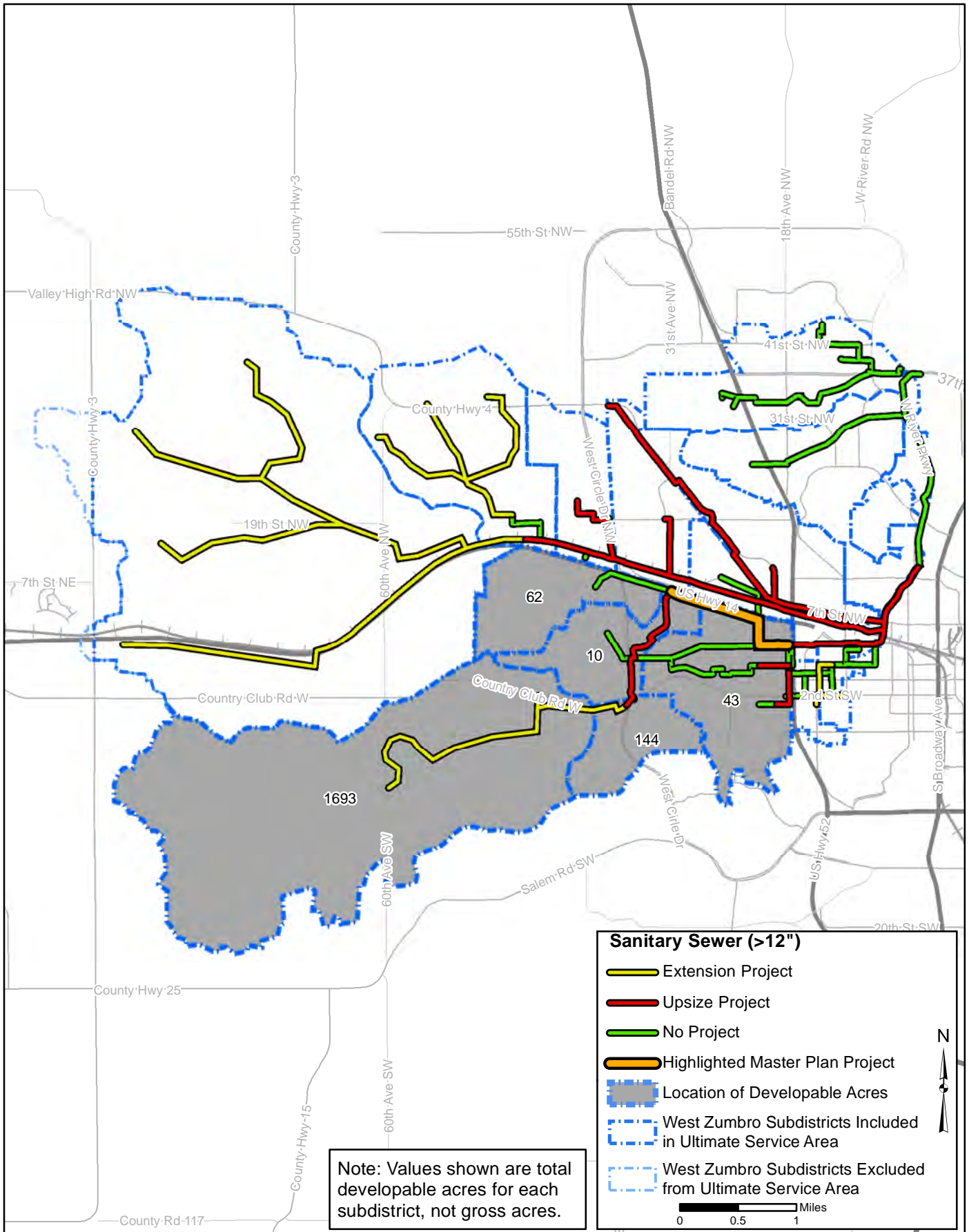
Rdwy Alignment	1	LF:	1332
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	1	LF:	999

Width (ft)	30
Driveways (#)	16
Drwy Width (ft)	15
ROW (ft)	65
Curb and Gutter?	1332
Sidewalk Length	1832 5 ft Width
Bike Path Width	0 60 ft disturbance

WZ-06-1044 Cascade Lake



Description:	<p>Cascade Lake (Master Plan Project Number WZ-06-1044) runs along the south side of US Highway 14. The project consists of upsizing the existing pipe or adding a parallel pipe. This project has a large impact on future growth and supports development of the area South of Highway 14. This project will also reduce SSO and basement backup risks as well as address condition issues in the pipe.</p> <p>Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.</p>		
Pipe Segment(s):	From: MH 78/0135	To: MH 78/0273	
Length:	6,700	Linear Feet	
Preliminary Project Cost:	\$ 3,912,000	Sanitary Sewer Cost:	\$ 2,647,000
Capacity:	Existing: 4.7 MGD	Future:	16.9 MGD
SSO/BBs Avoided:	13		
Additional Acres-			
Existing Available Acres in Pipe:	105	Acres	
Acres Gained with Upstream & Downstream Projects Completed:	1,847	Acres	
Total Upstream Developable Acres:	1,952	Acres	
Restrictions to Total Upstream Developable Acres -			
Acres Gained by this Project Alone:	218	Acres at 1011	
Acres Gained with Downstream Improvements Completed:	218	Acres at 1011	
Downstream Projects:	4 Projects (1097, 1062, 1045, 1042)		
Upstream Projects:	2 Projects (1051, 1011)		
Recovery Rate:	\$ 319,347 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

Location of Developable Acres
for Highlighted Project:
WZ-06-1044 Cascade Lake



Preliminary Cost Opinion for Pipe Segment "WZ-06-1044 Cascade Lake"				
Grading and Base				
Item	Unit	Unit Price	Quantity	Amount
Mobilization	Lump Sum	\$ 140,000	1	\$ 140,000
Traffic Control	Lump Sum	\$ 28,000	1	\$ 28,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	0	\$ -
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	0	\$ -
Aggregate Base (CV)	Cu. Yd.	\$ 32	0	\$ -
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	0	\$ -
Bituminous Paving	Ton	\$ 80	0	\$ -
Bike Path Restoration	Sq. Yd.	\$ 50	100	\$ 5,000
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	100	\$ 6,000
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	6700	\$ 34,000
Sod	Lin. Ft.	\$ 27	3300	\$ 89,000
Seed & Mulch	Lin Ft.	\$ 3	3300	\$ 10,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 317,000
Sanitary Sewer				
Item	Unit	Unit Price	Quantity	Amount
Remove Sanitary Sewer Manholes	Each	\$ 1,000	23	\$ 23,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	6700	\$ 67,000
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	6700	\$ 1,675,000
Construct 84" Manhole	Each	\$ 12,000	23	\$ 276,000
Manhole Waterproofing	Each	\$ 1,000	23	\$ 23,000
Bypass Pumping	MGD	\$ 10,000	4.3	\$ 43,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	5000	\$ 100,000
Highway Crossing	Lin. Ft.	\$ 2,000	100	\$ 200,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ 1,200	200	\$ 240,000
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 2,647,000
Total Grading & Base & Sewer				\$ 2,964,000
10% Contingency				\$ 296,000
Sub-total				\$ 3,260,000
12% Engineering				\$ 391,000
8% Administrative				\$ 261,000
Probable Cost Opinion				\$ 3,912,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-06-1044 Cascade Lake"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

