Wayne County Rouge Valley Sewage Disposal System

Annual System Monitoring Report for 2015

Report to Wayne County and Communities

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Section 1

Noteworthy Items

Noteworthy Items

This annual report provides a summary of the flow monitoring data for Wayne County's Rouge Valley Sewage Disposal System (RVSDS) for January through December 2015. This report supersedes the four (4) quarterly reports previously issued for 2015 and is intended to provide the best available estimate of flow rates for each meter district and community during the dry and wet weather conditions that occurred in 2015. For some meter districts and communities, the data have been revised from the quarterly reports. Any monitoring plan updates made in the annual period and major findings from the RVSDS 2015 system monitoring plan are presented below.

1. Figure 2-1 shows a schematic of the RVSDS interceptors and the locations of the flow meters and level sensors. Figure 2-2 shows the RVSDS incremental meter district and interceptor line connection areas. Figure 2-3 shows the location of rain gages within and surrounding the RVSDS service area.
2. Two new community line connections were identified and delineated.
   a. The City of Wayne provided drawings of a force main which discharges directly into the Wayne Interceptor. The new line connection was labeled as Number 200, and its service area was split from the service area of line connection Number 161.
   b. A regulator within the Dearborn Heights collection system was identified and delineated. This new connection was labeled as Number 199, and its service area was split from the service area of line connection Number 7.
3. In March 2015, two new flow Meters, P-28 and P-29, were installed near the intersection of Inkster Road and Rougeway Street, in Livonia. Meter P-28 was installed in a 54" sewer which is tributary to the Rouge Valley Interceptor (RVI) (Inkster Arm). Meter P-29 was installed in a 42" sewer which is also tributary to the RVI (Inkster Arm). These two new flow meters will improve the flow metering along the Inkster Arm. The new flow meters are ADS Model "Triton+".
4. In April 2015, a new flow Meter WC-S-1A was installed in the 102" RVI along Oakwood Boulevard east of Dix Street, in Oakwood Heights. The location is upstream of Meter WC-S-1, and upstream of the stop log and siphon chamber which interconnects the RVI and Northwest Interceptor (NWI). This new flow meter will measure the flow rate from the RVSDS without any possible flow exchange with the NWI at the chamber. The new flow meter is an ADS Model "Triton+".
5. In September 2015, six new flow meters were installed. The new flow meters are ADS Model "Triton+". The flow meters were installed in the Middle Rouge Branch of the RVSDS at Outer Drive and at Telegraph Road. Parallel meters were installed in the Middle Rouge Parkway Interceptor Extension (MRPIE), the RVI, and the Middle Rouge Interceptor Relief (MRIR) at these locations. These meters will provide additional data that will be used in the Long Term Corrective Action Plan (LTCAP) work. The new flow meters are named P-30 through P-35. Figure A6 shows the locations of these new meters.

6. Wayne County replaced most of the flow meters in the RVSDS during the spring and fall of 2015 under the Priority 1B SCADA Improvements Project. Table 1-1 lists the installation date of all flow meters which have been installed or replaced this year. A period break is included in the database on the date of replacement for each flow meter.

Table 1-1
Rouge Valley Sewage Disposal System
New Flow Meter Installation Date

Meter	Installation Date
P-1	4/8/2015
P-3	4/8/2015
P-7	4/8/2015
P-8	4/9/2015
P-9	4/15/2015
P-10	4/15/2015
P-11	4/17/2015
P-12	3/31/2015
P-13	4/17/2015
P-14	4/16/2015
P-15	4/9/2015
P-17	4/9/2015
P-19	4/16/2015
P-20	4/9/2015

Meter	Installation Date
P-21	4/9/2015
P-25	4/9/2015
P-26	4/8/2015
P-28[1]	3/16/2015
P-29[1]	3/16/2015
P-30[1]	9/11/2015
P-31[1]	9/11/2015
P-32[1]	9/11/2015
P-33[1]	9/11/2015
P-34[1]	9/11/2015
P-35[1]	9/11/2015
LV-Basin	12/22/2015
WC-S-1A[1]	4/15/2015

Notes:
1. New flow meter location

7. Dye-dilution testing to verify meter accuracy has been conducted for Meters P-9, P-10, P-11, P-12, P-14, P-19, P-21, P-24, P-25, and WE-28. The dye test results provided important information that was used to adjust the flow meter data. These adjustments provide more reasonable estimates of flow rates for the meters, meter districts, and communities. The results of these dye tests are shown in Table 1-2.

8. Over the year, the flow meters and level sensors in the RVSDS operated and provided useful data for 97.3% of the period.

9. The intermittent discharges of spent glycol from Pond 3 West at the Wayne County Airport Authority (WCAA) to RVSDS are incorporated into the flow analysis presented in this annual system monitoring report. Flows from WCAA to RVSDS only occur during dry weather conditions. The WCAA forcemain discharges into RVSDS within Meter District P-20. As a result, the sewage flow meter math for Inkster, Wayne and Westland has been adjusted. This updated sewage flow meter math was first presented in the fourth quarterly system monitoring report of 2015.

