

COMPREHENSIVE SANITARY SEWER STUDY UPDATE

IN COORDINATION WITH 2040 COMPREHENSIVE PLAN UPDATE

CITY OF RAMSEY, MN

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Submitted by:

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CITY OF RAMSEY, MINNESOTA**

A. PURPOSE

The purpose for this report is to update the City’s 2012 Comprehensive Sanitary Sewer Study based on current population and land use projections. The 2012 Comprehensive Sanitary Sewer Study included a plan for meeting the City’s infrastructure needs based on development projected within the City’s 2030 Comprehensive Plan.

City staff has identified development which has occurred since the 2012 study was completed and has provided projections for development which is likely to occur in the next 23 years (Year 2040). This report evaluates the impact of the recent and projected development on the proposed sanitary sewer infrastructure implementation.

The following paragraphs present a summary of key updates to the 2012 plan. The intent is to complete the following:

- Estimate costs associated with infrastructure needed to serve future development areas,
- Provide estimations of growth and development anticipated through Year 2040, and
- Develop a connection amount based on the estimated costs and development.

B. SUMMARY OF INFRASTRUCTURE REVISIONS TO THE 2012 COMPREHENSIVE PLAN

Section 4 of the 2012 report describes the trunk infrastructure improvements needed to serve each defined subdistrict within the MUSA boundary. For this report, each subdistrict was reviewed and revisions were made to the required infrastructure based on:

- Improvements made over the last 5 years, and
- Considerations of improvements required.

Through discussions with the City, we were able to determine the improvements made within each subdistrict over the last 5 years. We also made revisions based on anticipated development patterns and anticipated future needs. The following paragraphs describe the revisions made within each subdistrict to allow us to quantify the total improvement costs throughout the City. We attached the updated 2017 “Proposed Trunk Sewer Extensions” map showing the subdistricts and the proposed trunk sewer extensions.

1. Subdistrict M3

This subdistrict is located in the Southwest corner of the City, south of Highway 10. The primary sewer crossing of Trunk Highway 10 has been completed and was removed from the figure and cost estimate. The Bower’s Drive NW trunk sanitary sewer line has been converted from a trunk facility to a lateral sewer line. This line was removed from the 2017 proposed trunk sewer extensions as it is now anticipated to serve the area as a standard lateral line. All trunk line project costs have been updated to 2017 unit prices.

2. Subdistrict M4

This subdistrict is located north of Highway 10 and west of Armstrong Boulevard. The trunk sanitary sewer facilities have been modified to reflect the findings of the 2015 Future Business Park study that was completed for this area of the City. Lift station MLS-5 was added to the improvements required for this subdistrict. All project costs have been updated to 2017 unit prices.

Because portions of these improvements have been, or are programmed to be constructed in 2017, we included some in the Capital Improvement Plan and others in the future improvements plan.

3. Subdistricts R21 Through R25

These subdistricts are located north of Trott Brook in the north central portion of the City. No layout revisions to these trunk extensions were made. All trunk line project costs have been updated to current 2017 unit prices.

4. System Extension for 167th Avenue Future MUSA Study Area

The Future MUSA Study Area identifies an area to better understand the feasibility of extending a trunk sewer line to the 167th Avenue/Saint Francis Boulevard (TH 47) land use node. Municipal Water service exists to the area, but Sanitary Sewer does not. The City has a land use goal to revitalize this node and surrounding area, and the availability of Sanitary Sewer is a major variable in future land use decisions. The MUSA boundary does not currently include this area. Findings from this study area will be utilized to influence the City’s 2040 Comprehensive Plan Update and discussions with private developers currently proposing certain land use scenarios.

C. TRUNK SANITARY SEWER SYSTEM COSTS

Attached are the updated cost estimates related to the above revisions, totaling \$7,571,929. These costs include 25% for indirect costs such as administration, engineering, legal and financing. Additionally, we have included a 20% contingency for unforeseen improvements which may be required during the study period, for a total cost of \$9,086,315 in 2017 dollars.

The City’s current Capital Improvement Plan was used to determine expenditures for the years 2017 to 2020. For the years 2021 to 2040, the above described costs were spread evenly over the 20 year period, while being inflated at a rate of 3% per year.