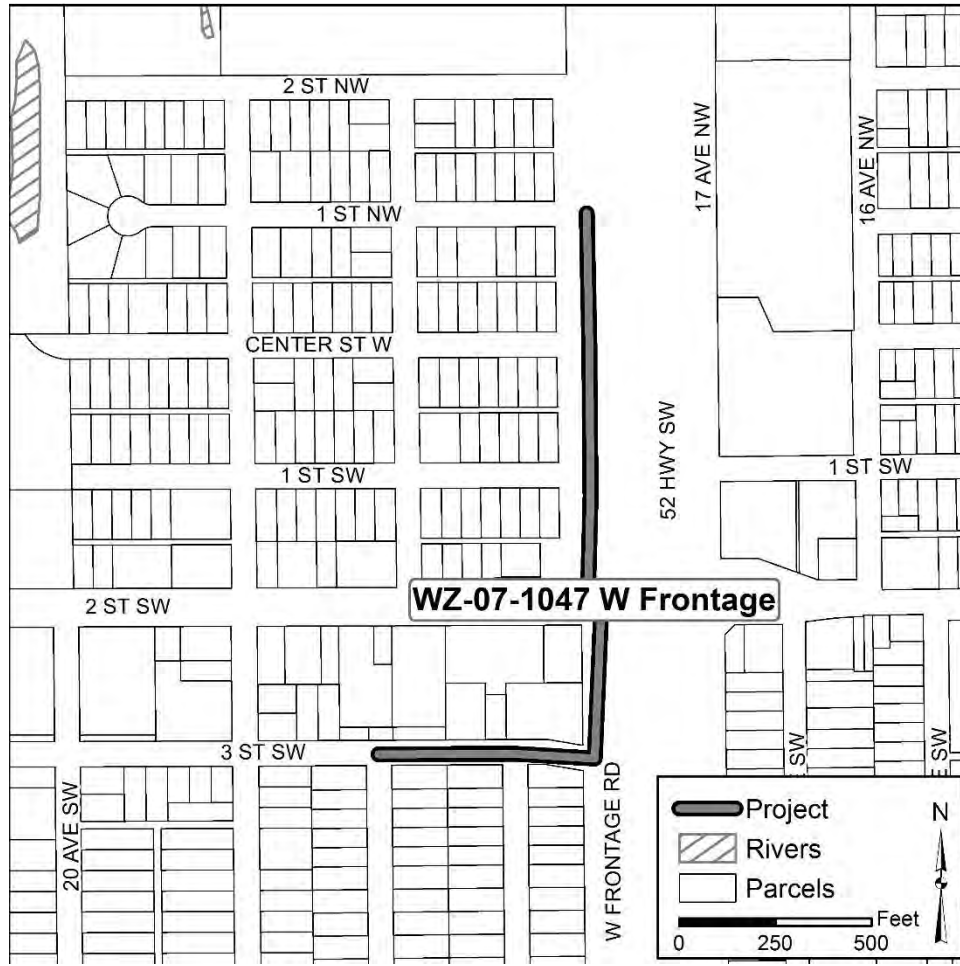
pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	6658
Pipe Size	36
# of MH	23
New Manhole Size	84
Bypass Flow (MGD)	4.3
Major Impacts? (1 or 0)	

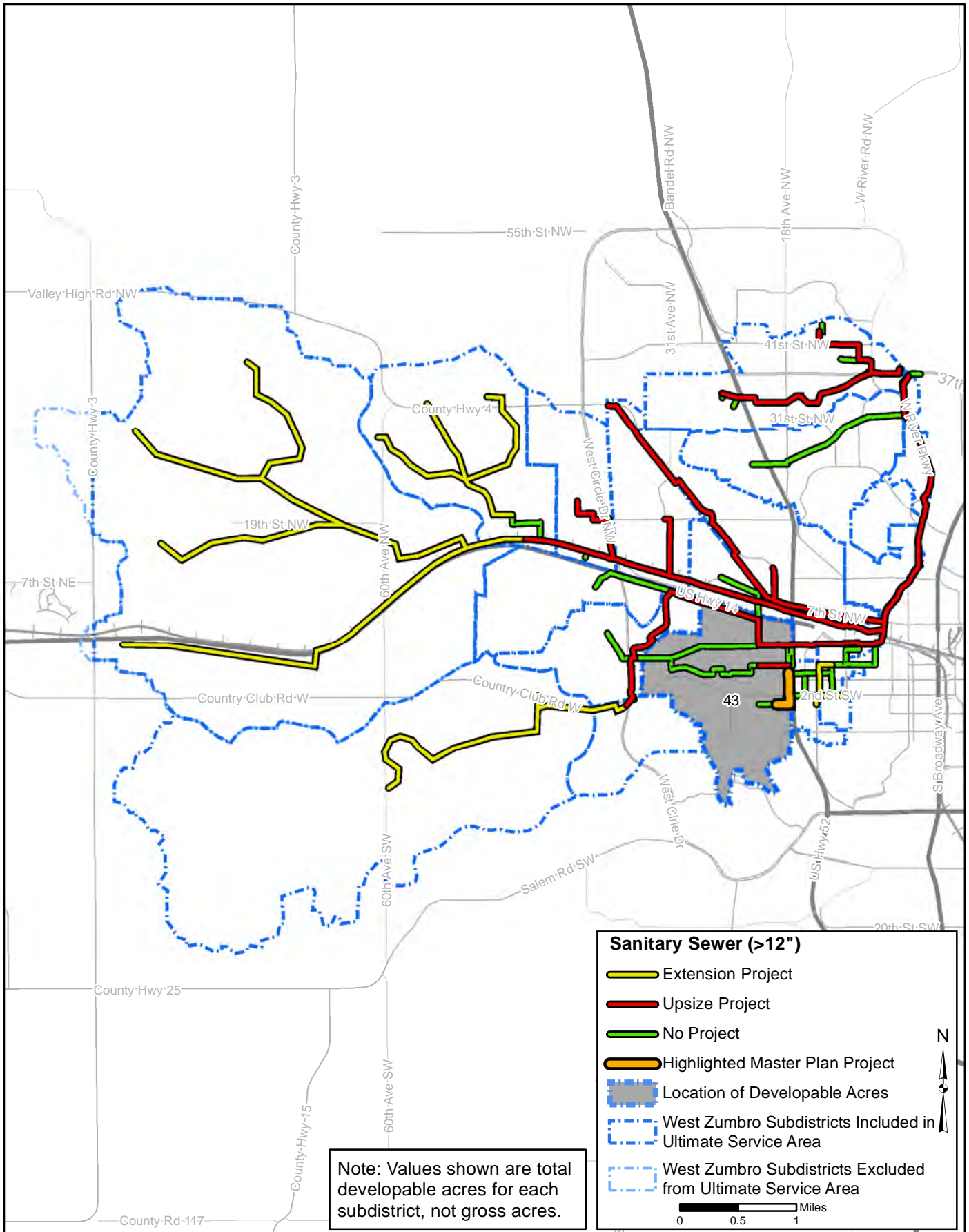
Rdwy Alignment	0	LF:	0
HWY XING	1	LF:	100
RR XING	0	LF:	0
Stream XING	1	LF:	175
Rock Excavation	0	LF:	0
Dewatering	1	LF:	4993

Width (ft)
 Driveways (#) 4
 Drvwy Width (ft) 12
 ROW (ft)
 Curb and Gutter?
 Sidewalk Length 5 ft Width
 Bike Path Width 20 60 ft disturbance

WZ-07-1047 W Frontage Road



Description:	W Frontage Road (Master Plan Project Number WZ-07-1047) runs along 3rd St NW and the frontage road for US Highway 52. The project consists of upsizing the existing pipe or adding a parallel pipe. This project will reduce SSO and basement backup risks as well as address condition issues in the pipe.		
Pipe Segment(s):	From:	MH 83/0119	To: MH 78/0361
Length:	2,000	Linear Feet	
Preliminary Project Cost:	\$ 729,000	Sanitary Sewer Cost:	\$ 272,000
Capacity:	Existing:	0.8 MGD	Future: 1.7 MGD
SSO/BBs Avoided:	35		
Downstream Projects:	No Proposed Master Plan Projects		
Upstream Projects:	No Proposed Master Plan Projects		
Recovery Rate:	\$ 857,647 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Note: Values shown are total developable acres for each subdistrict, not gross acres.