Table 1-2
Rouge Valley Sewage Disposal System
Dye-Dilution Test Summary

Meter	Dye Test Date	Adjustment Factor	Period Adjustment Factor
P-9	9/1/2015	0.73	0.73
P-10	8/27/2015	0.97	0.97
P-11	8/26/2015	0.96	0.96
P-12	8/26/2015	1.01	1.01
P-14	9/10/2015	1.00	1.00
P-19	9/16/2015	0.94	0.94
P-21	9/16/15	0.94	0.94
P-24	12/4/2014	0.92	0.87
	9/8/2015	0.82	
P-25	9/8/2015	0.95	0.95
WE-28	10/15/2015	0.72	0.72

10. The sewage flow meter math for Romulus and Wayne has been updated to provide a more accurate estimate of each communities flow rate for Meter District P-17. The new sewage flow meter math for Meter District P-17 now allocates 38% of the incremental flow rate to Romulus and 62% to Wayne. The sewage flow meter math is based on temporary flow meter data from 2005, which more accurately accounted for the significant industrial users in Meter District P-17. This updated sewage flow meter math was first presented in the fourth quarterly system monitoring report of 2015. For all previous quarterly and annual system monitoring reports, the sewage flow meter math for Meter District P-17 was based on residential population, which did not account for the significant industrial users in Meter District P-17. The significant industrial user's water consumption data for 2015 was obtained, reviewed, and found to support the new sewage flow meter math.

11. The definition of significant storm events was updated to be consistent with other Wayne County System Monitoring Reports. The updated definitions is as follows:

    Significant storm events are defined as those with at least 0.5 inches of rainfall occurring on a single day with an event total of at least 1.0 inch of rainfall. Significant storm events are separated by at least 2 consecutive days without precipitation over 0.1 inches. This storm event definition is based on the arithmetic mean of the rainfall recorded by all rain gages used in the analysis for that storm.

12. There were nine significant storm events during this annual reporting period. A summary of these events is presented in Table 6-1. Total rainfall values for each rain gage and each event are presented in Tables 8-1 through 8-9.

13. A summary of maximum allowable flow limit exceedences by community during significant storm events for 2015 are listed in Table 1-3. Plymouth City, Garden City, Dearborn Heights, Inkster and WTUA exceeded the maximum allowable flow limits for at least one significant storm event in 2015. Oakland County (Novi), Northville City, Livonia, Westland, Redford Township, Van Buren Township, Romulus and Wayne did not exceed the maximum allowable flow limits for any of the significant storm events in 2015.

Table 1-3
Rouge Valley Sewage Disposal System
Maximum Allowable Flow Limit Exceedences during 2015 Significant Storm Events

Event	Date	Precipitation (inches)	Customer												
			Oakland County (Novi)	Plymouth City	Northville City	Garden City	Livonia	Westland	Redford Twp	Dearborn Heights	Van Buren Twp	Romulus	Wayne	Inkster	WTUA
1	4/7-10/2015	1.06	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No
2	5/5-11/2015	1.81	No	Yes	No	No	No	No	No	No	No	No	No	No	No
3	5/30-31-2015	2.49	No	Yes	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
4	6/12-18/2015	1.96	No	Yes	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
5	6/22-23/2015	1.10	No	Yes	No	Yes	No	No	No	No	No	No	No	Yes	No
6	8/2-3/2015	1.06	No	Yes	No	No	No	No	No	No	No	No	No	No	No
7	8/19/20/2015	1.00	No	No	No	No	No	No	No	No	No	No	No	No	No
8	10/27-29/2015	1.24	No	No	No	No	No	No	No	No	No	No	No	No	No
9	12/26-29/2015	1.22	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No
Total			0/9	7/9	0/9	5/9	0/9	0/9	0/9	2/9	0/9	0/9	0/9	3/9	2/9

14. The total precipitation at the Detroit Metropolitan Wayne County Airport (DTW) for the year was 30.32 inches, which is 3.15 inches below normal.

15. Table 1-4 lists the peak flow rates and estimated flood frequencies on the Middle and Lower Rouge Rivers for each storm event. The peak flow rate and return frequency on the Middle Rouge River occurred during Event 4, on June 15, 2015. The estimated flood frequency for the Middle Rouge River for this event was 35 months (2.9 years). The peak flow rate and return frequency on the Lower Rouge River occurred during Event 5, on June 24, 2015. The estimated flood frequency for the Lower Rouge River for this event was 5 months (0.4 years). The United States Geological Survey (USGS) Gage #04167000 is located on the Middle Rouge River just downstream of Inkster Road in Dearborn Heights. USGS Gage #04168000 is located on the Lower Rouge River just downstream of John Daly Road in Inkster.