D. DEVELOPMENTAL IMPACT ON THE COMPREHENSIVE SANITARY SEWER STUDY

Actual and projected development within the City of Ramsey since the 2012 Comprehensive Sanitary Sewer Study are summarized as follows:

- Actual Total Connections from 2012-2015 are as follows:
 - 2012: 295
 - 2013: 164
 - 2014: 66
 - 2015: 258
 - Avg: 196

- Projected development rates used in 2012 study (through 2030) were as follows:
 - 260 Residential Units/Year (25% High Density)
 - 25 Commercial/Industrial Acres/Year
- Projected development rates (through 2040) are anticipated to be as follows:
 - 160 Residential Units/Year (50% High Density)
 - 10 Commercial/Industrial Acres/Year

The projected Residential development rate was lowered by 38.5% to 80 Units/Year, the projected Commercial/Industrial development rate was lowered by 15 Acres/Year (-60%), while the projected number of high density units increased from 65 Units/Year to 80 Units/Year (+23%).

Based on these considerations, the Residential Equivalent Units (connections) is conservatively estimated at 160 per year.

The 2017 sewer connection charge is \$1,154 per residential unit and \$3,475 per commercial/industrial acre.

E. ANALYSIS

Many factors impact the actual fee required to sustain and expand the trunk sanitary sewer facilities. We have included a more comprehensive spreadsheet analysis of the sanitary sewer expenses and revenues. Assumption made in the spreadsheet are:

- Anticipated revenue from utility billings of \$1,528,683 were used for 2017 and then inflated at 1% per year.
- Trunk Connection charges and SAC fees were set at \$1,154 and \$2,485 for 2017 and then inflated at 2.5% per year.
- Operating expenses were set at \$1,014,301 for 2017 and then inflated at 3% per year.
- Capital expenditures for 2016 to 2020 were taken from the City's current Capital Improvement Plan.
- Capital expenditures for 2021 to 2040 was determined as described in Section 3 of this report.

The information provided in this report should be considered when setting sanitary sewer connection charges within the City.

2040 MUSA - Trunk Sanitary Sewer System Improvements (2021 - 2040)

DISTRICT	LOCATION	SIZE (IN.)	LENGTH (FT.)	COST PER FOOT*	LIFT STATION	COST
<u>M3</u>	MLS-2				\$393,928	\$393,928
	MLS-2 to MH-11A	12" FM	1750	\$124		\$216,660
	MLS-2 to MH-9A	18"	3600	\$259		\$931,921
	TOTAL M3 DISTRICT					
<u>M4</u>	MLS-5				(Constructed 2017. Included in CIP)	\$0
	MH-92 to MLS-5	12"	1000	\$146		\$146,316
	MLS-5 to MH-9	6" FM			(Constructed 2017. Included in CIP)	\$0
	MH-9 to MH-10A	18"			(Constructed 2017. Included in CIP)	\$0
TOTAL M4 DISTRICT						\$146,316
<u>R1</u>	MH-89 to MH-92	21"	1300	\$326		\$424,317
TOTAL R1 DISTRICT						\$424,317
<u>R23, 24 & 25</u>	RLS-8				\$343,280	\$343,280
	RLS-8 to MH-82	8" FM	720	\$90		\$64,829
	RLS-8 to MH-82	8" FM Jacking	80	\$281		\$22,510
	RLS-8 to MH-84A	10"	4400	\$129		\$569,507
	RLS-8 to MH-83A	12"	2500	\$146		\$365,790
	MH-83A to MH-83	10"	2700	\$129		\$349,470
TOTAL R23, 24 & 25 DISTRICT						\$1,715,388
<u>R21 & 22</u>	MH-79 to MH-78	10"	5100	\$129		\$660,111
	MH-81 to MH-79	12"	900	\$146		\$131,685
	MH-81 to MH-82	18"	3900	\$259		\$1,009,581
	RLS-3 to MH-81	18"	850	\$259		\$220,037
TOTAL R21 & 22 DISTRICT						\$2,021,414
<u>RLS-3</u>	RLS-3				\$241,984 (upgrade existing LS)	\$241,984
TOTAL RLS-3 DISTRICT						\$241,984
<u>FUTURE MUSA STUDY AREA</u>						
<u>RLS-9</u>	RLS-9				\$500,000	\$500,000
	RLS-9 to MH-14	8" FM	10000	\$98		\$980,000
TOTAL RLS-9 DISTRICT						\$1,480,000
SUB-TOTAL						\$7,571,929
20% CONTINGENCY FOR UNFORSEEN IMPROVEMENTS						\$1,514,386
TOTAL IMPROVEMENT COSTS						\$9,086,315
AVERAGE YEAR FOR 20 YEARS (2017 DOLLARS)						\$454,316
INFLATED AT 3% PER YEAR TO YEAR 2021						\$511,336