Sanitary Sewer (>12")

- Extension Project
- Upsize Project
- No Project
- Highlighted Master Plan Project
- Location of Developable Acres
- West Zumbro Subdistricts Included in Ultimate Service Area
- West Zumbro Subdistricts Excluded from Ultimate Service Area

0 0.5 1 Miles



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

**Location of Developable Acres
for Highlighted Project:
WZ-07-1047 W Frontage Road**



Preliminary Cost Opinion for Pipe Segment "WZ-07-1047 W Frontage Rd"				
Grading and Base				
Item	Unit	Unit Price	Quantity	Amount
Mobilization	Lump Sum	\$ 30,000	1	\$ 30,000
Traffic Control	Lump Sum	\$ 5,000	1	\$ 5,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	3900	\$ 20,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	700	\$ 6,000
Remove Concrete Walk	Sq. Yd.	\$ 4	600	\$ 2,000
Common Excavation	Cu. Yd.	\$ 6	1900	\$ 11,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	900	\$ 29,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	600	\$ 19,000
Bituminous Paving	Ton	\$ 80	800	\$ 64,000
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	700	\$ 13,000
Concrete Walk	Sq. Ft.	\$ 6	5000	\$ 30,000
Concrete Driveway	Sq. Yd.	\$ 60	100	\$ 6,000
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	2000	\$ 10,000
Sod	Lin. Ft.	\$ 27	1000	\$ 27,000
Seed & Mulch	Lin. Ft.	\$ 3	1000	\$ 3,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 280,000
Sanitary Sewer				
Item	Unit	Unit Price	Quantity	Amount
Remove Sanitary Sewer Manholes	Each	\$ 1,000	8	\$ 8,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	2000	\$ 20,000
Construct 12" Sanitary Sewer Pipe	Lin. Ft.	\$ 55	2000	\$ 110,000
Construct 48" Manhole	Each	\$ 6,000	8	\$ 48,000
Manhole Waterproofing	Each	\$ 1,000	8	\$ 8,000
Bypass Pumping	MGD	\$ 10,000	0.8	\$ 8,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	1000	\$ 20,000
Highway Crossing	Lin. Ft.	\$ 250	200	\$ 50,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 272,000
Total Grading & Base & Sewer				\$ 552,000
10% Contingency				\$ 55,000
Sub-total				\$ 607,000
12% Engineering				\$ 73,000
8% Administrative				\$ 49,000
Probable Cost Opinion				\$ 729,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-07-1047 W Frontage Rd"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	1987
Pipe Size	12
# of MH	8
New Manhole Size	48
Bypass Flow (MGD)	0.8
Major Impacts? (1 or 0)	

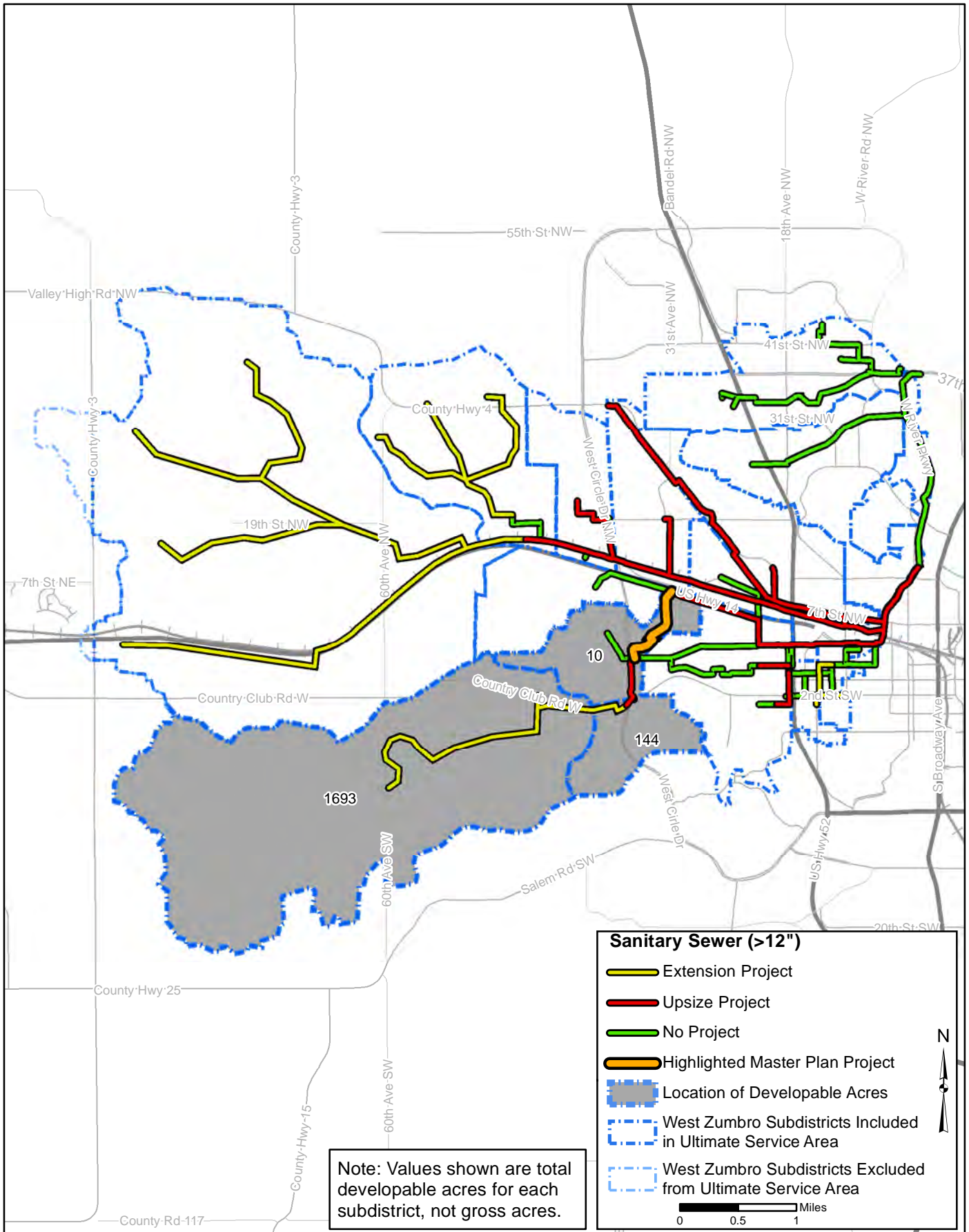
Rdwy Alignment	1	LF:	1400
HWY XING	1	LF:	200
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	1	LF:	994

Width (ft)	25
Driveways (#)	4
Drvwy Width (ft)	15
ROW (ft)	65
Curb and Gutter?	700
Sidewalk Length	1000 5 ft Width
Bike Path Width	0 60 ft disturbance

WZ-08-1051 Country Club Manor



Description:	Country Club Manor (Master Plan Project Number WZ-08-1051) runs along Lake St NW. The project consists of upsizing the existing pipe or adding a parallel pipe. This project will reduce SSO and basement backup risks throughout the pipe. Elevation of trunk projects are laid out to provide 8-ft minimum cover to extensions. Users should review this assumption is appropriate for future extension areas prior to upsizing existing trunks and adjust elevations and order of projects if needed.		
Pipe Segment(s):	From: MH 78/0250	To: MH 78/0135	
Length:	4,200	Linear Feet	
Preliminary Project Cost:	\$ 2,534,000	Sanitary Sewer Cost:	\$ 1,224,000
Capacity:	Existing: 4.3 MGD	Future:	7.8 MGD
SSO/BBs Avoided:	91		
Additional Acres-			
Existing Available Acres in Pipe:		507	Acres
Acres Gained with Upstream & Downstream Projects Completed:		1,340	Acres
Total Upstream Developable Acres:		1,847	Acres
Restrictions to Total Upstream Developable Acres -			
Acres Gained by this Project Alone:		0	Acres at 1044
Acres Gained with Downstream Improvements Completed:		0	Acres at 1011
Downstream Projects:	5 Projects (1044, 1097, 1062, 1045, 1042)		
Upstream Projects:	1 Projects (1011)		
Recovery Rate:	\$ 721,937 (Project Costs/Capacity Gained)		
Sewer Trunk Rate:	\$ 15,330 (Costs/developable acres for West Zumbro)		



Sanitary Sewer
Wastewater Master Plan
Rochester, MN

Location of Developable Acres
for Highlighted Project:
WZ-08-1051 Country Club Manor