Table 1-4
Rouge Valley Sewage Disposal System
Rouge River Flood Frequency in the 2015 Monitoring Period

Significant Storm Event		Peak 15-minute Flow Rate (cfs)		Estimated Flood Frequency (months)	
Event No.	Date	Middle Rouge USGS Gage #04167000	Lower Rouge USGS Gage #04168000	Middle Rouge USGS Gage #04167000	Lower Rouge USGS Gage #04168000
1	4/7-10/2015	418	615	2	3
2	5/5-11/2015	424	391	2	1
3	5/30-31-2015	964	803	14	5
4	6/12-18/2015	1210	830	35	5
5	6/22-23/2015	860	854	10	5
6	8/2-3/2015	386	305	2	< 1
7	8/19/20/2015	312	242	< 1	< 1
8	10/27-29/2015	294	260	< 1	< 1
9	12/26-29/2015	362	522	2	2
Estimated Flood Frequency		315	352	1-month	
		734	954	6-month	
		944	1,212	1-year	
		1,066	1,317	2-year	
		1,549	1,938	5-year	
		1,988	2,507	10-year	
		3,255	4,171	100-year	

16. Meter WC-S-3 is a full-pipe Doppler flow meter that is setup to report flow rate in units of million gallons per day (MGD). During a maintenance visit on December 10, 2014 the meter switched units and began reporting flow rate in cubic feet per second (cfs). The change in reported flow rate units went unnoticed until a site visit on September 30, 2015. Consequently, the data from December 10, 2014 through September 30, 2015 has been adjusted to units of MGD.

17. Flow meter WC-S-3 is owned by Wayne County and operated by the Detroit Water and Sewerage Department (DWSD). On October 5, 2015 a sensor on Meter WC-S-3 failed. The failed sensor was sent to ISCO for repair. As a result, Meter WC-S-3 was out of service from October 5, 2015 through December 31, 2015. During this period, DWSD estimated the daily average flow rate for this meter with a correlation to an unspecified DWSD meter. The DWSD correlated flow rate was not used in this annual report. In this report, a correlation to Meters P-9, P-10, and P-11 was developed by Applied Science, Inc. (ASI) and used to estimate Meter WC-S-3 flow rate for this period.

18. Flow meter WC-S-2 is owned by Wayne County and operated by DWSD. During this annual reporting period, Meter WC-S-2 recorded no flow rate from October 28, 2015 through November 2, 2015 and from December 28, 2015 through December 31, 2015. As result, DWSD estimated the daily average flow rate for this meter with a correlation to an unspecified DWSD meter. The DWSD correlated flow rate was not used in this annual report. In this report, a correlation to Meters P-9, P-10, P-11, and P-13 was developed by ASI and used to estimate Meter WC-S-2 flow rate for these periods. On January 8, 2016 the WC-S-2 sensor was removed and sent to ISCO for repair.

19. Table 1-5 shows the total monthly volumes for Meters WC-S-2 and WC-S-3 as estimated by DWSD and by ASI for use in this RVSDS annual report. The ASI estimated total flow volumes for Meters WC-S-2 and WC-S-3 are 46.1 million gallons (4.8%) less than the total flow volumes estimated for these meters by DWSD.

Table 1-5
Rouge Valley Sewage Disposal System
Monthly Volume Comparison

Period	[WC-S-2] (MG)		[WC-S-3] (MG)		[WC-S-2] + [WC-S-3] (MG)		
	DWSD	ASI	DWSD	ASI	DWSD	ASI	Difference
October 2015	158.1	155.3	67.9	78.1	226.0	233.4	7.4
November 2015	201.3	203.1	98.4	98.4	299.7	301.5	1.8
December 2015	271.3	252.3	160.6	124.3	431.9	376.6	-55.3
Total	630.7	610.7	326.9	300.8	957.6	911.5	-46.1

