



To: MAYOR AND COUNCIL

Agenda Item #: VIII.B

From: Ross Bintner PE, - Environmental Engineer

Action

Discussion

Date: October 7, 2014

Information

Subject: Sanitary Sewer Infiltration and Inflow Surcharge

Action Requested:

Authorize Community Response and I/I Mitigation Work Plan and Authorize City Manager to Sign Community Response Form.

Information / Background:

Following heavy rain events in July 2013 and June 2014, the City of Edina received notices (see attached) from Metropolitan Council Environmental Services (MCES) of metered exceedances of groundwater infiltration and surface storm waters runoff inflow. During these two rain events, infiltration and inflow (I/I) of non-sanitary water into Edina's aging sanitary sewer network caused discharge to exceed peak-hour capacity of downstream interceptors and was classified as excessive. Notification of this determination of excessive flow leaves the City with two choices; to accept a surcharge to be added to monthly MCES sanitary treatment bills, or commit to a I/I mitigation work plan that essentially invests an equivalent amount over 4 years in system maintenance and capital improvement targeted to reduce I/I.

Option 1 would add an annual surcharge in the amount of \$919,225 for 4 years. Option 2 commits the City to a 4 year capital work plan in the amount of \$3,676,900. Staff recommends Option 2, the I/I mitigation work plan, and has prepared the attached 2014 I/I Program Year Community Response Form accordingly.

Additional Detail:

Figure S-2 from the Comprehensive Plan Chapter 8 is attached. Notes added to this system map include MCES meter numbers. The major exceedance from the 8/15/13 and 8/1/14 excess discharge notices occurred on June 19, 2014 in Metershed 127 (M127), the Minnehaha Creek trunk sewer line. Mitigation work must be planned from 2015 to 2018 commensurate with the level of flow exceedance. The \$3,676,900 work plan amount breaks down to \$3,320,000 in M127, \$78,850 in M128, and \$278,050 in M129. The planned level of work in the draft 2015-2019 CIP taking place as part of the Neighborhood Street Reconstruction Program in M128 and M129 exceed the mitigation work plan amounts and require no change in plan.

The planned level of work in the draft 2015-2019 CIP taking place in the M127 area comes up approximately \$500,000 short in the mitigation work plan period. City staff requested MCES to credit planned work in the unmetered area shown in yellow on Figure S-2. The unmetered area of the City is predominantly in the oldest portions of the sanitary system in the Morningside, White Oaks, and 50th and France neighborhoods.

MCES responded favorably and will allow I/I mitigation work that takes place in the unmetered portions to be credited to the M127 mitigation work plan. With this allowance, no change in plan from the draft 2015-2019 CIP will be required.

The planned level of work in the draft 2015-2019 CIP exceeds the 2013-2017 CIP amounts for the 2015, 2016, and 2017 years which were the basis for the Rate Study. Tradeoffs such as immediate project offsets, additional bonding and decrease future projects, or increase rates will be required to offset required I/I mitigation work under Option 2.

Annual treatment costs paid to the MCES make up a majority of the sanitary sewer portion of a household utility bill. The total treatment costs amount to \$4,255,000 in 2012, \$4,386,000 in 2013 community wide. While the 2014 base rate has not yet been set, Option 1, the surcharge would bring the annual costs to at least \$5,305,225, an increase of over 20%. This option would require either an immediate rate increase or significant reduction of capital expenditure. If the surcharge option were chosen, surcharge funds become available to the City to reimburse sanitary I/I mitigation work.

Risk of additional exceedances during the 4 year surcharge is possible, but the required I/I mitigation work plan risk is capped at 25% of the MCES wastewater charge. In the case of an additional excessive flow notice an extension of the surcharge or work plan beyond 4 years would be required.

Moving forward with Option 2 commits the City to a base level of funding for sanitary I/I mitigation work in the 2015-2019 CIP. Although the Community Response Form includes a draft 2015-2018 mitigation work plan, there remains flexibility to move or reorder projects, but total mitigation work must still total the 4 year work plan amount.

I/I sources come from a variety of public and private system components. Aside from depth of rainfall and creek flow, trends in infiltration amount attributable to the system include age and wear on system, and improper installation and connection techniques. Attached is a schematic provided by MCES describing common sources of I/I. The 4 year plan leaves private system issues unaddressed.

Additional program detail is available at the MCES Website: <http://www.metrocouncil.org> by searching "I/I"

Attachments:

8/15/13 Excessive Wastewater Discharge Notice
8/1/14 Excessive Wastewater Discharge Notice
8/18/14 Surcharge Notice
Community Response Form and Plan
Figure S-2 Comp Plan Ch 8 – Sanitary Metersheds
MCES I/I Source Graphic
Workplan Amount City Comparison

August 15, 2013

Wayne Houle
City Engineer
City of Edina
4801 W. 50th Street
Edina, MN 55424-1330



RE: Excessive Wastewater Peak Discharges
Period: July 2013

Dear Mr. Houle:

In 2009 the Metropolitan Council formed a Demand Charge Task Force to address the long term impacts of excessive I/I on the regional disposal system. Consistent with the recommendations of the Demand Charge Task Force, the Council began implementing an On-going I/I mitigation program in 2013. The start date for peak flow exceedance measurement for **2015** community work activities began on July 1, 2013 and will continue through June 30, 2014. Any exceedances measured during this period will require the City to prepare a mitigation plan and begin its implementation in 2015.

Attached is a copy of a flow chart(s) for the subject event(s). Your community, either in part or in entirety, exceeded the I/I limit, during these events. The Council has determined that your community's exceedance(s) were as follows:

0.08 Million Gallons per Day (MGD) and occurred at 8:00am on July 13, 2013 at M127
0.03 Million Gallons per Day (MGD) and occurred at 9:00am on July 13, 2013 at M128

For additional information regarding the Council's On-going I/I program, go to our web site at:

[http://www.metrocouncil.org/Wastewater-Water/Funding-Finance/Rates-Charges/MCES-Inflow-and-Infiltration-\(I-I\)-Program.aspx](http://www.metrocouncil.org/Wastewater-Water/Funding-Finance/Rates-Charges/MCES-Inflow-and-Infiltration-(I-I)-Program.aspx)

In July 2014 the Council will send your community a letter, stating its preliminary total I/I work plan expectation. The City will have until September 15, 2014 to submit its mitigation plan for work in **2015**.

If you have any questions regarding the attached chart, the Council On-going I/I program, or data that the MCES may have regarding your community's flow discharges to the MDS, please don't hesitate to call me at (651) 602-1151.