Preliminary Cost Opinion for Pipe Segment "WZ-08-1051 Country Club Manor"				
Grading and Base				
Item	Unit	Unit Price	Quantity	Amount
Mobilization	Lump Sum	\$ 90,000	1	\$ 90,000
Traffic Control	Lump Sum	\$ 18,000	1	\$ 18,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	7300	\$ 37,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	2000	\$ 16,000
Remove Concrete Walk	Sq. Yd.	\$ 4	2200	\$ 9,000
Common Excavation	Cu. Yd.	\$ 6	3700	\$ 22,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	1600	\$ 51,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	1200	\$ 38,000
Bituminous Paving	Ton	\$ 80	1600	\$ 128,000
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	2000	\$ 36,000
Concrete Walk	Sq. Ft.	\$ 6	20000	\$ 120,000
Concrete Driveway	Sq. Yd.	\$ 60	700	\$ 42,000
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	4200	\$ 21,000
Sod	Lin. Ft.	\$ 27	2100	\$ 57,000
Seed & Mulch	Lin. Ft.	\$ 3	2100	\$ 6,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 696,000
Sanitary Sewer				
Item	Unit	Unit Price	Quantity	Amount
Remove Sanitary Sewer Manholes	Each	\$ 1,000	21	\$ 21,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	4200	\$ 42,000
Construct 30" Sanitary Sewer Pipe	Lin. Ft.	\$ 200	4200	\$ 840,000
Construct 72" Manhole	Each	\$ 10,000	21	\$ 210,000
Manhole Waterproofing	Each	\$ 1,000	21	\$ 21,000
Bypass Pumping	MGD	\$ 10,000	2.6	\$ 26,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	3200	\$ 64,000
Highway Crossing	Lin. Ft.	\$ -	0	\$ -
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 1,224,000
Total Grading & Base & Sewer				\$ 1,920,000
10% Contingency				\$ 192,000
Sub-total				\$ 2,112,000
12% Engineering				\$ 253,000
8% Administrative				\$ 169,000
Probable Cost Opinion				\$ 2,534,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-08-1051 Country Club Manor"

Rate Table						Trenchless	Open Cut
Pipe Dia. & Material	F&I Cost	Manhole Dia/ F&I Cost	Rock Exc.	Steel Casing Hwy & RR			Streams
12 PVC	\$ 55	48 \$ 6,000	\$ 80	\$ 250		\$ 300	
15 PVC	\$ 65	48 \$ 6,000	\$ 85	\$ 500		\$ 400	
18 PVC	\$ 75	48 \$ 6,000	\$ 90	\$ 750		\$ 500	
21 PVC	\$ 100	60 \$ 8,000	\$ 95	\$ 1,000		\$ 600	
24 PVC	\$ 150	60 \$ 8,000	\$ 105	\$ 1,250		\$ 700	
27 PVC	\$ 175	60 \$ 8,000	\$ 110	\$ 1,500		\$ 800	
30 PVC	\$ 200	72 \$ 10,000	\$ 120	\$ 1,750		\$ 900	
36 Hobas	\$ 250	84 \$ 12,000	\$ 130	\$ 2,000		\$ 1,200	
42 Hobas	\$ 350	96 \$ 14,000	\$ 145	\$ 2,250		\$ 1,400	
48 Hobas	\$ 400	108 \$ 16,000	\$ 155	\$ 2,500		\$ 1,600	
54 Hobas	\$ 450	108 \$ 16,000	\$ 170	\$ 2,750		\$ 1,800	
60 Hobas	\$ 500	120 \$ 18,000	\$ 180	\$ 3,000		\$ 2,000	
66 Hobas	\$ 550	120 \$ 18,000	\$ 195	\$ 3,250		\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	4215
Pipe Size	30
# of MH	21
New Manhole Size	72
Bypass Flow (MGD)	2.6
Major Impacts? (1 or 0)	

Rdwy Alignment	1	LF:	2200
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	1	LF:	3161

Width (ft)	30
Driveways (#)	40
Drwy Width (ft)	20
ROW (ft)	55
Curb and Gutter?	2000
Sidewalk Length	4000 5 ft Width
Bike Path Width	0 60 ft disturbance

COST OPINIONS FOR PRIORITY 2 PROJECTS

Preliminary Cost Opinion for Pipe Segment "WZ-10-1062 Cooke Park E"				
Grading and Base				
Item	Unit	Unit Price	Quantity	Amount
Mobilization	Lump Sum	\$ 40,000	1	\$ 40,000
Traffic Control	Lump Sum	\$ 9,000	1	\$ 9,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	3100	\$ 16,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	300	\$ 2,000
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	1600	\$ 10,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	700	\$ 22,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	500	\$ 16,000
Bituminous Paving	Ton	\$ 80	700	\$ 56,000
Bike Path Restoration	Sq. Yd.	\$ 50	1500	\$ 75,000
Concrete Curb & Gutter	Lin. Ft.	\$ 18	300	\$ 5,000
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	900	\$ 5,000
Sod	Lin. Ft.	\$ 27	500	\$ 14,000
Seed & Mulch	Lin. Ft.	\$ 3	500	\$ 2,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 277,000
Sanitary Sewer				
Item	Unit	Unit Price	Quantity	Amount
Remove Sanitary Sewer Manholes	Each	\$ 1,000	8	\$ 8,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	900	\$ 9,000
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	900	\$ 225,000
Construct 84" Manhole	Each	\$ 12,000	8	\$ 96,000
Manhole Waterproofing	Each	\$ 1,000	8	\$ 8,000
Bypass Pumping	MGD	\$ 10,000	9.35	\$ 94,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	700	\$ 14,000
Highway Crossing	Lin. Ft.	\$ -	0	\$ -
Railroad Crossing	Lin. Ft.	\$ 2,000	100	\$ 200,000
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 654,000
Total Grading & Base & Sewer				\$ 931,000
10% Contingency				\$ 93,000
Sub-total				\$ 1,024,000
12% Engineering				\$ 123,000
8% Administrative				\$ 82,000
Probable Cost Opinion				\$ 1,229,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-10-1062 Cooke Park E"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	915
Pipe Size	36
# of MH	8
New Manhole Size	84
Bypass Flow (MGD)	9.35
Major Impacts? (1 or 0)	

Rdwy Alignment	1	LF:	350
HWY XING	0	LF:	0
RR XING	1	LF:	100
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	1	LF:	686

Width (ft)	80
Driveways (#)	0
Drvwy Width (ft)	0
ROW (ft)	150
Curb and Gutter?	300
Sidewalk Length	0 5 ft Width
Bike Path Width	230 5-10 ft Width

Preliminary Cost Opinion for Pipe Segment "WZ-11-1022 NW Hy-Vee"				
Grading and Base				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Mobilization	Lump Sum	\$ 230,000	1	\$ 230,000
Traffic Control	Lump Sum	\$ 45,000	1	\$ 45,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	0	\$ -
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	0	\$ -
Aggregate Base (CV)	Cu. Yd.	\$ 32	0	\$ -
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	0	\$ -
Bituminous Paving	Ton	\$ 80	0	\$ -
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	6900	\$ 35,000
Sod	Lin. Ft.	\$ 27	3500	\$ 95,000
Seed & Mulch	Lin. Ft.	\$ 3	3500	\$ 11,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 421,000
Sanitary Sewer				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Remove Sanitary Sewer Manholes	Each	\$ 1,000	26	\$ 26,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	6900	\$ 69,000
Construct 42" Sanitary Sewer Pipe	Lin. Ft.	\$ 350	1800	\$ 630,000
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	5200	\$ 1,300,000
Construct 96" Manhole	Each	\$ 14,000	8	\$ 112,000
Construct 84" Manhole	Each	\$ 12,000	18	\$ 216,000
Manhole Waterproofing	Each	\$ 1,000	26	\$ 26,000
Bypass Pumping	MGD	\$ 10,000	7.5	\$ 75,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	3500	\$ 70,000
Highway Crossing	Lin. Ft.	\$ 2,000	600	\$ 1,200,000
Railroad Crossing	Lin. Ft.	\$ 2,250	200	\$ 450,000
Railroad Crossing	Lin. Ft.	\$ 2,000	100	\$ 200,000
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 4,374,000
Total Grading & Base & Sewer				\$ 4,795,000
10% Contingency				\$ 480,000
Sub-total				\$ 5,275,000
12% Engineering				\$ 633,000
8% Administrative				\$ 422,000
Probable Cost Opinion				\$ 6,330,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. / acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-11-1022 NW Hy-Vee"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	1757
Pipe Size	42
# of MH	8
New Manhole Size	96
Bypass Flow (MGD)	7.5
Major Impacts? (1 or 0)	
Rdwy Alignment	0 LF: 0
HWY XING	0 LF: 0
RR XING	1 LF: 150
Stream XING	0 LF: 0
Rock Excavation	0 LF: 0
Dewatering	1 LF: 879