Section 2

Monitoring Network

FIGURE A3

FIGURE A7

FIGURE A4

FIGURE A5

FIGURE A6

FIGURE A8

FIGURE A2

FIGURE A1

N

W E

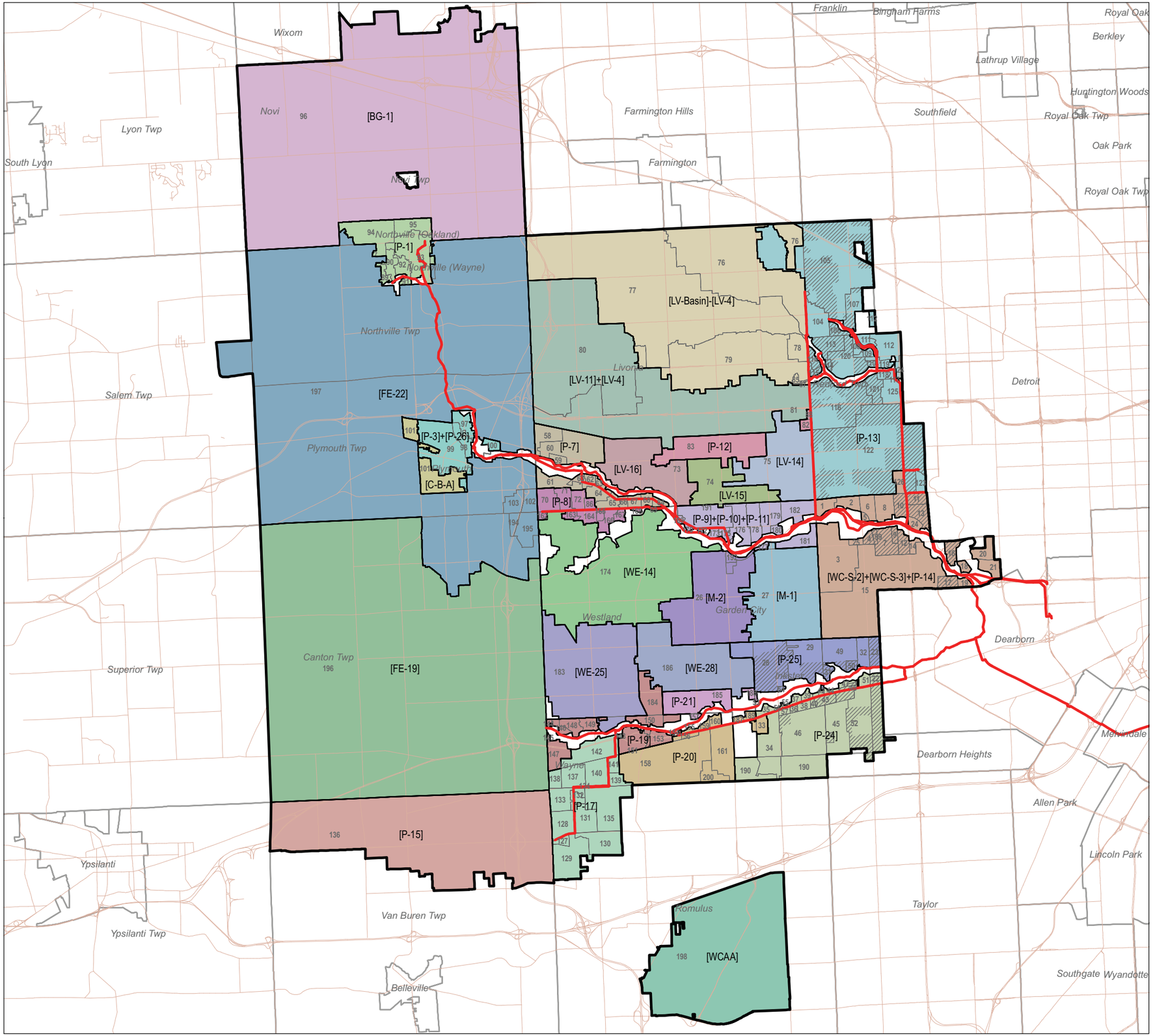
S

FIGURE 2-1
ROUGE VALLEY SEWAGE DISPOSAL SYSTEM
INTERCEPTOR SCHEMATIC

SYSTEM
MONITORING
INDEX SHEET

REVISION DATE: NOVEMBER 24, 2015

Rouge Valley Sewage Disposal System



Legend

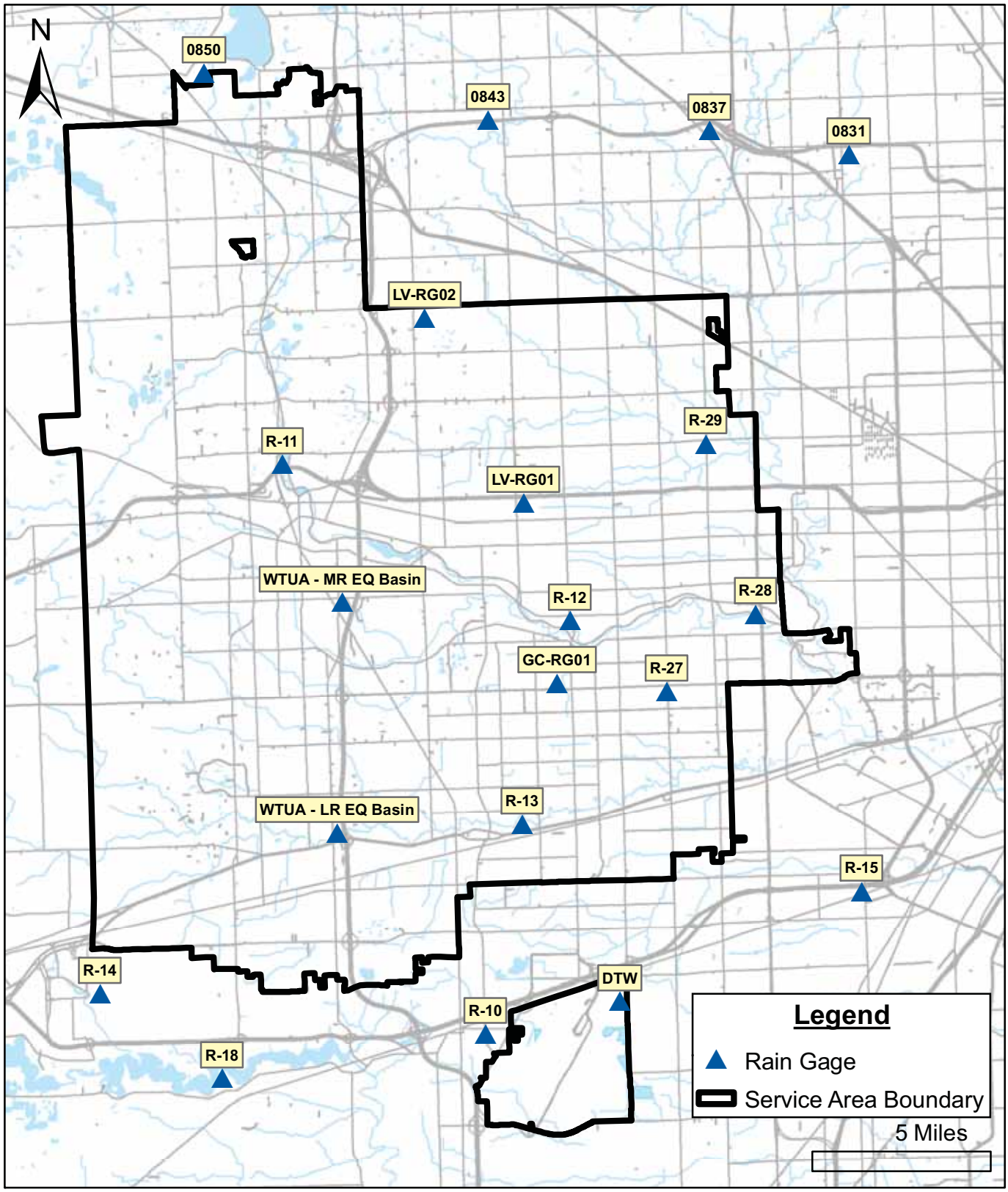
- Interceptor
- Meter District
- Line Connection Area
- Combined Area
- Community Boundary
- Service Area Boundary
- Roads