Sincerely,

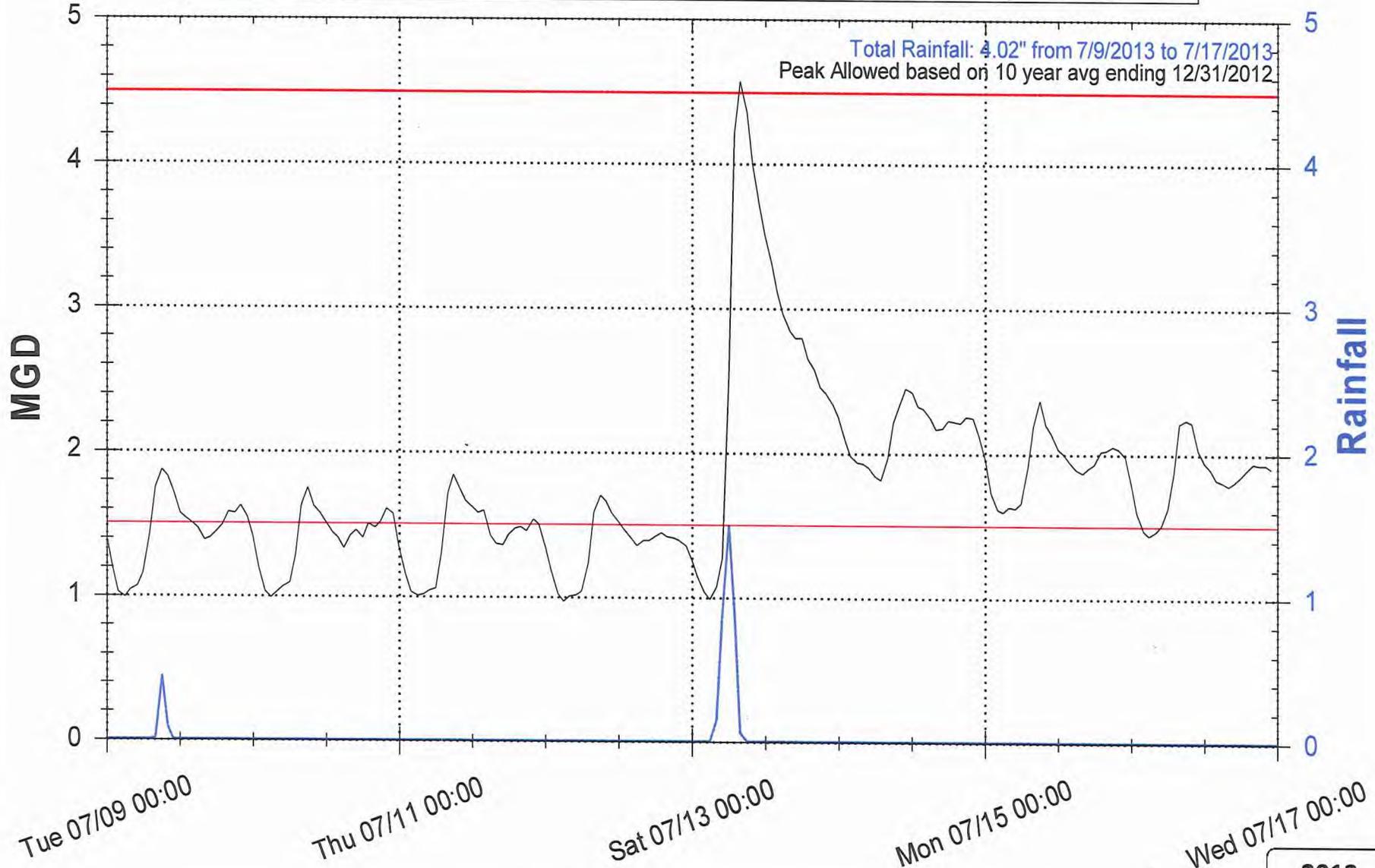
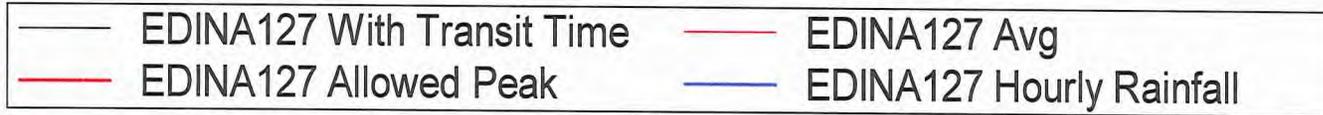
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Kyle D. Colvin, PE
Assistant Manager, Engineering Services Group

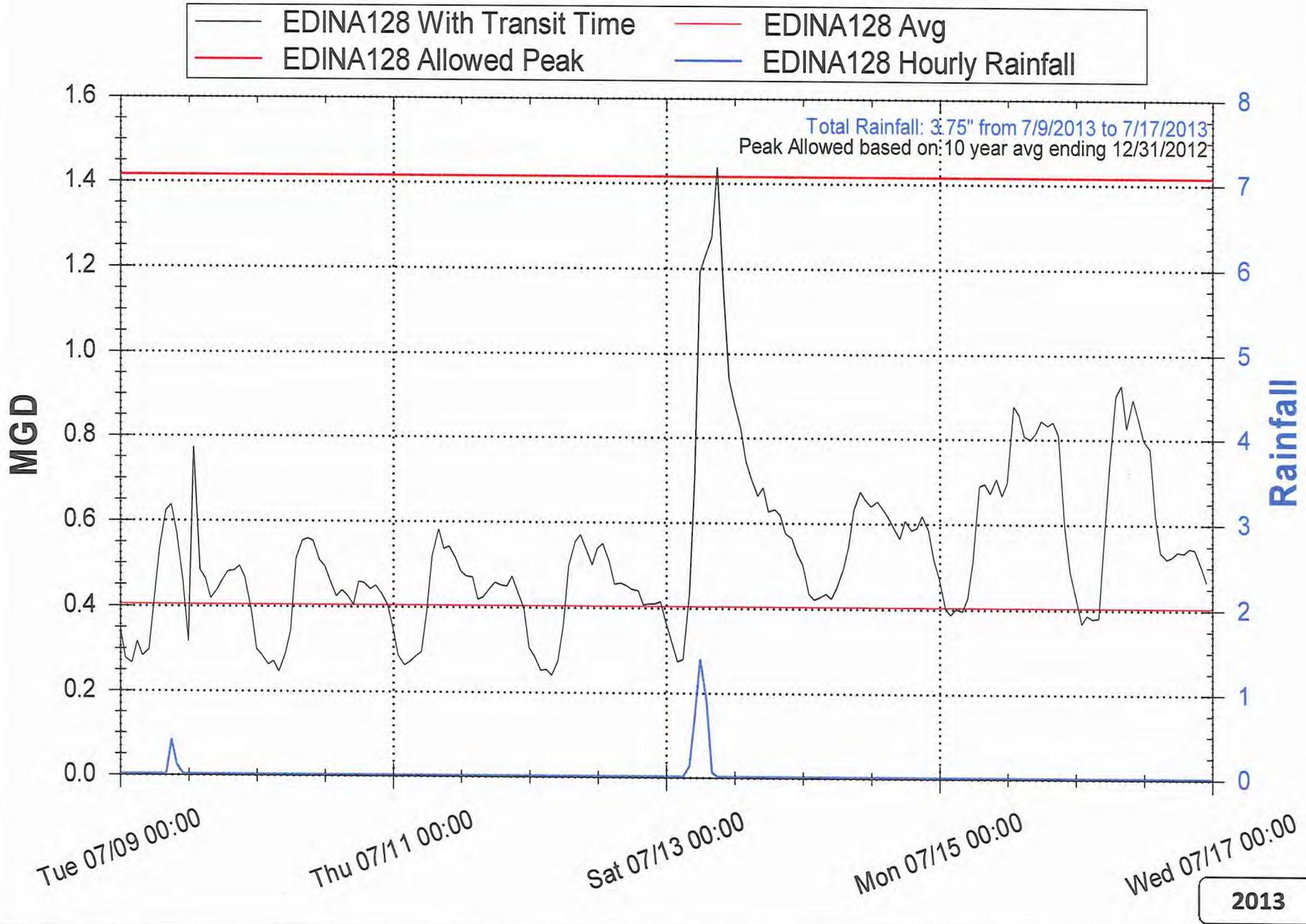
Enclosure(s)

cc: Steve Elkins, Metropolitan Council Representative, District 5
Bill Cook, Manager, Engineering Services

II Report for EDINA127



II Report for EDINA128



August 1, 2014

Chad Millner
Director of City Engineering
City of Edina
4801 W. 50th Street
Edina, MN 55424-1330



RE: Excessive Wastewater Peak Discharges
Period: June 2014

Dear Mr. Millner:

In 2009 the Metropolitan Council formed a Demand Charge Task Force to address the long term impacts of excessive I/I on the regional disposal system. Consistent with the recommendations of the Demand Charge Task Force, the Council began implementing an On-going I/I mitigation program in 2013. The start date for peak flow exceedance measurement for 2015 community work activities began on July 1, 2013 and will continue through June 30, 2014. Any exceedances measured during this period will require the City to prepare a mitigation plan and begin its implementation in 2015.