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

5 ft Width
60 ft disturbance

Linear Feet	5163
Pipe Size	36
# of MH	18
New Manhole Size	84
Bypass Flow (MGD)	
Major Impacts? (1 or 0)	
Rdwy Alignment	0 LF: 0
HWY XING	1 LF: 550
RR XING	1 LF: 75
Stream XING	0 LF: 0
Rock Excavation	0 LF: 0
Dewatering	1 LF: 2582

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

5 ft Width
60 ft disturbance

Preliminary Cost Opinion for Pipe Segment "WZ-12-1006 13th Ave Ext"					
Grading and Base					
Item	Unit	Unit Price	Quantity	Amount	
Mobilization	Lump Sum	\$ 80,000	1	\$ 80,000	5% of project cost, rounded to nearest \$10,000
Traffic Control	Lump Sum	\$ 16,000	1	\$ 16,000	1% of project cost, rounded to nearest \$1,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	21500	\$ 108,000	Set rate
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -	Set rate
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	3900	\$ 31,000	Set rate
Remove Concrete Walk	Sq. Yd.	\$ 4	4300	\$ 17,000	Set rate
Common Excavation	Cu. Yd.	\$ 6	10800	\$ 65,000	Set rate
Aggregate Base (CV)	Cu. Yd.	\$ 32	4700	\$ 150,000	Set rate
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	3600	\$ 115,000	Set rate
Bituminous Paving	Ton	\$ 80	4700	\$ 376,000	Set rate
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -	Set rate
Concrete Curb & Gutter	Lin. Ft.	\$ 18	3900	\$ 70,000	Set rate
Concrete Walk	Sq. Ft.	\$ 6	38800	\$ 233,000	Set rate
Concrete Driveway	Sq. Yd.	\$ 60	300	\$ 18,000	Set rate
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -	Set rate
Erosion Control	Lin. Ft.	\$ 5	3900	\$ 20,000	Set rate
Sod	Lin. Ft.	\$ 27	0	\$ -	40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.
Seed & Mulch	Lin. Ft.	\$ 3	3900	\$ 12,000	40' width / 43,560 sq. ft. /acre x \$2,000/acre
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000	Set rate
Grading & Base				\$ 1,316,000	
Sanitary Sewer					
Item	Unit	Unit Price	Quantity	Amount	
Remove Sanitary Sewer Manholes	Each	\$ 1,000	0	\$ -	Set rate
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	0	\$ -	Set rate
Construct 21" Sanitary Sewer Pipe	Lin. Ft.	\$ 100	2000	\$ 200,000	Based on rate table
Construct 18" Sanitary Sewer Pipe	Lin. Ft.	\$ 75	1400	\$ 105,000	Based on rate table
Construct 15" Sanitary Sewer Pipe	Lin. Ft.	\$ 65	100	\$ 7,000	Based on rate table
Construct 8" Sanitary Sewer Pipe	Lin. Ft.	\$ 50	400	\$ 20,000	Based on rate table
Construct 60" Manhole	Each	\$ 8,000	5	\$ 40,000	Based on rate table
Construct 48" Manhole	Each	\$ 6,000	6	\$ 36,000	Based on rate table
Manhole Waterproofing	Each	\$ 1,000	11	\$ 11,000	Set rate
Bypass Pumping	MGD	\$ 10,000	0	\$ -	Set rate
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Dewatering	Lin. Ft.	\$ 20	0	\$ -	Set rate
Highway Crossing	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -	Based on rate table
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -	Use separate probable cost spreadsheet
Sanitary Sewer				\$ 419,000	
Total Grading & Base & Sewer				\$ 1,735,000	
10% Contingency				\$ 174,000	
Sub-total				\$ 1,909,000	
12% Engineering				\$ 229,000	
8% Administrative				\$ 153,000	
Probable Cost Opinion				\$ 2,291,000	

Preliminary Cost Opinion for Pipe Segment "WZ-12-1006 13th Ave Ext"

Pipe Dia. & Material		F&I Cost		inhole Dia/ F&I C		Rock Exc.		Trenchless Steel Casing Hwy & RR		Open Cut Streams	
8	PVC	\$	50								
12	PVC	\$	55	48	\$ 6,000	\$	80	\$	250	\$	300
15	PVC	\$	65	48	\$ 6,000	\$	85	\$	500	\$	400
18	PVC	\$	75	48	\$ 6,000	\$	90	\$	750	\$	500
21	PVC	\$	100	60	\$ 8,000	\$	95	\$	1,000	\$	600
24	PVC	\$	150	60	\$ 8,000	\$	105	\$	1,250	\$	700
27	PVC	\$	175	60	\$ 8,000	\$	110	\$	1,500	\$	800
30	PVC	\$	200	72	\$ 10,000	\$	120	\$	1,750	\$	900
36	Hobas	\$	250	84	\$ 12,000	\$	130	\$	2,000	\$	1,200
42	Hobas	\$	350	96	\$ 14,000	\$	145	\$	2,250	\$	1,400
48	Hobas	\$	400	108	\$ 16,000	\$	155	\$	2,500	\$	1,600
54	Hobas	\$	450	108	\$ 16,000	\$	170	\$	2,750	\$	1,800
60	Hobas	\$	500	120	\$ 18,000	\$	180	\$	3,000	\$	2,000
66	Hobas	\$	550	120	\$ 18,000	\$	195	\$	3,250	\$	2,200

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	1953		
Pipe Size	21		
# of MH	5		
New Manhole Size	60		
Bypass Flow (MGD)	0		
Major Impacts? (1 or 0)			
Rdwy Alignment	1	LF:	1953
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	0	LF:	0

Width (ft) 50
Driveways (#) 30
Drwy Width (ft) 20
ROW (ft) 65
Curb and Gutter? 1953
Sidewalk Length 3906
Bike Path Width 0

Linear Feet	92		
Pipe Size	15		
# of MH	1		
New Manhole Size	48		
Bypass Flow (MGD)			
Major Impacts? (1 or 0)			
Rdwy Alignment	1	LF:	92
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	0	LF:	0

Width (ft) 50
Driveways (#) 0
Drwy Width (ft) 0
ROW (ft) 65
Curb and Gutter? 92
Sidewalk Length 185 5 ft Width
Bike Path Width 0 60 ft disturbance

Linear Feet	1388		
Pipe Size	18		
# of MH	4		
New Manhole Size	48		
Bypass Flow (MGD)			
Major Impacts? (1 or 0)			
Rdwy Alignment	1	LF:	1388
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	0	LF:	0

Width (ft) 50
Driveways (#) 0
Drwy Width (ft) 20
ROW (ft) 65
Curb and Gutter? 1388
Sidewalk Length 2776
Bike Path Width 0

Linear Feet	445		
Pipe Size	8		
# of MH	1		
New Manhole Size	48		
Bypass Flow (MGD)			
Major Impacts? (1 or 0)			
Rdwy Alignment	1	LF:	445
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	0	LF:	0

Width (ft) 50
Driveways (#) 4
Drwy Width (ft) 20
ROW (ft) 65
Curb and Gutter? 445
Sidewalk Length 889 5 ft Width
Bike Path Width 0 60 ft disturbance