Figure 2-2
Meter District and Line Connection Areas

Prepared By:

Applied Science, Inc.

REVISION DATE: NOVEMBER 24, 2015



REVISION DATE: March 17, 2016

Figure 2-3
Rouge Valley Sewage Disposal System
Rain Gage Location Map

Table 2-1
Rouge Valley Sewage Disposal System
Flow Monitoring Meters

Wayne County Meters	P-1, P-3, P-7, P-8, P-9, P-10, P-11, P-12, P-13, P-14, P-15, P-17, P-19, P-20, P-21, P-24, P-25, P-26, P-28, P-29, P-30, P-31, P-32, P-33, P-34, P-35, LV-Basin, M-22A, M-22B, WE-14, WE-25 & WE-28, WC-S-1A	
Customer Meters	City of Livonia	LV-4, LV-11, LV-14, LV-15, LV-16, & LV-20
	Garden City	M-1 & M-2
	Oakland County (City of Novi)	BG-1
	WTUA[1]	FE-19, FE-22, A, B & C
	WCAA	Pond 3 West
RVSDS Outlet Meters[2]	WC-S-1, WC-S-2 & WC-S-3	

1) Western Townships Utilities Authority (WTUA)

2) Meters owned by Wayne County and operated/maintained by DWSD

Table 2-2
Rouge Valley Sewage Disposal System
Rain Gages

Rain Gage	Operated By	Location
R-10	Wayne County	11111 Wayne Road, Romulus
R-11	Wayne County	14973 Northville Road, Northville Township
R-12	Wayne County	7651 Merriman Road, Westland
R-13	Wayne County	3301 Josephine Street, Wayne
R-14	Wayne County	Willow Run Airport, Van Buren Township
R-15	Wayne County	20195 Trolley, Taylor
R-18	Wayne County	130 4th Street, Belleville
R-27	Wayne County	2001 Inkster Road, Inkster
R-28	Wayne County	23800 Hines Drive, Dearborn Heights
R-29	Wayne County	15145 Beech Daly Road, Redford
Livonia RG01	Livonia	Schoolcraft Road, Livonia
Livonia RG02	Livonia	Whispering Willows Golf Course, Livonia
DTW	NOAA	Wayne County Metro Airport, Romulus
Garden City RG01	Garden City	Moeller Park, Garden City
WTUA LR EQ Basin	WTUA	3501 Haggerty Road, Canton
WTUA MR EQ Basin	WTUA	40905 Joy Road, Plymouth
0831	Oakland County WRC	19625 Middlesex Street, Southfield
0837	Oakland County WRC	25515 Clara Lane, Southfield
0843	Oakland County WRC	34189 12 Mile Road, Farmington Hills
0850	Oakland County WRC	46351 West Road, Walled Lake

Section 3

Per-Capita Flow Rate at Key Locations

Table 3-1
Rouge Valley Sewage Disposal System
Average Per-Capita Flow Rate at Key Locations

Branch	Sewage Flow Meter	Year 2010 Residential Population	Total Developed Land (acres)	Monthly Average Incremental Flow Rate (MGD)												Annual Average Incremental Flow Rate	
				Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	(MGD)	(gallons / capita / day)
Middle Rouge at Inkster Road	[P-9] + [P-10] + [P-11] - [FE-22] + [C] - [B] - [A]	223,281	38,468	26.9	22.7	29.7	31.7	29.9	39.1	25.6	21.7	20.3	19.3	22.6	26.6	26.3	118
Middle Rouge Outlet	[WC-S-2] + [WC-S-3] + [P-14] - [FE-22] + [C] - [B] - [A]	308,765	46,337	41.0	33.6	45.3	49.5	45.9	66.1	37.6	32.2	30.3	28.1	32.6	38.0	40.0	130
Lower Rouge Outlet	[P-24] + [P-25] - [FE-19] - [WCAA]	96,019	20,858	10.9	10.2	14.2	13.8	12.3	17.0	9.7	8.4	8.0	7.5	8.4	10.1	10.9	113
RVSDS Outlet	[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-22] + [C] - [B] - [A] - [FE-19] - [WCAA]	404,784	67,194	51.6	42.7	60.1	65.7	61.9	90.1	49.8	43.1	39.8	37.1	42.9	50.9	53.0	131