Attached is a copy of a flow chart(s) for the subject event(s). Your community, either in part or in entirety, exceeded the I/I limit, during these events. The Council has determined that your community's exceedance(s) were as follows:

8.00 Million Gallons per Day (MGD) and occurred at 4:00pm on June 19, 2014 at M127
0.19 Million Gallons per Day (MGD) and occurred at 10:00am on June 19, 2014 at M128
0.67 Million Gallons per Day (MGD) and occurred at 1:00pm on June 19, 2014 at M129

For additional information regarding the Council's On-going I/I program, go to our web site at:

[http://www.metrocouncil.org/Wastewater-Water/Funding-Finance/Rates-Charges/MCES-Inflow-and-Infiltration-\(I-I\)-Program.aspx](http://www.metrocouncil.org/Wastewater-Water/Funding-Finance/Rates-Charges/MCES-Inflow-and-Infiltration-(I-I)-Program.aspx)

Within a few weeks the Council will send your community a letter, stating its preliminary total I/I work plan expectation. The City will have ninety days from the date of this letter to submit its mitigation plan.

If you have any questions regarding the attached chart, the Council On-going I/I program, or data that the MCES may have regarding your community's flow discharges to the MDS, please don't hesitate to call me at (651) 602-1517.

Sincerely,

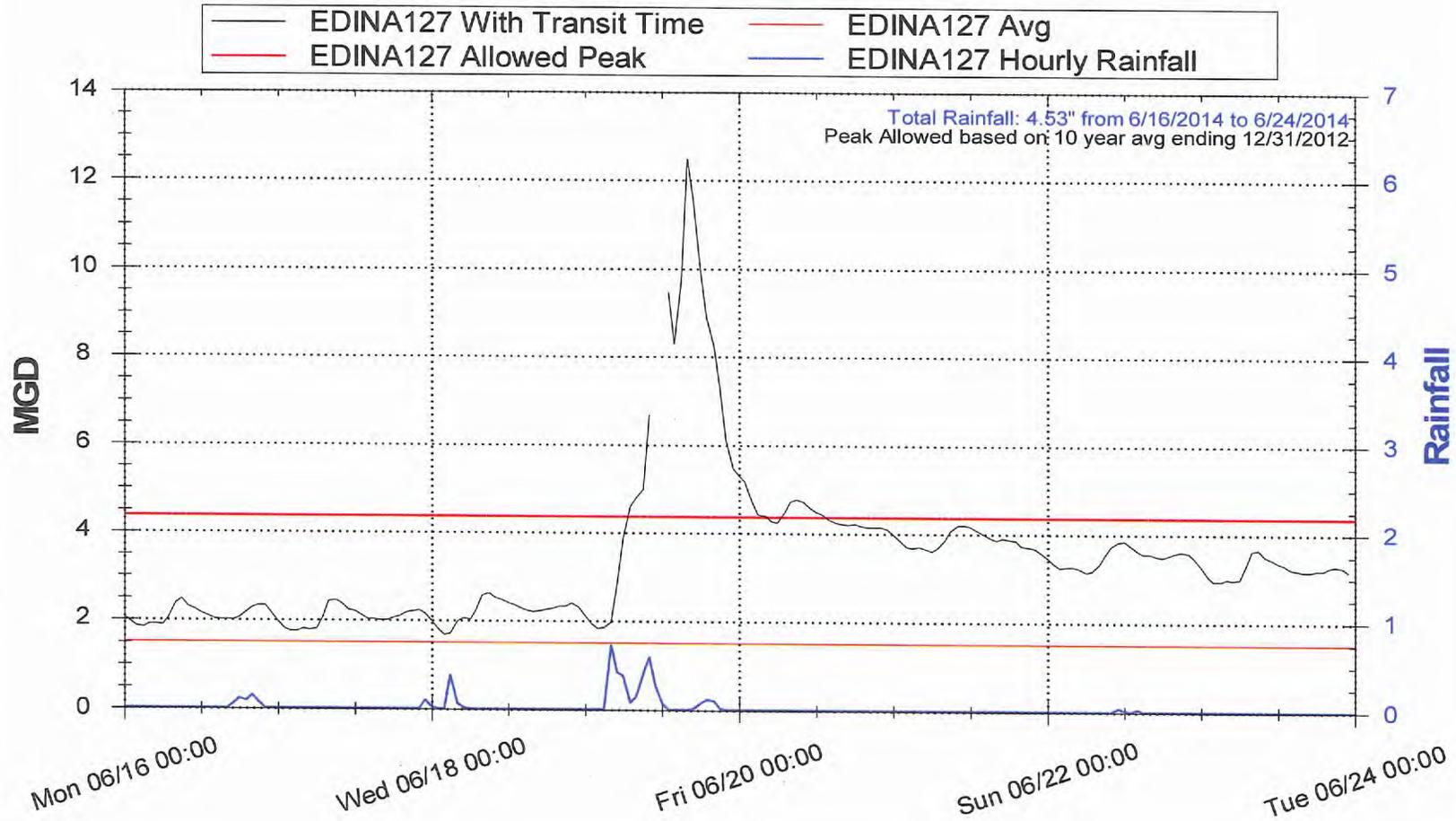
A handwritten signature in blue ink, appearing to read "Rebecca Fabunmi".