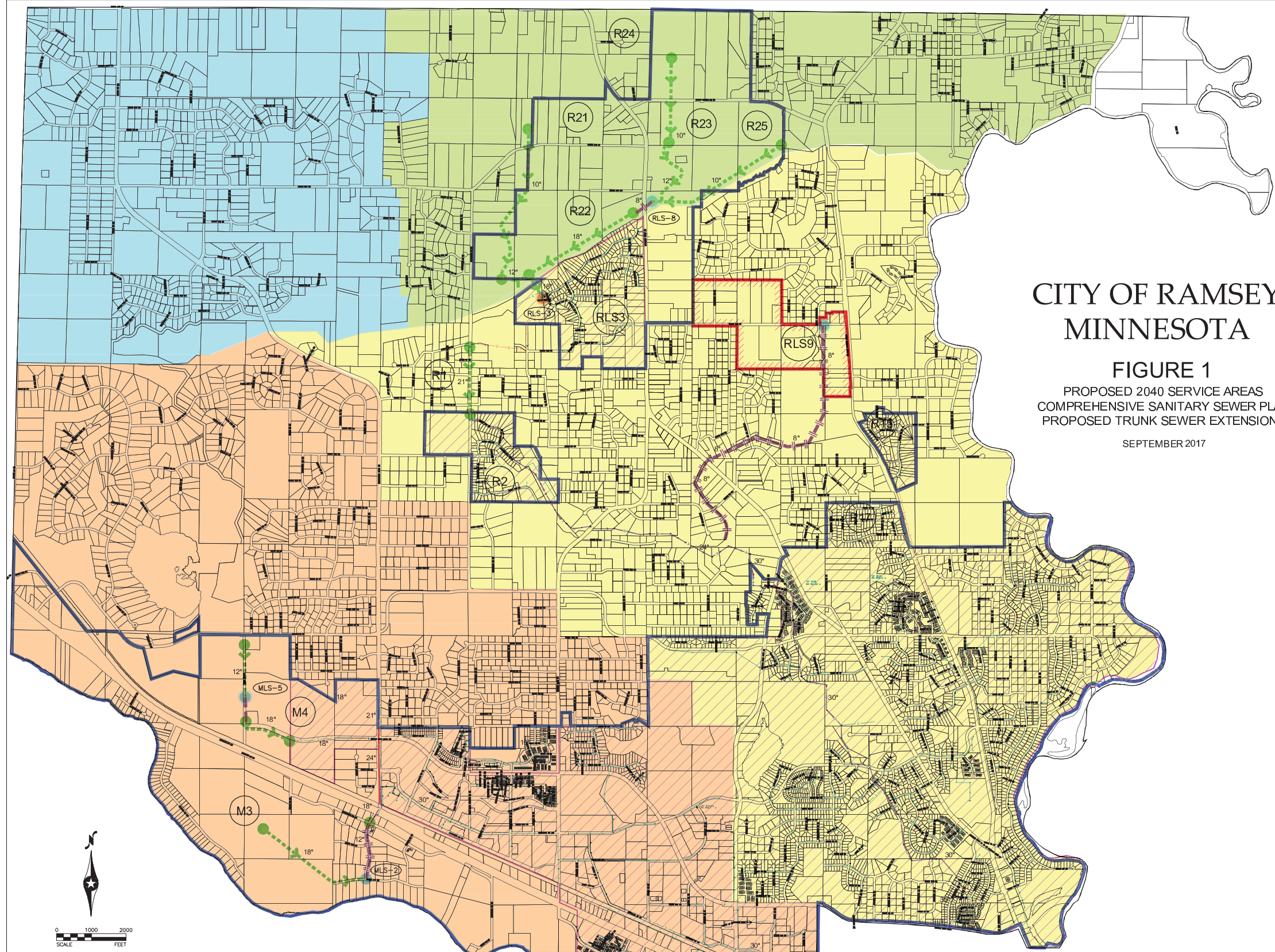
* INCLUDES 25% INDIRECT COSTS

Sanitary Sewer System Rate Impact Summary
City of Ramsey, Minnesota
9/15/2017

	Actual 2016	Projected / Actual 2017	Projected 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2030	Projected 2035	Projected 2040
Beginning Balance		10,730,177	10,731,811	9,894,880	10,774,551	11,199,678	11,565,438	11,909,244	12,229,589	12,524,903	13,566,487	13,375,837	11,944,107
Sanitary Sewer System Revenue													
Billings and Interest													
From Utility Billings (2016 is based on current activity and inflated 1% per year to 2040)		1,528,683	1,543,970	1,559,410	1,575,004	1,590,754	1,606,661	1,622,728	1,638,955	1,655,345	1,739,784	1,828,530	1,921,804
Internal Loan to offset Muni Center Debt beginning year 2010-2029 @ 2%		47,814	48,770	49,746	50,741	51,755	52,791	53,846	54,923	56,022			
Internal loan to offset RTC land Purchase - 10 Year @ 2% (When land proceeds received)		-	-	-	-	-	-	-	-	-			
Interest Earnings		107,302	160,977	148,423	161,618	167,995	173,482	178,639	183,444	187,874	203,497	200,638	179,162
Total Billings and Interest		1,683,799	1,753,717	1,757,578	1,787,362	1,810,504	1,832,933	1,855,213	1,877,322	1,899,240	1,943,281	2,029,168	2,100,965
SAC and Connection Charges													
New Customers (REUs)		160	160	160	160	160	160	160	160	160	160	160	160
Residential Connection (Trunk) Fees per Connection (Actual 2016 value and then inflated at 2.5% per year to 2040)		1,154	1,183	1,212	1,243	1,274	1,306	1,338	1,372	1,406	1,591	1,800	2,036
Residential Sewer Availability Charge (SAC) (Actual 2016 value and then inflated at 2.5% per year to 2040)		2,485	2,547	2,611	2,676	2,743	2,812	2,882	2,954	3,028	3,426	3,876	4,385
Trunk Revenue (Based on 2016 activity) (2017 to 2040 based on 160 REUs per year)		184,640	189,256	193,987	198,837	203,808	208,903	214,126	219,479	224,966	254,528	287,975	325,818
SAC Revenue (1% of Total) (Based on 2016 activity) (2017 to 2040 based on 160 REUs per year)		3,976	4,075	4,177	4,282	4,389	4,498	4,611	4,726	4,844	5,481	6,201	7,016
Total SAC and Connection Fees		188,616	193,331	198,165	203,119	208,197	213,402	218,737	224,205	229,810	260,009	294,177	332,834
Sanitary Sewer System Expenses													
Operating Expenses (Personal Services, Supplies, Other Services & Charges)		(1,014,301)	(1,044,730)	(1,076,072)	(1,108,354)	(1,141,605)	(1,175,853)	(1,211,128)	(1,247,462)	(1,284,886)	(1,489,535)	(1,726,780)	(2,001,811)