Table 3-2
Rouge Valley Sewage Disposal System
Average Per-Capita Dry Weather Flow Rate at Key Locations

Branch	Sewage Flow Meter	Year 2010 Residential Population	Total Developed Land (acres)	Monthly Average Incremental Dry Weather Flow Rate (MGD)												Annual Average Incremental Dry Weather Flow Rate	
				Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	(MGD)	(gallons / capita / day)
Middle Rouge at Inkster Road	[P-9] + [P-10] + [P-11] - [FE-22] + [C] - [B] - [A]	223,281	38,468	26.2	22.6	27.7	29.4	26.9	30.6	24.3	20.9	19.3	18.7	21.7	23.5	24.3	109
Middle Rouge Outlet	[WC-S-2] + [WC-S-3] + [P-14] - [FE-22] + [C] - [B] - [A]	308,765	46,337	39.4	33.3	40.6	44.8	38.9	47.9	35.4	30.2	28.4	27.2	31.3	33.6	35.9	116
Lower Rouge Outlet	[P-24] + [P-25] - [FE-19] - [WCAA]	96,019	20,858	10.4	10.1	12.7	12.5	10.4	12.4	9.1	7.8	7.5	7.0	7.9	8.0	9.6	100
RVSDS Outlet	[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-22] + [C] - [B] - [A] - [FE-19] - [WCAA]	404,784	67,194	49.5	42.3	53.2	59.0	52.3	64.4	46.7	39.7	36.9	35.5	41.0	43.6	47.0	116

Notes:

1. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the sewage flow meter math.

Section 4

Customer Flow Summaries

Table 4-1
Rouge Valley Sewage Disposal System
Monthly Average Flow Rate by Customer
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math[1,3,4]	Year 2010 Residential Population	Total Developed Land (acres)	Maximum Allowable Flow Limit[2] (MGD)	Estimated Monthly Average Customer Flow Rate (MGD)												Estimated Annual Average Flow Rate		Estimated Maximum Monthly Average Flow Rate (MGD)
					Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	(MGD)	(gallons / capita / day)	
Oakland County (Novi)	[BG-1]	43,217	12,473	13.24	4.70	4.52	4.94	4.80	5.09	5.39	4.76	4.71	4.41	4.27	4.41	4.42	*4.70*	*109*	*5.39*
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	9,022	968	3.10	1.93	1.76	1.88	2.04	1.82	2.30	1.94	1.44	1.35	1.20	1.01	1.47	*1.68*	*186*	*2.30*
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	5,765	871	4.92	0.52	0.48	0.60	1.07	1.09	1.28	1.19	1.18	1.14	1.12	1.37	1.43	*1.04*	*180*	*1.43*
Garden City	99.4%[M-1] + 93.1%[M-2]	27,647	2,796	15.77	3.55	2.73	4.30	4.77	4.41	6.22	3.47	2.90	2.82	2.53	3.34	4.29	*3.78*	*137*	*6.22*
Livonia	[P-7] - [P-26] + [P-12] + 51.5%{[P-8] - [FE-22]} + 4.4%[P-13] + [LV-14] + 99.7%[LV-15] + [LV-16]	96,949	16,928	68.84	13.36	11.22	14.92	17.55	16.64	22.31	13.87	11.55	10.68	10.04	11.53	13.65	*13.94*	*144*	*22.31*
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	84,123	9,274	51.73	9.11	8.02	10.12	10.72	9.93	13.41	9.16	7.97	7.52	6.91	7.68	9.39	*9.16*	*109*	*13.41*
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	47,040	4,703	34.18	6.88	5.27	7.85	9.34	8.15	11.71	6.43	5.08	4.53	4.10	5.13	6.08	*6.71*	*143*	*11.71*
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	38,721	3,156	42.31	7.18	5.68	7.86	8.48	7.71	15.24	5.46	5.38	5.43	4.70	4.84	5.38	*6.95*	*179*	*15.24*
Van Buren Twp	[P-15]	6,938	4,471	3.23	0.69	0.68	0.83	1.04	1.03	1.17	0.88	0.81	0.79	0.78	0.80	0.91	*0.87*	*125*	*1.17*
Romulus	38.0%{[P-17] - [P-15]}	2,362	1,562	2.33	0.35	0.32	0.36	0.32	0.36	0.36	0.31	0.31	0.37	0.25	0.27	0.27	*0.32*	*136*	*0.37*
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	17,597	2,517	18.04	2.94	2.49	3.17	3.36	3.11	3.82	2.53	2.20	2.08	1.89	2.23	2.60	*2.70*	*154*	*3.82*
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	25,242	2,578	17.23	2.86	3.11	4.85	3.97	3.14	4.96	2.17	2.07	1.99	1.92	2.13	2.60	*2.98*	*118*	*4.96*
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	146,319	31,498	21.44	2.85	2.09	2.92	2.34	1.58	4.76	0.89	2.15	1.50	1.52	1.82	1.52	*2.16*	--	*4.76*
WCAA	[WCAA]	--	4,881	0.97	0.00	0.00	0.00	0.16	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.36	*0.09*	--	*0.58*
Row A) Sum of Customer Flow Rates (MGD):					**56.91**	**48.38**	**64.59**	**69.96**	**64.65**	**92.94**	**53.06**	**47.75**	**44.62**	**41.24**	**46.56**	**54.37**	**57.09**	**--**	92.94
Row B) Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3] (MGD):					**54.44**	**44.74**	**62.97**	**68.19**	**64.04**	**94.83**	**50.68**	**45.23**	**41.23**	**38.58**	**44.73**	**52.73**	**55.20**	**--**	94.83