Rebecca Fabunmi, PE
Principal Engineer, Engineering Services Group

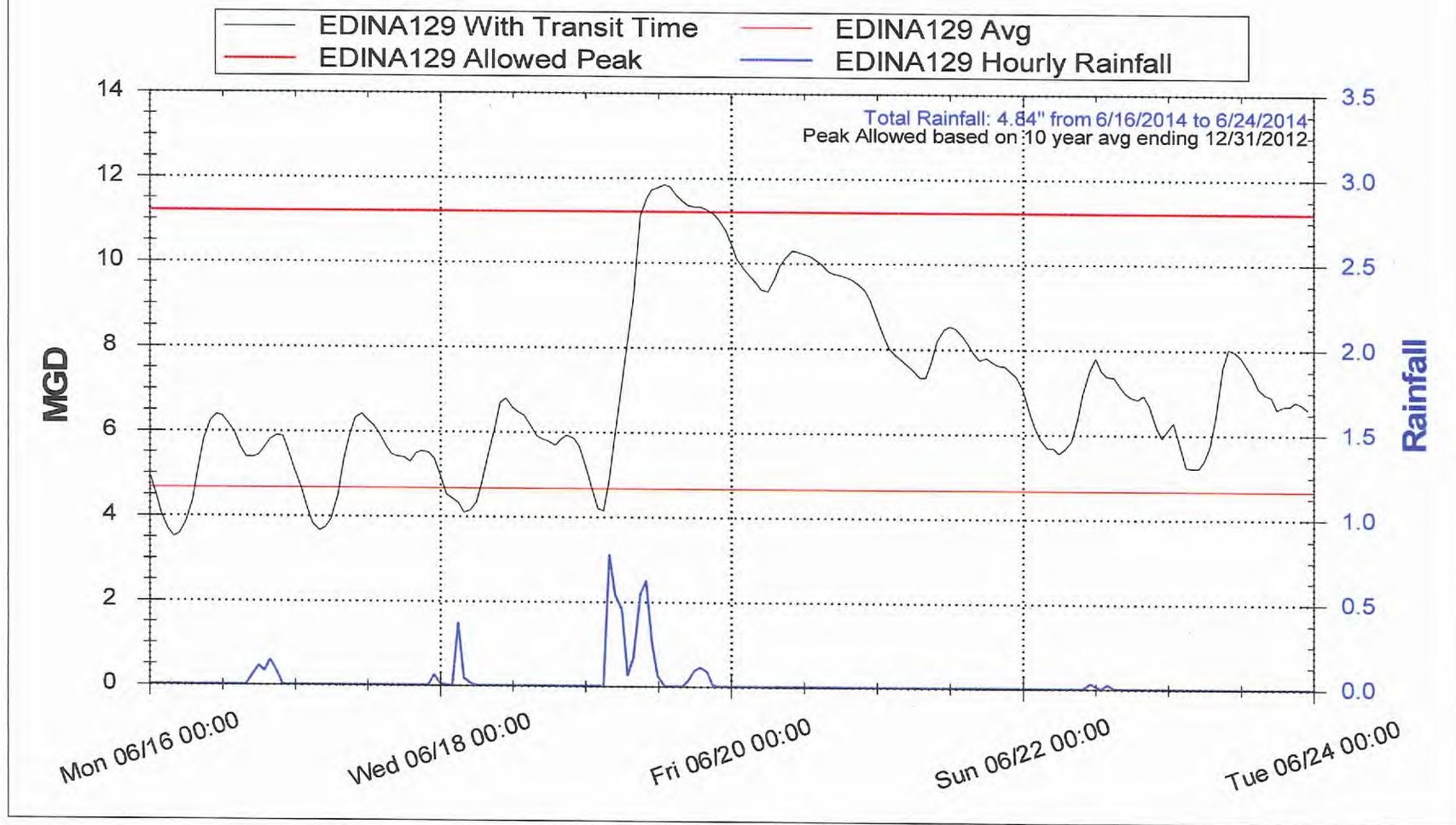
Enclosure(s)

cc: Steve Elkins, Metropolitan Council Representative, District 5
Bill Cook, Manager, Engineering and Planning

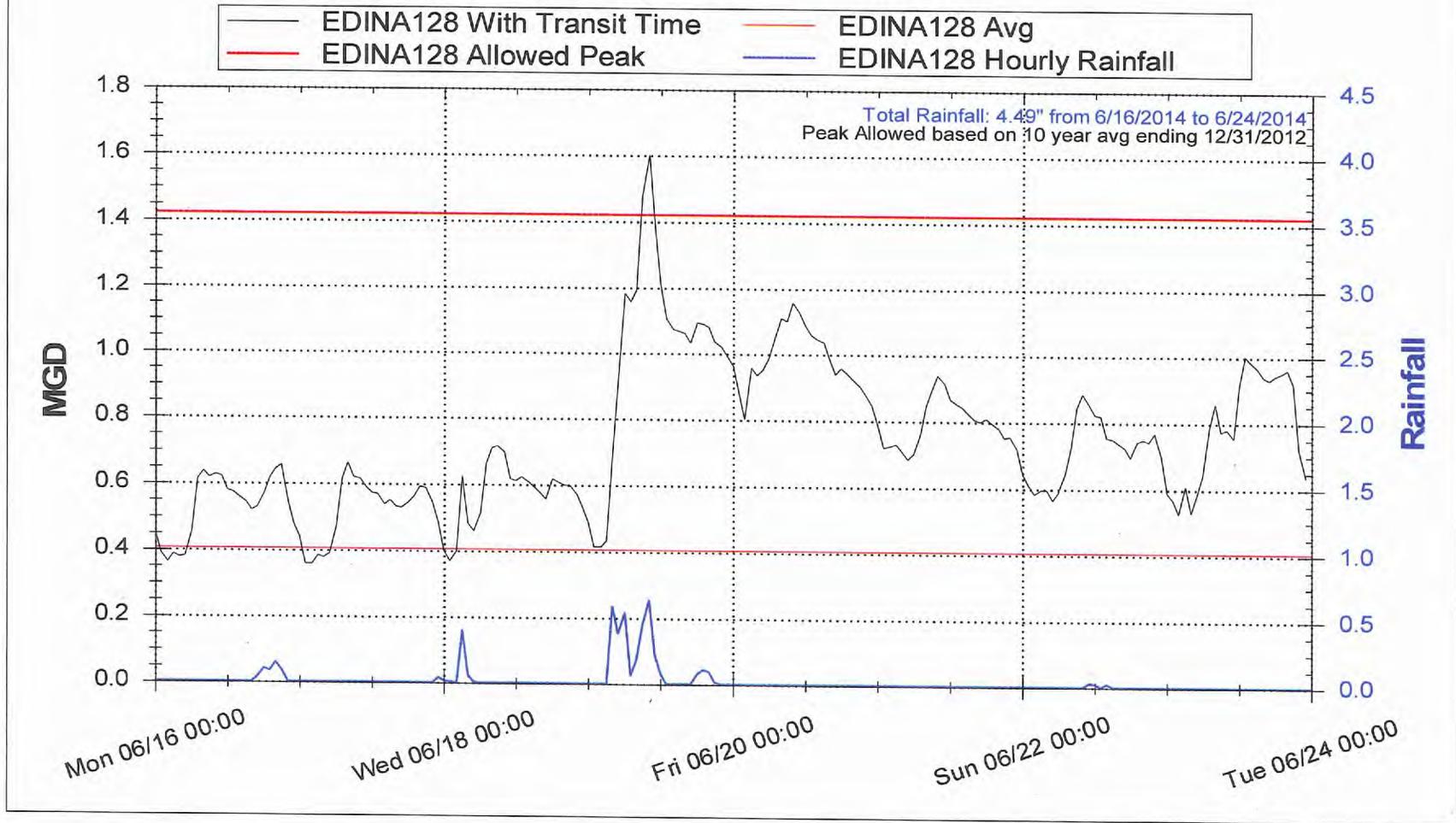
II Report for EDINA127



II Report for EDINA129



II Report for EDINA128



August 18, 2014

Chad Millner
City Engineer
City of Edina
4801 W. 50th Street
Edina, MN 55424-1330

RE: Inflow/Infiltration (I/I) Surcharge to be billed to you in 2015 (preliminary)

Dear Mr. Millner:

This letter is to inform you that your community will have an I/I surcharge added to your 2015 municipal wastewater charge from MCES *unless you take action in the next two months*. You are receiving this letter because your community had at least one excessive I/I event measured between July 1, 2013 and June 30, 2014. If there was more than one measured event, the surcharge is based on the sum of the maximum event in each separately metered area within your community.

Your community's preliminary 2015 I/I Surcharge is: \$919,225.00

A \$3,676,900.00 Total I/I Work Plan Amount for the City was computed from the maximum exceedance(s) as recorded below:

<u>Date</u>	<u>Metershed1</u>	<u>Exceedance1</u>	<u>Metershed2</u>	<u>Exceedance2</u>
6/19/2014	M127	8.00	M128	0.19
	<u>Metershed3</u>	<u>Exceedance3</u>		
	M129	0.67		

The total I/I Work Plan amount cost is spread over 4 years in the Ongoing Surcharge Program and reflects the minimum level of I/I mitigation effort that MCES expects your Community to make over the 4 years – although MCES makes no representation that this will be enough to completely mitigate your excessive I/I.