Preliminary Cost Opinion for Pipe Segment "WZ-14-1045 Cascade Creek"				
Grading and Base				
Item	Unit	Unit Price	Quantity	Amount
Mobilization	Lump Sum	\$ 230,000	1	\$ 230,000
Traffic Control	Lump Sum	\$ 46,000	1	\$ 46,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	0	\$ -
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	0	\$ -
Aggregate Base (CV)	Cu. Yd.	\$ 32	0	\$ -
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	0	\$ -
Bituminous Paving	Ton	\$ 80	0	\$ -
Bike Path Restoration	Sq. Yd.	\$ 50	17300	\$ 865,000
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	3300	\$ 17,000
Sod	Lin. Ft.	\$ 27	1700	\$ 46,000
Seed & Mulch	Lin. Ft.	\$ 3	1700	\$ 5,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 1,214,000
Sanitary Sewer				
Item	Unit	Unit Price	Quantity	Amount
Remove Sanitary Sewer Manholes	Each	\$ 1,000	16	\$ 16,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	3300	\$ 33,000
Construct 54" Sanitary Sewer Pipe	Lin. Ft.	\$ 450	3300	\$ 1,485,000
Construct 108" Manhole	Each	\$ 16,000	16	\$ 256,000
Manhole Waterproofing	Each	\$ 1,000	16	\$ 16,000
Bypass Pumping	MGD	\$ 10,000	15.9	\$ 159,000
Solid Rock Excavation	Lin. Ft.	\$ 170	3300	\$ 561,000
Dewatering	Lin. Ft.	\$ 20	0	\$ -
Highway Crossing	Lin. Ft.	\$ 2,750	400	\$ 1,100,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 3,626,000
Total Grading & Base & Sewer				\$ 4,840,000
10% Contingency				\$ 484,000
Sub-total				\$ 5,324,000
12% Engineering				\$ 639,000
8% Administrative				\$ 426,000
Probable Cost Opinion				\$ 6,389,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-14-1045 Cascade Creek"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	3338
Pipe Size	54
# of MH	16
New Manhole Size	108
Bypass Flow (MGD)	15.9
Major Impacts? (1 or 0)	

Rdwy Alignment	0	LF:	0
HWY XING	1	LF:	400
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	1	LF:	3338
Dewatering	0	LF:	0

Width (ft)
 Driveways (#)
 Drvwy Width (ft)
 ROW (ft)
 Curb and Gutter?
 Sidewalk Length 5 ft Width
 Bike Path Width 2600 5-10 ft Width

Preliminary Cost Opinion for Pipe Segment "WZ-17-1004 WZ Crossover"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	422
Pipe Size	36
# of MH	4
New Manhole Size	84
Bypass Flow (MGD)	0.29
Major Impacts? (1 or 0)	

Rdwy Alignment	1	LF:	422
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	0	LF:	0
Rock Excavation	0	LF:	0
Dewatering	1	LF:	211

Width (ft)	60
Driveways (#)	3
Drwy Width (ft)	35
ROW (ft)	80
Curb and Gutter?	422
Sidewalk Length	800 5 ft Width
Bike Path Width	0 60 ft disturbance

Preliminary Cost Opinion for Pipe Segment "WZ-18-1060 J7793 Ext"

Pipe Dia. & Material		F&I Cost		Inhole Dia/ F&I C		Rock Exc.	Trenchless Steel Casing Hwy & RR	Open Cut Streams
12	PVC	\$	55	48	\$ 6,000	\$ 80	\$ 250	\$ 300
15	PVC	\$	65	48	\$ 6,000	\$ 85	\$ 500	\$ 400
18	PVC	\$	75	48	\$ 6,000	\$ 90	\$ 750	\$ 500
21	PVC	\$	100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600
24	PVC	\$	150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700
27	PVC	\$	175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800
30	PVC	\$	200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900
36	Hobas	\$	250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200
42	Hobas	\$	350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400
48	Hobas	\$	400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600
54	Hobas	\$	450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800
60	Hobas	\$	500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000
66	Hobas	\$	550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	2738
Pipe Size	36
# of MH	7
New Manhole Size	84
Bypass Flow (MGD)	0

Major Impacts? (1 or 0)	Rdwy Alignment	0	LF:	0
	HWY XING	0	LF:	0
	RR XING	0	LF:	0
	Stream XING	0	LF:	0
	Rock Excavation	1	LF:	0
	Dewatering	1	LF:	1369

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

Linear Feet	22010
Pipe Size	24
# of MH	55
New Manhole Size	60
Bypass Flow (MGD)	

Major Impacts? (1 or 0)	Rdwy Alignment	0	LF:	0
	HWY XING	1	LF:	750
	RR XING	0	LF:	0
	Stream XING	1	LF:	50
	Rock Excavation	1	LF:	5502
	Dewatering	1	LF:	11005

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

5 ft Width
60 ft disturbance

Linear Feet	6652
Pipe Size	30
# of MH	17
New Manhole Size	72
Bypass Flow (MGD)	

Major Impacts? (1 or 0)	Rdwy Alignment	0	LF:	0
	HWY XING	1	LF:	100
	RR XING	1	LF:	100
	Stream XING	1	LF:	100
	Rock Excavation	1	LF:	3326
	Dewatering	1	LF:	1663

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

Linear Feet	22795
Pipe Size	18
# of MH	57
New Manhole Size	48
Bypass Flow (MGD)	

Major Impacts? (1 or 0)	Rdwy Alignment	0	LF:	0
	HWY XING	1	LF:	200
	RR XING	0	LF:	0
	Stream XING	1	LF:	100
	Rock Excavation	1	LF:	11398
	Dewatering	1	LF:	5699

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

5 ft Width
60 ft disturbance

Preliminary Cost Opinion for Pipe Segment "WZ-19-1097 Kutzy Park"				
Grading and Base				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Mobilization	Lump Sum	\$ 170,000	1	\$ 170,000
Traffic Control	Lump Sum	\$ 35,000	1	\$ 35,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	30200	\$ 151,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	1200	\$ 10,000
Remove Concrete Walk	Sq. Yd.	\$ 4	200	\$ 1,000
Common Excavation	Cu. Yd.	\$ 6	15100	\$ 91,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	6700	\$ 214,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	5000	\$ 160,000
Bituminous Paving	Ton	\$ 80	6600	\$ 528,000
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	1200	\$ 22,000
Concrete Walk	Sq. Ft.	\$ 6	1500	\$ 9,000
Concrete Driveway	Sq. Yd.	\$ 60	100	\$ 6,000
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	4000	\$ 20,000
Sod	Lin. Ft.	\$ 27	2000	\$ 54,000
Seed & Mulch	Lin. Ft.	\$ 3	2000	\$ 6,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 1,482,000
Sanitary Sewer				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Remove Sanitary Sewer Manholes	Each	\$ 1,000	22	\$ 22,000
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	4000	\$ 40,000
Construct 36" Sanitary Sewer Pipe	Lin. Ft.	\$ 250	4000	\$ 1,000,000
Construct 84" Manhole	Each	\$ 12,000	22	\$ 264,000
Manhole Waterproofing	Each	\$ 1,000	22	\$ 22,000
Bypass Pumping	MGD	\$ 10,000	6.3	\$ 63,000
Solid Rock Excavation	Lin. Ft.	\$ -	0	\$ -
Dewatering	Lin. Ft.	\$ 20	3000	\$ 60,000
Highway Crossing	Lin. Ft.	\$ 2,000	300	\$ 600,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ 1,200	100	\$ 120,000
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 2,191,000
Total Grading & Base & Sewer				\$ 3,673,000
10% Contingency				\$ 367,000
Sub-total				\$ 4,040,000
12% Engineering				\$ 485,000
8% Administrative				\$ 323,000
Probable Cost Opinion				\$ 4,848,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-19-1097 Kutzy Park"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	4037
Pipe Size	36
# of MH	22
New Manhole Size	84
Bypass Flow (MGD)	6.3
Major Impacts? (1 or 0)	

Rdwy Alignment	1	LF:	3400
HWY XING	1	LF:	325
RR XING	0	LF:	0
Stream XING	1	LF:	100
Rock Excavation	0	LF:	0
Dewatering	1	LF:	3028

Width (ft)	80
Driveways (#)	15
Drwy Width (ft)	12
ROW (ft)	50
Curb and Gutter?	1200
Sidewalk Length	300 5 ft Width
Bike Path Width	

Preliminary Cost Opinion for Pipe Segment "WZ-20-1011 Interlachen"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	2438
Pipe Size	30
# of MH	11
New Manhole Size	72
Bypass Flow (MGD)	0.6
Major Impacts? (1 or 0)	
Rdwy Alignment	1 LF: 1400
HWY XING	1 LF: 400
RR XING	0 LF: 0
Stream XING	1 LF: 100
Rock Excavation	0 LF: 0
Dewatering	1 LF: 1829