Based on 2016 Activity and inflated at 3% per year from 2017 to 2040)													
CIP Projects-Sewer Utilities													
Bunker Lake Boulevard Trunk Sanitary Sewer		(105,658)											
Utility Truck(s)		(25,000)	(23,500)										
Puma Street Trunk Sanitary Sewer and Lift Station		(725,822)											
Abandon Wildlife Sanctuary Lift Station					(352,000)								
Public Works Campus			(1,715,750)										
Fire Station #1 Sanitary Sewer					(60,000)								
Abandon Liftstation River Pines					(45,000)								
Armstrong Boulevard Extend Sewer to Riverdale													
TOTALS Note: CIP Project 2021 to 2040 (\$505,980/Year in 2017 Dollars. Inflated 3%/Year.)		(856,480)	(1,739,250)	-	(457,000)	(511,336)	(526,676)	(542,476)	(558,751)	(575,513)	(667,178)	(773,442)	(896,631)
Remaining Working Capital Balance	10,730,177	10,731,811	9,894,880	10,774,551	11,199,678	11,565,438	11,909,244	12,229,589	12,524,903	12,793,554	13,613,065	13,198,960	11,479,464

*** This fund is created to offset the repairs of lines. The city currently has over \$21,000,000 of sewer lines (per 2013 audit) which includes over \$5.8M of accumulated depreciation

Indicates adjustable values



CITY OF RAMSEY MINNESOTA

FIGURE 1
PROPOSED 2040 SERVICE AREAS
COMPREHENSIVE SANITARY SEWER PLAN
PROPOSED TRUNK SEWER EXTENSIONS

SEPTEMBER 2017

LEGEND

- | | | | |
|--|--|--|------------------------|
| | RUM RIVER SEWER DISTRICT | | PROPOSED TRUNK SEWER |
| | MISSISSIPPI RIVER SEWER DISTRICT | | PROPOSED FORCEMAIN |
| | NORTH TROTT BROOK MISSISSIPPI RIVER DISTRICT | | PROPOSED MH |
| | NORTH TROTT BROOK RUM RIVER DISTRICT | | PROPOSED LIFT STATION |
| | TRUNK SEWER IN PLACE | | EXISTING TRUNK SEWER |
| | 2030 MUSA | | EXISTING LATERAL SEWER |
| | FUTURE MUSA STUDY AREA | | EXISTING FORCEMAIN |
| | | | EXISTING LIFT STATION |

NOTE:
The information for this map was obtained from various sources of existing maps, construction plans, and City records, some of which were prepared by others. While this information is believed to be reliable, Bolton & Menk, Inc. is not responsible for its accuracy nor for errors or omissions which may have been incorporated into this document as a result.



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