As with the prior Surcharge program, you have an opportunity to get this preliminary surcharge number adjusted or to apply credits against it, **if you do so within 2 months of the date on this letter**. Details of the adjustments and credits require the same documentation as in prior years. These details are described in the Surcharge Procedure Manual (and additionally in the Demand Charge Task Force Report) which can be obtained at:

[http://www.metrocouncil.org/Wastewater-Water/Funding-Finance/Rates-Charges/MCES-Inflow-and-Infiltration-\(I-I\)-Program.aspx](http://www.metrocouncil.org/Wastewater-Water/Funding-Finance/Rates-Charges/MCES-Inflow-and-Infiltration-(I-I)-Program.aspx)

As an example of credits, this Billable-in-2015 Preliminary Surcharge can be reduced for eligible spending that occurred in 2013 and 2014 if that spending was NOT claimed for credit against a prior surcharge. The surcharge can also be reduced (credited) for eligible work spending planned for 2015. As an example of adjustment, as in the past, if you can show to our satisfaction that the problem can be corrected for less, we will make that adjustment of these numbers.

Chad Millner
August 18, 2014
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If your community does not apply for adjustments or credits within 2 months, the final surcharge will be in the amount stated above and will be billed beginning with the Municipal Wastewater Charge bill for January 2015 service (sent out in mid-December). If a surcharge occurs, these funds will be available as rebates for eligible I/I work beginning in 2016.

If you have questions regarding the basis of the excessive flow determination or other technical aspects of the I/I Surcharge Program, please call Rebecca Fabunmi at 651-602-1517.

We are in the process of developing an I/I Program workshop to confer on the current program and look forward to seeing you there. This will take place Wednesday, October 1, 2014, from 1 – 4 pm at the League of Minnesota Cities. A formal invitation will be delivered in a separate correspondence.

We do appreciate the city's participation in this program which helps the region:

- avoid large and unnecessary MCES capital expenditures (which would increase all municipal wastewater charges),
- avoid consent decrees from the EPA (which have caused some metro areas to spend billions),
- avoided the need for growth moratoriums, and
- minimize the wasting of Minnesota's water resources and
- reduce public health and environmental risks from I/I causing flow to temporarily exceed the capacity of our systems.

Sincerely,



Bryce Pickart
Acting General Manager, Environmental Services

cc: Steve Elkins, Metropolitan Council Member, District 5
Kyle Colvin, Assistant Manager, MCES Engineering Services Group
City Finance Officer

2014 I/I Program Year Community Response Form

This form is to be completed by communities that received an exceedance notification for Program year 2014. If a community chooses to be billed a surcharge, it must complete Part A. If a community chooses to perform mitigation work, it must complete Parts A and B. Send completed form and any supporting documentation to:

Mail: Assistant Manager, Engineering Planning
390 N. Robert Street
St. Paul, MN 55101

Fax: Attn: Assistant Manager, Engineering Services
(651) 602-1030

Email: kyle.colvin@metc.state.mn.us

Part A: Community chooses I/I Surcharge

Community chooses I/I Mitigation Work

Community Name & Mailing Address: _____

Part B: 2014 I/I Mitigation Work Value: \$ _____

a) Public Facility Work: Attach detailed description of the 2014 I/I reduction work. Include work completed in 2013 look back period. Itemize type of work to be completed in 2013 and 2014 on public sanitary sewer system and estimated or actual costs. MCES may request additional documentation to verify actual or planned expenditures. Include the percent of each project that is related to I/I mitigation.

Summary of Costs (attach additional pages as needed): _____

b) Private Property Work: Attach detailed description of community's inspection program for broken service laterals and illegal connections of sump pumps or passive drain tile(s). Complete number & value of work as indicated.

_____ **Sump pump disconnections:** \$150 per dwelling = \$ _____

_____ **Foundation drain disconnections:** \$3,000 per building = \$ _____

_____ **Rain leader disconnections:** \$100 per single family dwelling = \$ _____

_____ **Rain leader disconnections:** \$3,000 per commercial dwelling = \$ _____

_____ **Service lateral repairs:** \$5,000 per repair = \$ _____

Describe Other Work: _____

Total proposed for 2014: \$ _____

Signature of City or Township Official/Title:

Date Signed: _____ Phone #: _____

January 1 2013 to September 1, 2014 Summary of Edina's Eligible Costs for MCES Surcharge/Workplan Lookback

Table D-2 I/I Reduction, Work Eligibility

100%	MH, Casting, Chimney Seals
100%	Dedicated drain tile for sump discharge
50%	Pipe lining
100%	I/I Study and CCTV investigation

PROJECT	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL COST	Eligible Amount	M127	M128	M129	1-MN-345
2014 STRACHAUER PARK B M127	REMOVE CASTING ASSEMBLY	EACH	75.0	\$23.00	\$1,725	\$1,725				
	FURNISH AND INSTALL SANITARY MANHOLE (0'-8')	EACH	1870.0	\$2.00	\$3,740	\$3,740				
	FURNISH AND INSTALL SANITARY MANHOLE - EXTRA DEPTH	LIN FT	330.0	\$1.20	\$396	\$396				
	6" PVC SUMP DRAIN SDR 35 - OPEN CUT	LIN FT	10	\$1,500.00	\$15,000	\$15,000				
	4" PVC SUMP DRAIN INLET (TEE, STUB & PLUG)	EACH	260	\$84.00	\$21,840	\$21,840				
	6" PVC SUMP DRAIN CLEAN OUT	EACH	350	\$22.00	\$7,700	\$7,700				
	6" HDPE SDR 17 SUMP DRAIN (IPS) (HDD)	LIN FT	25	\$5,380.00	\$134,500	\$134,500				
	10" PVC SDR 35 SANITARY SEWER TRUNK PIPE	LIN FT	50.0	\$130.00	\$6,500	\$3,250				
	CONNECT TO EXISTING SANITARY SEWER	EACH	1000.0	\$1.00	\$1,000	\$500				
	6" SANITARY SEWER SERVICE - COMPLETE	EACH	1125.0	\$5.00	\$5,625	\$2,813				
	CURED-IN-PLACE-PIPE LINER FOR 9" VCP SANITARY SEWER	LIN FT	30.0	\$1,587.00	\$47,610	\$23,805				
	CASTING ASSEMBLY (R-1728)	EACH	900.0	\$10.00	\$9,000	\$9,000				
	CASTING ASSEMBLY (R-1728 B)	EACH	800.0	\$1.00	\$800	\$800				
	CASTING ASSEMBLY (R-1733)	EACH	800.0	\$2.00	\$1,600	\$1,600				
	CASTING ASSEMBLY (R-1733 B)	EACH	800.0	\$1.00	\$800	\$800				
	TOTAL					\$257,836	\$227,469			
2014 MORNINGSIDE B 1-MN-343 Unmetered	CEMENTITIOUS LINER SANITARY MANHOLE	LIN FT	95.0	\$223.00	\$21,185	\$21,185				
	6" PVC SUMP DRAIN SDR 35 - OPEN CUT	LIN FT	21	\$4,300.00	\$91,074	\$91,074				
	4" PVC SUMP DRAIN INLET (TEE, STUB & PLUG)	EACH	127	\$113.00	\$14,351	\$14,351				
	6" PVC SUMP DRAIN CLEAN OUT	EACH	215	\$28.00	\$6,020	\$6,020				
	6" HDPE SDR 17 SUMP DRAIN (IPS) (HDD)	LIN FT	22	\$1,750.00	\$37,800	\$37,800				
	10" PVC SDR 35 SANITARY SEWER TRUNK PIPE (0' - 8' DEPTH)	LIN FT	93.9	\$228.00	\$21,400	\$10,700				
	10" PVC SDR 35 SANITARY SEWER TRUNK PIPE (8' - 10' DEPTH)	LIN FT	104.5	\$104.00	\$10,871	\$5,436				
	10" PVC SDR 35 SANITARY SEWER TRUNK PIPE (10' - 12' DEP)	LIN FT	149.9	\$24.00	\$3,597	\$1,798				
	10" PVC SDR 35 SANITARY SEWER TRUNK PIPE (12' - 14' DEP)	LIN FT	149.9	\$20.00	\$2,997	\$1,499				
	SANITARY SEWER SERVICE COMPLETE	EACH	2261.0	\$11.00	\$24,871	\$12,436				
	CURED-IN-PLACE-PIPE LINER FOR 9" VCP SANITARY SEWER	LIN FT	24.0	\$4,265.00	\$102,360	\$51,180				
	CASTING ASSEMBLY (R-1728)	EACH	1070.0	\$21.00	\$22,470	\$22,470				
	CASTING ASSEMBLY (R-1728-B)	EACH	1070.0	\$4.00	\$4,280	\$4,280				
	CASTING ASSEMBLY (R-1733)	EACH	825.0	\$7.00	\$5,775	\$5,775				
	CASTING ASSEMBLY (R-1733-B)	EACH	825.0	\$1.00	\$825	\$825				
	TOTAL					\$369,876	\$286,828			
Total Work Done =						\$2,980,599				
Total Eligible Work Done =						\$2,207,646	\$705,082	\$29,506	\$1,186,230	\$286,828
							\$3,320,000	\$78,850	\$278,050	\$0