Width (ft)	25
Driveways (#)	15
Drvwy Width (ft)	30
ROW (ft)	50
Curb and Gutter?	1000
Sidewalk Length	1000 5 ft Width
Bike Path Width	10 60 ft disturbance

Preliminary Cost Opinion for Pipe Segment "WZ-21-1059 J7773 Ext"				
Grading and Base				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Mobilization	Lump Sum	\$ 130,000	1	\$ 130,000
Traffic Control	Lump Sum	\$ 25,000	1	\$ 25,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	0	\$ -
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	0	\$ -
Aggregate Base (CV)	Cu. Yd.	\$ 32	0	\$ -
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	0	\$ -
Bituminous Paving	Ton	\$ 80	0	\$ -
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	17800	\$ 89,000
Sod	Lin. Ft.	\$ 27	0	\$ -
Seed & Mulch	Lin. Ft.	\$ 3	17800	\$ 53,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 302,000
Sanitary Sewer				
<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Amount</u>
Remove Sanitary Sewer Manholes	Each	\$ 1,000	0	\$ -
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	0	\$ -
Construct 18" Sanitary Sewer Pipe	Lin. Ft.	\$ 75	3000	\$ 225,000
Construct 12" Sanitary Sewer Pipe	Lin. Ft.	\$ 55	14800	\$ 814,000
Construct 48" Manhole	Each	\$ 6,000	45	\$ 270,000
Manhole Waterproofing	Each	\$ 1,000	45	\$ 45,000
Bypass Pumping	MGD	\$ 10,000	0	\$ -
Solid Rock Excavation	Lin. Ft.	\$ 80	7400	\$ 592,000
Dewatering	Lin. Ft.	\$ 20	0	\$ -
Highway Crossing	Lin. Ft.	\$ 750	100	\$ 75,000
Highway Crossing	Lin. Ft.	\$ 250	800	\$ 200,000
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ 300	500	\$ 150,000
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 2,371,000
Total Grading & Base & Sewer				\$ 2,673,000
10% Contingency				\$ 267,000
Sub-total				\$ 2,940,000
12% Engineering				\$ 353,000
8% Administrative				\$ 235,000
Probable Cost Opinion				\$ 3,528,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. /acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-21-1059 J7773 Ext"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	3009
Pipe Size	18
# of MH	8
New Manhole Size	48
Bypass Flow (MGD)	0
Major Impacts? (1 or 0)	
Rdwy Alignment	0 LF: 0
HWY XING	1 LF: 75
RR XING	0 LF: 0
Stream XING	0 LF: 0
Rock Excavation	0 LF: 0
Dewatering	0 LF: 0

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

5 ft Width
60 ft disturbance

Linear Feet	14804
Pipe Size	12
# of MH	37
New Manhole Size	48
Bypass Flow (MGD)	
Major Impacts? (1 or 0)	
Rdwy Alignment	0 LF: 0
HWY XING	1 LF: 800
RR XING	0 LF: 0
Stream XING	1 LF: 500
Rock Excavation	1 LF: 7402
Dewatering	0 LF: 0

Width (ft)
Driveways (#)
Drwy Width (ft)
ROW (ft)
Curb and Gutter?
Sidewalk Length
Bike Path Width

5 ft Width
60 ft disturbance

Preliminary Cost Opinion for Pipe Segment "WZ-22-1058 Meadow Lakes Ext"				
Grading and Base				
Item	Unit	Unit Price	Quantity	Amount
Mobilization	Lump Sum	\$ 240,000	1	\$ 240,000
Traffic Control	Lump Sum	\$ 49,000	1	\$ 49,000
Remove Bituminous Pavement	Sq. Yd.	\$ 5	3000	\$ 15,000
Remove Concrete Pavement	Sq. Yd.	\$ 12	0	\$ -
Remove Concrete Curb & Gutter	Lin. Ft.	\$ 8	0	\$ -
Remove Concrete Walk	Sq. Yd.	\$ 4	0	\$ -
Common Excavation	Cu. Yd.	\$ 6	1500	\$ 9,000
Aggregate Base (CV)	Cu. Yd.	\$ 32	700	\$ 22,000
Aggregate Base Breaker Run (CV)	Cu. Yd.	\$ 32	500	\$ 16,000
Bituminous Paving	Ton	\$ 80	700	\$ 56,000
Bike Path Restoration	Sq. Yd.	\$ 50	0	\$ -
Concrete Curb & Gutter	Lin. Ft.	\$ 18	0	\$ -
Concrete Walk	Sq. Ft.	\$ 6	0	\$ -
Concrete Driveway	Sq. Yd.	\$ 60	0	\$ -
Concrete Pavement	Sq. Yd.	\$ 80	0	\$ -
Erosion Control	Lin. Ft.	\$ 5	15900	\$ 80,000
Sod	Lin. Ft.	\$ 27	8000	\$ 216,000
Seed & Mulch	Lin. Ft.	\$ 3	8000	\$ 24,000
Erosion Control Supervisor	Lum Sum	\$ 5,000	1	\$ 5,000
Grading & Base				\$ 732,000
Sanitary Sewer				
Item	Unit	Unit Price	Quantity	Amount
Remove Sanitary Sewer Manholes	Each	\$ 1,000	0	\$ -
Remove Sanitary Sewer Pipe	Lin. Ft.	\$ 10	0	\$ -
Construct 30" Sanitary Sewer Pipe	Lin. Ft.	\$ 200	15900	\$ 3,180,000
Construct 72" Manhole	Each	\$ 10,000	40	\$ 400,000
Manhole Waterproofing	Each	\$ 1,000	40	\$ 40,000
Bypass Pumping	MGD	\$ 10,000	0	\$ -
Solid Rock Excavation	Lin. Ft.	\$ 120	4000	\$ 480,000
Dewatering	Lin. Ft.	\$ 20	8000	\$ 160,000
Highway Crossing	Lin. Ft.	\$ -	0	\$ -
Railroad Crossing	Lin. Ft.	\$ -	0	\$ -
Stream Crossing (non-siphon)	Lin. Ft.	\$ 900	200	\$ 180,000
Stream Crossing (siphon)	Lin. Ft.	\$ -	0	\$ -
Sanitary Sewer				\$ 4,440,000
Total Grading & Base & Sewer				\$ 5,172,000
10% Contingency				\$ 517,000
Sub-total				\$ 5,689,000
12% Engineering				\$ 683,000
8% Administrative				\$ 455,000
Probable Cost Opinion				\$ 6,827,000

5% of project cost, rounded to nearest \$10,000

1% of project cost, rounded to nearest \$1,000

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

Set rate

40' width / 9 sq. ft. / sq. yd. x \$6 / sq. yd.

40' width / 43,560 sq. ft. / acre x \$2,000/acre

Set rate

Set rate

Set rate

Based on rate table

Based on rate table

Set rate

Set rate

Based on rate table

Set rate

Based on rate table

Based on rate table

Based on rate table

Use separate probable cost spreadsheet

Preliminary Cost Opinion for Pipe Segment "WZ-22-1058 Meadow Lakes Ext"

Pipe Dia. & Material		Rate Table					Trenchless Steel Casing Hwy & RR	Open Cut Streams
		F&I Cost	Manhole Dia/ F&I Cost		Rock Exc.			
12	PVC	\$ 55	48	\$ 6,000	\$ 80	\$ 250	\$ 300	
15	PVC	\$ 65	48	\$ 6,000	\$ 85	\$ 500	\$ 400	
18	PVC	\$ 75	48	\$ 6,000	\$ 90	\$ 750	\$ 500	
21	PVC	\$ 100	60	\$ 8,000	\$ 95	\$ 1,000	\$ 600	
24	PVC	\$ 150	60	\$ 8,000	\$ 105	\$ 1,250	\$ 700	
27	PVC	\$ 175	60	\$ 8,000	\$ 110	\$ 1,500	\$ 800	
30	PVC	\$ 200	72	\$ 10,000	\$ 120	\$ 1,750	\$ 900	
36	Hobas	\$ 250	84	\$ 12,000	\$ 130	\$ 2,000	\$ 1,200	
42	Hobas	\$ 350	96	\$ 14,000	\$ 145	\$ 2,250	\$ 1,400	
48	Hobas	\$ 400	108	\$ 16,000	\$ 155	\$ 2,500	\$ 1,600	
54	Hobas	\$ 450	108	\$ 16,000	\$ 170	\$ 2,750	\$ 1,800	
60	Hobas	\$ 500	120	\$ 18,000	\$ 180	\$ 3,000	\$ 2,000	
66	Hobas	\$ 550	120	\$ 18,000	\$ 195	\$ 3,250	\$ 2,200	

pipe size + 24"
10 foot depth
\$70/cu. yd.