January 1 2015 to December 31, 2018 Planned Sanitary I/I Work (2014 MCES Surcharge Work Plan)

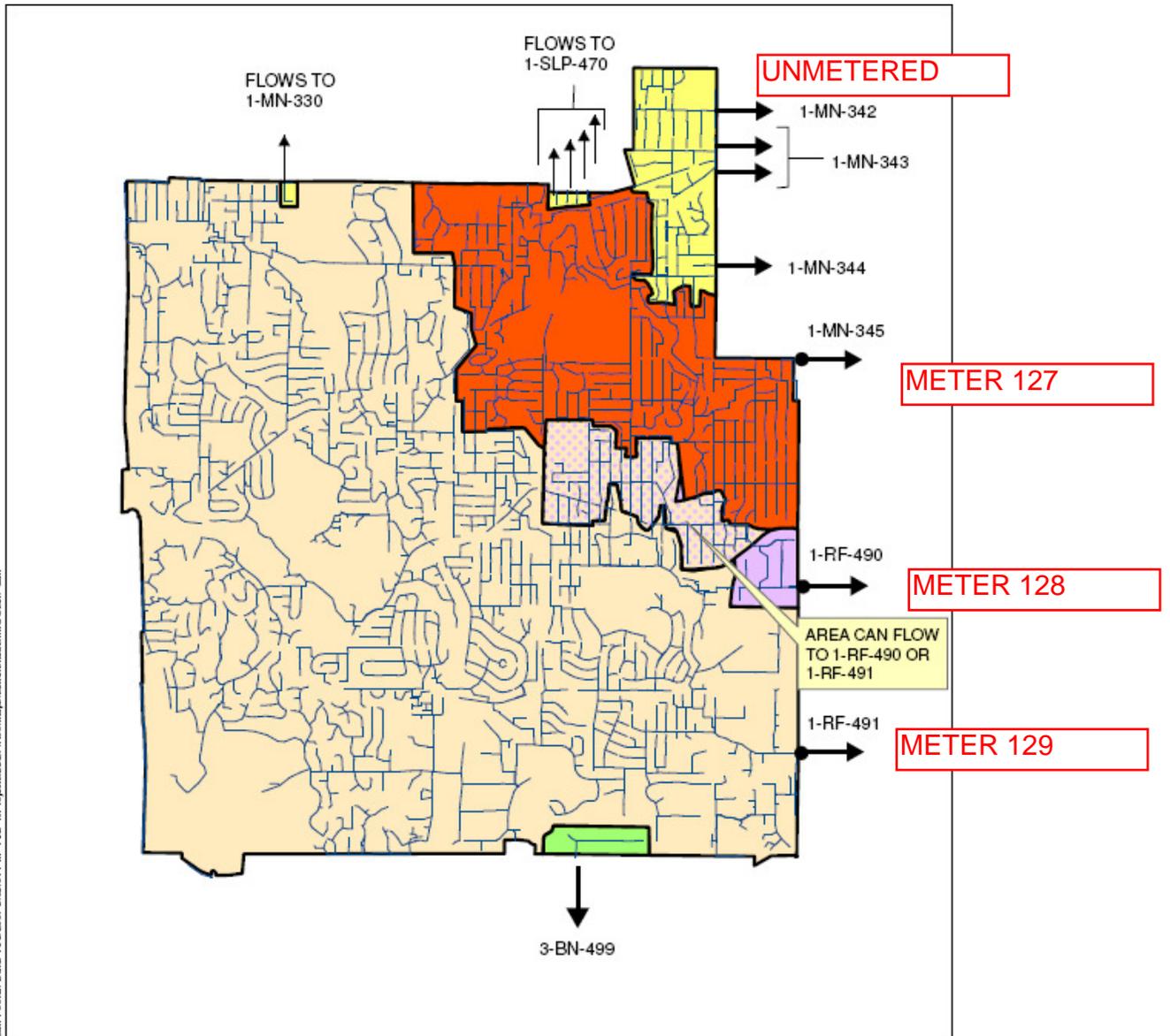
1.0 MH, Casting, Chimney Seals
 1.0 Dedicated drain tile for sump discharge
 0.5 Pipe lining
 1.0 I/I Study and CCTV investigation

PROJECT	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL COST	Eligible Amount	M127	M128	M129	1-MN-345
2015-2018 EDINA STAFF	SPOT LID REPLACEMENT	EACH	450.0	\$70.00	\$31,500	\$31,500	10,395	10,395	10,710	
2015 BIRCHCREST B M129	PIPE LINING	LF			\$94,000	\$47,000				
	WYE AND SANITARY REPAIR	LF			\$47,000	\$23,500				
	MANHOLE REHABILITATION AND REPAIR	LF			\$28,200	\$28,200				
	CASTING ASSEMBLY	EA			\$18,800	\$18,800				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$70,500	\$70,500				
					\$258,500	\$188,000				188,000
2015 ARDEN PARK D 65% M127 35% 1-MN-345 Unmetered	PIPE LINING	LF			\$375,100	\$187,550				
	WYE AND SANITARY REPAIR	LF			\$187,550	\$93,775				
	MANHOLE REHABILITATION AND REPAIR	LF			\$112,530	\$112,530				
	CASTING ASSEMBLY	EA			\$75,020	\$75,020				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$281,325	\$281,325				
					\$1,031,525	\$750,200	487,630			262,570
2015 COUNTRYSIDE H (C&G) M129	PIPE LINING	LF			\$141,650	\$70,825				
	WYE AND SANITARY REPAIR	LF			\$70,830	\$35,415				
	MANHOLE REHABILITATION AND REPAIR	LF			\$42,500	\$42,500				
	CASTING ASSEMBLY	EA			\$28,320	\$28,320				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$106,238	\$106,238				
					\$389,538	\$283,298				283,298
2015 PROSPECT KNOLLS B (C&G) M129	PIPE LINING	LF			\$26,100	\$13,050				
	WYE AND SANITARY REPAIR	LF			\$13,050	\$6,525				
	MANHOLE REHABILITATION AND REPAIR	LF			\$7,830	\$7,830				
	CASTING ASSEMBLY	EA			\$5,220	\$5,220				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$19,575	\$19,575				
					\$71,775	\$52,200				52,200
2015 DEWEY HILL G (C&G) M129	PIPE LINING	LF			\$24,150	\$12,075				
	WYE AND SANITARY REPAIR	LF			\$12,080	\$6,040				
	MANHOLE REHABILITATION AND REPAIR	LF			\$7,250	\$7,250				
	CASTING ASSEMBLY	EA			\$4,820	\$4,820				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$18,113	\$18,113				
					\$66,413	\$48,298				48,298
2015 VALLEY VIEW ROAD (MSA) M129	PIPE LINING	LF			\$10,000	\$5,000				
	WYE AND SANITARY REPAIR	LF			\$2,500	\$1,250				
	MANHOLE REHABILITATION AND REPAIR	LF			\$2,500	\$2,500				
	CASTING ASSEMBLY	EA			\$5,000	\$5,000				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$20,000	\$20,000				
					\$40,000	\$33,750				33,750
2016 STRACHAUER PARK A (C&G) M127	PIPE LINING	LF			\$134,750	\$67,375				
	WYE AND SANITARY REPAIR	LF			\$67,380	\$33,690				
	MANHOLE REHABILITATION AND REPAIR	LF			\$40,430	\$40,430				
	CASTING ASSEMBLY	EA			\$26,940	\$26,940				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$101,063	\$101,063				
					\$370,563	\$269,498	269,498			
2016 GOLF TERRACE B 90% M127 10% M128	PIPE LINING	LF			\$364,400	\$182,200				
	WYE AND SANITARY REPAIR	LF			\$182,200	\$91,100				
	MANHOLE REHABILITATION AND REPAIR	LF			\$109,320	\$109,320				
	CASTING ASSEMBLY	EA			\$72,880	\$72,880				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$273,300	\$273,300				
					\$1,002,100	\$728,800	655,920	72,880		
2016 MORNINGSIDE A WHITE OAKS C 1-MN-345 Unmetered	PIPE LINING	LF			\$95,450	\$47,725				
	WYE AND SANITARY REPAIR	LF			\$47,730	\$23,865				
	MANHOLE REHABILITATION AND REPAIR	LF			\$28,640	\$28,640				
	CASTING ASSEMBLY	EA			\$19,080	\$19,080				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$71,588	\$71,588				
					\$262,488	\$190,898				190,898
2016 PRESIDENTS AREA SANITARY TRUNK REHAB M129	PIPE LINING	LF			\$500,000	\$250,000				
	WYE AND SANITARY REPAIR	LF			\$250,000	\$125,000				
	MANHOLE REHABILITATION AND REPAIR	LF			\$150,000	\$150,000				
	CASTING ASSEMBLY	EA			\$100,000	\$100,000				
					\$1,000,000	\$625,000				625,000
2016 TRACY (MSA) M129	PIPE LINING	LF			\$75,000	\$37,500				
	WYE AND SANITARY REPAIR	LF			\$25,000	\$12,500				
	MANHOLE REHABILITATION AND REPAIR	LF			\$25,000	\$25,000				
	CASTING ASSEMBLY	EA			\$25,000	\$25,000				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$50,000	\$50,000				
					\$200,000	\$150,000				150,000
2016 PARKLAWN (MSA) M129	PIPE LINING	LF			\$75,000	\$37,500				
	WYE AND SANITARY REPAIR	LF			\$25,000	\$12,500				
	MANHOLE REHABILITATION AND REPAIR	LF			\$25,000	\$25,000				
	CASTING ASSEMBLY	EA			\$25,000	\$25,000				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$50,000	\$50,000				
					\$200,000	\$150,000				150,000

January 1 2015 to December 31, 2018 Planned Sanitary I/I Work (2014 MCES Surcharge Work Plan)

1.0 MH, Casting, Chimney Seals
 1.0 Dedicated drain tile for sump discharge
 0.5 Pipe lining
 1.0 I/I Study and CCTV investigation

PROJECT	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL COST	Eligible Amount	M127	M128	M129	1-MN-345
2017 BIRCHCREST A M129	PIPE LINING	LF			\$160,750	\$80,375				
	WYE AND SANITARY REPAIR	LF			\$80,380	\$40,190				
	MANHOLE REHABILITATION AND REPAIR	LF			\$48,230	\$48,230				
	CASTING ASSEMBLY	EA			\$32,140	\$32,140				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$120,563	\$120,563				
					\$442,063	\$321,498				321,498
2017 COUNTRYSIDE B M129	PIPE LINING	LF			\$1,450	\$725				
	WYE AND SANITARY REPAIR	LF			\$730	\$365				
	MANHOLE REHABILITATION AND REPAIR	LF			\$440	\$440				
	CASTING ASSEMBLY	EA			\$280	\$280				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$1,088	\$1,088				
					\$3,988	\$2,898				2,898
2017 NORMANDEALE PARK D M129	PIPE LINING	LF			\$236,650	\$118,325				
	WYE AND SANITARY REPAIR	LF			\$118,330	\$59,165				
	MANHOLE REHABILITATION AND REPAIR	LF			\$71,000	\$71,000				
	CASTING ASSEMBLY	EA			\$47,320	\$47,320				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$177,488	\$177,488				
					\$650,788	\$473,298				473,298
2018 CHOWEN PARK A&B (C&G) M127	PIPE LINING	LF			\$136,150	\$68,075				
	WYE AND SANITARY REPAIR	LF			\$68,080	\$34,040				
	MANHOLE REHABILITATION AND REPAIR	LF			\$40,850	\$40,850				
	CASTING ASSEMBLY	EA			\$27,220	\$27,220				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$102,113	\$102,113				
					\$374,413	\$272,298				272,298
2018 DEWEY HILL B-E (C&G) M129	PIPE LINING	LF			\$273,300	\$136,650				
	WYE AND SANITARY REPAIR	LF			\$136,650	\$68,325				
	MANHOLE REHABILITATION AND REPAIR	LF			\$81,990	\$81,990				
	CASTING ASSEMBLY	EA			\$54,660	\$54,660				
	SUMP DRAIN LINE AND APPURTENANCES	LF			\$204,975	\$204,975				
					\$751,575	\$546,600				546,600
2018 MINNEHAHA TRUNK REHABILITATION (AREA 3 AND 5) M127	PIPE LINING	LF			\$550,000	\$275,000				
	WYE AND SANITARY REPAIR	LF			\$275,000	\$137,500				
	MANHOLE REHABILITATION AND REPAIR	LF			\$165,000	\$165,000				
	CASTING ASSEMBLY	EA			\$110,000	\$110,000				
						\$1,100,000	\$687,500			
Total Work Planned =						\$8,247,225				
Total Eligible Work Planned =						\$5,805,530	2,110,943	83,275	3,157,845	453,468
2015 Plan plus 2013-2014 lookback										
2015 Plan plus 2013-2014 lookback							2,814,065	110,822	4,342,109	740,296
GOAL						3,320,000	78,850	278,050	0	
GOAL						-505,935				