Linear Feet	15939
Pipe Size	30
# of MH	40
New Manhole Size	72
Bypass Flow (MGD)	0
Major Impacts? (1 or 0)	

Rdwy Alignment	1	LF:	600
HWY XING	0	LF:	0
RR XING	0	LF:	0
Stream XING	1	LF:	150
Rock Excavation	1	LF:	3985
Dewatering	1	LF:	7970

Width (ft)	45
Driveways (#)	1
Drvwy Width (ft)	25
ROW (ft)	65
Curb and Gutter?	0
Sidewalk Length	0 5 ft Width
Bike Path Width	0 60 ft disturbance

SEWER TRUNK RATE CALCULATION

West Zumbro Sewer Trunk Rate Calculation

Trunk Line	Pipe Section	Cost	Developable Acres	\$/Acre	With Outstanding Project Balances
West Zumbro	WZ-14-1045	Cascade Creek	\$ 6,389,000		
	WZ-10-1062	Cooke Park E	\$ 1,229,000		
	WZ-19-1097	Kutzky Park	\$ 4,848,000		
	WZ-06-1044	Cascade Lake	\$ 3,912,000		
	WZ-08-1051	Country Club Manor	\$ 2,534,000		
	WZ-20-1011	Interlachen	\$ 2,454,000		
	WZ-11-1022	NW Hy-Vee	\$ 6,330,000		
	WZ-02-1021	Cascade Meadows	\$ 1,799,000		
	WZ-13-1043	R.A.C.	\$ -		
	WZ-03-1020	Kadlec/Whiting	\$ 2,889,000		
	WZ-04-1019	Redi-Mix	\$ 2,506,000		
	WZ-09-1037	KR6	\$ -		
	WZ-15-1023	West Circle Drive	\$ -		
	WZ-16-1002	Cooke Park	\$ -		
	WZ-05-1046	Quarry Ridge	\$ 711,000		
	WZ-07-1047	W Frontage Rd	\$ 729,000		
	WZ-17-1004	WZ Crossover	\$ 462,000		
	WZ-01-1018	Valley High Dr	\$ 5,983,000		
	WZ-12-1006, WZ-18-1060, WZ-21-1059, WZ-22-1058	Extensions	\$ 31,228,000		
			\$ 74,003,000	5,862	\$ 12,624
Downtown/UMT	DT-03-1029	7th Ave Relief	\$ 5,659,870		
	DT-04-1111	N Broadway Reroute	\$ 2,463,900		
	DT-05-1112	N Broadway Reconstruction	\$ 416,400		
	DT-06-1016	2nd Ave Relief Line	\$ 341,000		
	DT-07-1028	Goose Egg Park Relief Line	\$ 529,000		
	*UMT-01-1042	Zumbro River West	\$ 4,396,096		
	*UMT-02-1118	EZ Crossover	\$ 919,004		
	*UMT-08-1034	IBM Trunkline	\$ -		
	*UMT-09-1120	41st St NW	\$ -		
		\$ 88,728,270	5,862	\$ 15,136	\$ 15,330

*Cost Split Proportional to DA in SZ, WZ, and EZ. See UMT Sewer Trunk Rate for details.

Example Calculation

$$\frac{\text{Project Costs}}{\text{Developable Acres}} + \frac{\text{Outstanding Project Balance}}{\text{Developable Acres}} = \text{Sewer Trunk Rate with Outstanding Project}$$

Outstanding Trunk Sewer Project Balances

J No.	Project Description	Balance	NW Territory	Kings Run	Hadley Valley	West Zumbro	South Zumbro	East Zumbro	Total
2170	Reconstruct 1st Ave SW from 4th St SW to Soldier's Field Park	\$ 397,400.00					\$ 397,400		\$ 397,400
2175	East Zumbro River Sanitary Sewer Interceptor from 37th St NW to 13 1/2 St NW	\$ 3,911,805.33					\$ 271,936	\$ 3,639,870	\$ 3,911,805
4366	Pump Station to Serve NW & Hadley Valley Area	\$ 1,400,000.00	\$ 504,000	\$ 546,000	\$ 350,000				\$ 1,400,000
7703	Subtrunkline Sanitary Sewer to Serve Portions of Sewer Service District 24 (Silver Creek)	\$ 820,000.00						\$ 820,000	\$ 820,000
7708	Construction of Kings Run Trunkline Relief Sanitary Sewer	\$ 2,100,000.00		\$ 2,100,000					\$ 2,100,000
7712	Gravity Interceptor Sewer Phase 1	\$ 5,150,000.00	\$ 1,372,949	\$ 1,487,361	\$ 2,289,690				\$ 5,150,000
7713	Trunk Sanitary Sewer & Watermain to Serve portion of Section 7, Cascade Township west of 60th Ave NW (Sewer Service Area 28G)	\$ 250,000.00		\$ 250,000					\$ 250,000
7721	Relocate the T.H. 63 South Sanitary Sewer Trunkmain from 40th St SW to approximately 1000 feet north of 48th St SW	\$ 150,000.00						\$ 150,000	\$ 150,000
7733	Construct Sanitary Sewer Diverter in 12th Street North from West Silver Lake Drive NE to 2nd Ave NW and north along 2nd Ave NW to Cascade Creek	\$ 1,050,000.00					\$ 72,992	\$ 977,008	\$ 1,050,000
7739	Lift Station No. 4 Essex Park Lift Station Replacement								
7744	Hadley Valley Trunk Sanitary Sewer to Serve portions of Sections 7, 8, 9, 16, 17, 18, 19, 20, & 21, Haverhill Township (Sewer Service Area 29A) - PHASE 2	\$ 4,300,000.00		\$ 4,300,000					\$ 4,300,000
7751	Bear Creek Sub-trunkline Sanitary Sewer to Serve Portions of Sewer District 16 in Marion Township, Phase II.	\$ 1,486,680.00						\$ 1,486,680	\$ 1,486,680
7754	Parkwood Hills Sub-Trunkline Sanitary Sewer	\$ 112,309.94						\$ 112,310	\$ 112,310
7758	Hadley Valley trunkline sanitary sewer Phase 3A from 1/4 mile east of TH 63 easterly along 48th Street NE to Hadley Valley Road NE to serve portions of Sewer Service Area 29A.	\$ 1,600,000.00			\$ 1,600,000				\$ 1,600,000
7759	Construction of Interceptor 60 inch Sanitary Sewer from New Lift Station #4 to King's Run Trunkline Sanitary Sewer and the future NW Territory Trunkline Sanitary Sewer	\$ 984,581.58	\$ 472,599	\$ 511,982					\$ 984,582
7772	Parkwood Hills Sub-Trunkline Sanitary Sewer - Phase II	\$ 325,000.00						\$ 325,000	\$ 325,000
9657	Trunk sanitary sewer and watermain to serve portions of section 17, 18, 19 and 20 of Cascade Township, Sewer Service Area 28F	\$ 775,000.00		\$ 775,000					\$ 775,000
9751	Sub Trunkline SSA 6G Phase 1	\$ 1,139,500.00				\$ 1,139,500			\$ 1,139,500
9869	Bear Creek Sub-Trunkline Sanitary Sewer to Serve Portions of Sewer District 16 in Marion Township.	\$ 638,320.00						\$ 638,320	\$ 638,320
	Totals	\$ 26,590,596.85	\$ 2,349,548	\$ 5,670,343	\$ 8,539,690	\$ 1,139,500	\$ 742,328	\$ 8,149,187	\$ 26,590,597