LEGEND

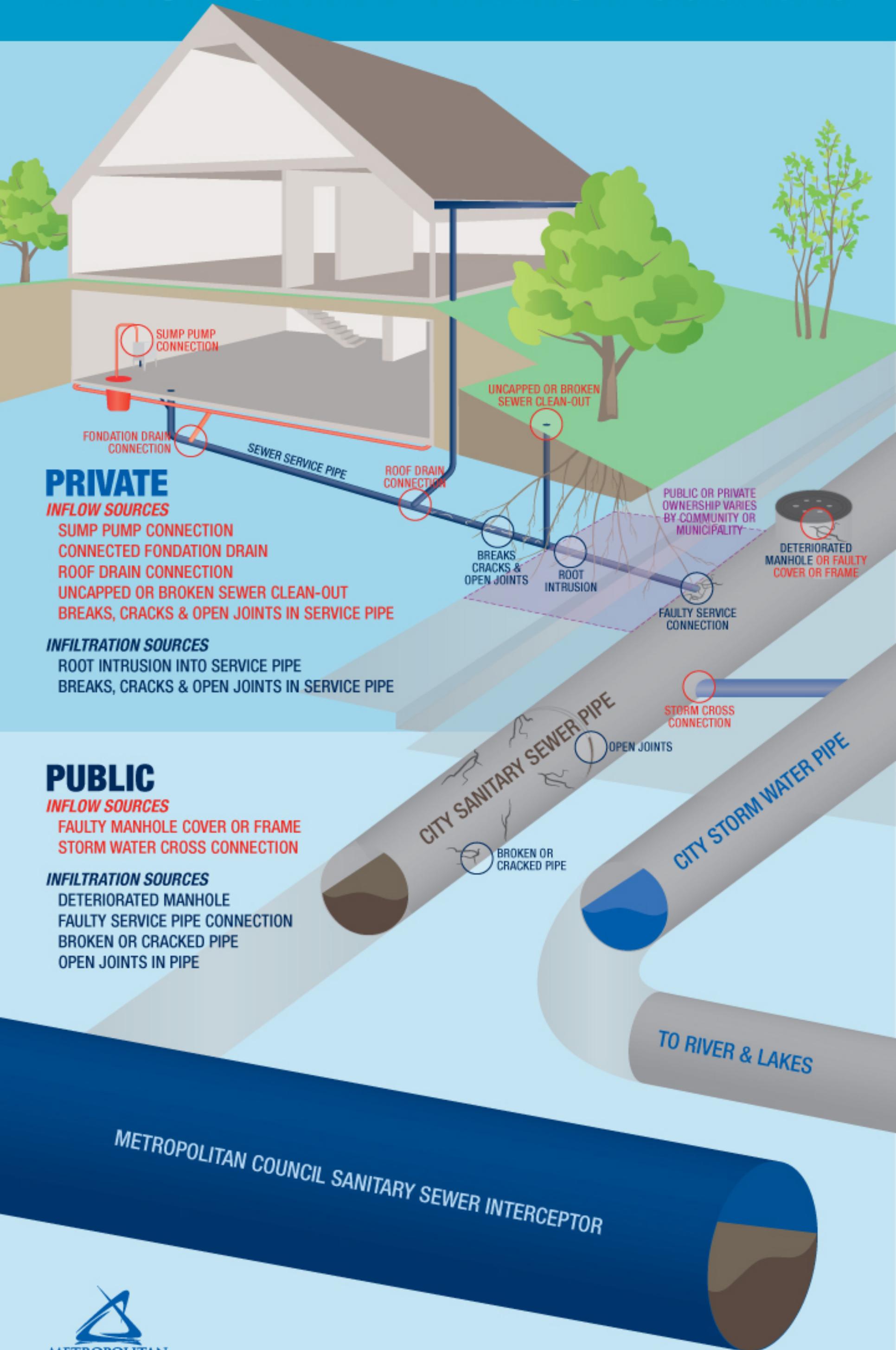
- MCES INTERCEPTOR
- LOCAL SEWER OUTLET
- LOCAL SEWER PIPE
- MCES FLOWMETER
- 1-RF-491 MCES INTERCEPTOR LABEL



Figure S-2

MAJOR SEWER SHEDS AND OUTLETS
2008 Comprehensive Plan
City of Edina
Edina, MN

INFLOW & INFILTRATION SOURCES



Summary of I/I mitigation work plan amount sorted per capita and total

CITY	WORK PLAN		AMOUNT / CAPITA	CITY	WORK PLAN		AMOUNT / CAPITA
	AMOUNT	POPULATION			AMOUNT	POPULATION	
Newport	\$838,300	3453	\$243	St. Paul	\$33,785,150	290770	\$116
Maple Plain	\$435,750	1803	\$242	Edina	\$3,676,900	49050	\$75
Minnetonka Beach	\$99,600	555	\$179	Eden Prairie	\$2,751,450	62258	\$44
Excelsior	\$394,250	2230	\$177	West St. Paul	\$2,709,950	19708	\$138
Medicine Lake	\$66,400	379	\$175	Roseville	\$2,552,250	34666	\$74
Greenwood	\$116,200	704	\$165	Chanhassen	\$2,328,150	23840	\$98
St. Anthony	\$1,191,050	8392	\$142	New Hope	\$1,523,050	20728	\$73
West St. Paul	\$2,709,950	19708	\$138	Plymouth	\$1,195,200	72928	\$16
Shorewood	\$929,600	7468	\$124	St. Anthony	\$1,191,050	8392	\$142
Long Lake	\$215,800	1803	\$120	Chaska	\$1,020,900	24074	\$42
St. Paul	\$33,785,150	290770	\$116	Mound	\$933,750	9238	\$101
Lilydale	\$83,000	803	\$103	Shorewood	\$929,600	7468	\$124
Mound	\$933,750	9238	\$101	Columbia Heights	\$921,300	19667	\$47
Chanhassen	\$2,328,150	23840	\$98	Newport	\$838,300	3453	\$243
Lauderdale	\$199,200	2430	\$82	Golden Valley	\$831,577	20776	\$40
Tonka Bay	\$116,200	1510	\$77	Minnetonka	\$817,550	51123	\$16
Edina	\$3,676,900	49050	\$75	Robbinsdale	\$556,100	14263	\$39
Roseville	\$2,552,250	34666	\$74	Shoreview	\$547,800	25628	\$21
New Hope	\$1,523,050	20728	\$73	Orono	\$543,650	7720	\$70
Orono	\$543,650	7720	\$70	Maple Plain	\$435,750	1803	\$242
Deephaven	\$249,000	3718	\$67	North St. Paul	\$427,450	11694	\$37
Medina	\$332,000	5045	\$66	Mendota Heights	\$398,400	11138	\$36
St. Bonifacious	\$145,250	2332	\$62	Excelsior	\$394,250	2230	\$177
Columbia Heights	\$921,300	19667	\$47	Oakdale	\$352,750	27726	\$13
Eden Prairie	\$2,751,450	62258	\$44	Medina	\$332,000	5045	\$66
Chaska	\$1,020,900	24074	\$42	Waconia	\$323,700	11222	\$29
Golden Valley	\$831,577	20776	\$40	Crystal	\$323,700	22524	\$14
Robbinsdale	\$556,100	14263	\$39	Arden Hills	\$307,100	9750	\$31
North St. Paul	\$427,450	11694	\$37	Town of White Bear	\$279,461	24311	\$11
Mendota Heights	\$398,400	11138	\$36	Deephaven	\$249,000	3718	\$67
Arden Hills	\$307,100	9750	\$31	Long Lake	\$215,800	1803	\$120
Waconia	\$323,700	11222	\$29	Lauderdale	\$199,200	2430	\$82
Shoreview	\$547,800	25628	\$21	St. Bonifacious	\$145,250	2332	\$62
Plymouth	\$1,195,200	72928	\$16	Maple Grove	\$128,650	64420	\$2
Minnetonka	\$817,550	51123	\$16	Greenwood	\$116,200	704	\$165
Crystal	\$323,700	22524	\$14	Tonka Bay	\$116,200	1510	\$77
Oakdale	\$352,750	27726	\$13	Minnetonka Beach	\$99,600	555	\$179
Town of White Bear	\$279,461	24311	\$11	Lilydale	\$83,000	803	\$103
Hopkins	\$70,550	17982	\$4	Hopkins	\$70,550	17982	\$4
Maple Grove	\$128,650	64420	\$2	Medicine Lake	\$66,400	379	\$175
St. Louis Park	\$8,300	46362	\$0	St. Louis Park	\$8,300	46362	\$0