Notes:

1. Sewage flow meter math based on 2010 Census populations.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.

Table 4-2
Rouge Valley Sewage Disposal System
Monthly Average Dry Weather Flow Rate by Customer
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math[1,3,4]	Year 2010 Residential Population	Total Developed Land (acres)	Maximum Allowable Flow Limit[2] (MGD)	Estimated Monthly Average Customer Dry Weather Flow Rate (MGD)												Estimated Annual Average Dry Weather Flow Rate		Estimated Maximum Monthly Average Dry Weather Flow Rate (MGD)
					Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	(MGD)	(gallons / capita / day)	
Oakland County (Novi)	[BG-1]	43,217	12,473	13.24	4.65	4.52	4.74	4.70	4.80	5.07	4.70	4.66	4.37	4.23	4.37	4.26	*4.59*	*106*	*5.07*
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	9,022	968	3.10	1.92	1.74	1.85	2.02	1.69	1.87	1.91	1.42	1.25	1.20	1.03	1.25	*1.60*	*177*	*2.02*
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	5,765	871	4.92	0.52	0.48	0.58	0.98	1.05	1.20	1.17	1.16	1.13	1.09	1.33	1.38	*1.01*	*175*	*1.38*
Garden City	99.4%[M-1] + 93.1%[M-2]	27,647	2,796	15.77	3.34	2.68	3.56	4.11	3.55	4.11	3.15	2.63	2.57	2.30	3.02	3.14	*3.18*	*115*	*4.11*
Livonia	[P-7] - [P-26] + [P-12] + 51.5%{[P-8] - [FE-22]} + 4.4%[P-13] + [LV-14] + 99.7%[LV-15] + [LV-16]	96,949	16,928	68.84	12.98	11.15	13.93	16.38	14.77	17.90	13.12	11.15	10.23	9.72	11.05	12.15	*12.88*	*133*	*17.90*
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	84,123	9,274	51.73	8.90	7.96	9.65	10.13	9.06	10.84	8.72	7.71	7.24	6.75	7.44	8.36	*8.56*	*102*	*10.84*
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	47,040	4,703	34.18	6.50	5.21	7.01	8.38	6.96	9.24	5.92	4.62	4.10	3.76	4.76	4.97	*5.95*	*127*	*9.24*
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	38,721	3,156	42.31	6.66	5.62	6.05	6.94	4.95	7.88	5.07	4.66	5.00	4.73	4.82	4.99	*5.61*	*145*	*7.88*
Van Buren Twp	[P-15]	6,938	4,471	3.23	0.68	0.68	0.78	0.95	0.94	1.02	0.85	0.79	0.77	0.76	0.78	0.81	*0.82*	*118*	*1.02*
Romulus	38.0%{[P-17] - [P-15]}	2,362	1,562	2.33	0.34	0.32	0.35	0.31	0.33	0.33	0.31	0.30	0.34	0.24	0.25	0.29	*0.31*	*131*	*0.35*
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	17,597	2,517	18.04	2.85	2.47	2.92	3.04	2.65	3.27	2.41	2.09	1.97	1.78	2.11	2.21	*2.48*	*141*	*3.27*
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	25,242	2,578	17.23	2.63	3.07	4.12	3.51	2.53	2.90	1.98	1.76	1.75	1.73	1.90	1.80	*2.47*	*98*	*4.12*
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	146,319	31,498	21.44	2.72	1.97	2.87	2.04	1.10	1.71	0.80	1.91	0.98	1.38	1.68	0.82	*1.66*	--	*2.87*
WCAA	[WCAA]	--	4,881	0.97	0.00	0.00	0.00	0.16	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.38	*0.11*	--	*0.76*
Row A) Sum of Customer Flow Rates (MGD):					**54.68**	**47.87**	**58.42**	**63.64**	**55.14**	**67.34**	**50.12**	**44.86**	**41.71**	**39.68**	**44.54**	**46.80**	**51.23**	**--**	67.34
Row B) Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3] (MGD):					**52.19**	**44.28**	**56.03**	**61.19**	**54.08**	**66.12**	**47.50**	**41.62**	**37.86**	**36.81**	**42.62**	**44.71**	**48.75**	**--**	66.12

Notes:

1. Sewage flow meter math based on 2010 Census populations.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.

Section 5

Maximum Hourly Flow Rates for Significant Storm Events by Customer

Table 5-1
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer - January through December 2015
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit (MGD)	Event 1 4/7-10/2015 1.06 in			Event 2 5/5-11/2015 1.81 in		
			Estimated Monthly Average Dry Weather Flow Rate for April 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor	Estimated Monthly Average Dry Weather Flow Rate for May 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor
Oakland County (Novi)	[BG-1]	13.24	4.70	8.90	1.89	4.80	7.45	1.55
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	3.10	2.02	4.22	2.09	1.69	4.94	2.92
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	4.92	0.98	2.90	2.96	1.05	2.54	2.41
Garden City	99.4%[M-1] + 93.1%[M-2]	15.77	4.11	15.94	3.88	3.55	11.83	3.34
Livonia	[P-7] - [P-26] + [P-12] + 4.4%[P-13] + 51.5%{[P-8] - [FE-22]} + [LV-14] + 99.7%[LV-15] + [LV-16]	68.84	16.38	36.38	2.22	14.77	24.88	1.68
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	51.73	10.13	21.66	2.14	9.06	16.32	1.80
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	34.18	8.38	23.17	2.77	6.96	16.20	2.33
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	42.31	6.94	36.29	5.23	4.95	31.90	6.45
Van Buren Twp	[P-15]	3.23	0.95	2.39	2.51	0.94	1.84	1.96
Romulus	38.0%{[P-17] - [P-15]}	2.33	0.31	1.07	3.43	0.33	1.02	3.12
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	18.04	3.04	12.88	4.24	2.65	7.84	2.96
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	17.23	3.51	14.97	4.27	2.53	12.92	5.10
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	21.44	2.04	13.14	6.44	1.10	6.43	5.87

Legend:

xx.x	Exceeds the Maximum Allowable Flow Limit by 0 to 10%
xx.x	Exceeds the Maximum Allowable Flow Limit by more than 10%

Notes:

1. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.
5. The WCAA is only allowed to discharge to the RVSDS during dry weather. For these significant storm events, the WCAA did not discharge to the RVSDS.

Table 5-2
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer - January through December 2015
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit (MGD)	Event 3 5/30-31/2015 2.49 in			Event 4 6/12-18/2015 1.96 in		
			Estimated Monthly Average Dry Weather Flow Rate for May 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor	Estimated Monthly Average Dry Weather Flow Rate for June 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor
Oakland County (Novi)	[BG-1]	13.24	4.80	11.50	2.40	5.07	9.49	1.87
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	3.10	1.69	4.12	2.44	1.87	6.57	3.51
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	4.92	1.05	3.36	3.19	1.20	3.23	2.69
Garden City	99.4%[M-1] + 93.1%[M-2]	15.77	3.55	24.62	6.94	4.11	21.28	5.18
Livonia	[P-7] - [P-26] + [P-12] + 4.4%[P-13] + 51.5%{[P-8] - [FE-22]} + [LV-14] + 99.7%[LV-15] + [LV-16]	68.84	14.77	44.61	3.02	17.90	47.77	2.67
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	51.73	9.06	25.68	2.84	10.84	24.06	2.22
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	34.18	6.96	25.57	3.67	9.24	23.51	2.55
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	42.31	4.95	63.41	12.81	7.88	54.78	6.95
Van Buren Twp	[P-15]	3.23	0.94	2.70	2.87	1.02	1.88	1.84
Romulus	38.0%{[P-17] - [P-15]}	2.33	0.33	1.53	4.69	0.33	1.25	3.74
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	18.04	2.65	10.96	4.14	3.27	9.10	2.78
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	17.23	2.53	17.94	7.08	2.90	18.77	6.48
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	21.44	1.10	23.68	21.60	1.71	22.17	12.98

Legend:

xx.x	Exceeds the Maximum Allowable Flow Limit by 0 to 10%
xx.x	Exceeds the Maximum Allowable Flow Limit by more than 10%

Notes:

1. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.
5. The WCAA is only allowed to discharge to the RVSDS during dry weather. For these significant storm events, the WCAA did not discharge to the RVSDS.

Table 5-3
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer - January through December 2015
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit (MGD)	Event 5 6/22-23/2015 1.10 in			Event 6 8/2-3/2015 1.06 in		
			Estimated Monthly Average Dry Weather Flow Rate for June 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor	Estimated Monthly Average Dry Weather Flow Rate for August 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor
Oakland County (Novi)	[BG-1]	13.24	5.07	7.16	1.41	4.66	5.97	1.28
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	3.10	1.87	5.21	2.78	1.42	3.65	2.57
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	4.92	1.20	3.02	2.51	1.16	2.68	2.31
Garden City	99.4%[M-1] + 93.1%[M-2]	15.77	4.11	17.87	4.35	2.63	14.98	5.70
Livonia	[P-7] - [P-26] + [P-12] + 4.4%[P-13] + 51.5%{[P-8] - [FE-22]} + [LV-14] + 99.7%[LV-15] + [LV-16]	68.84	17.90	31.71	1.77	11.15	25.28	2.27
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	51.73	10.84	26.28	2.42	7.71	14.58	1.89
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	34.18	9.24	21.00	2.27	4.62	21.63	4.68
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	42.31	7.88	41.03	5.21	4.66	41.38	8.88
Van Buren Twp	[P-15]	3.23	1.02	2.07	2.03	0.79	1.08	1.36
Romulus	38.0%{[P-17] - [P-15]}	2.33	0.33	0.94	2.82	0.30	0.95	3.14
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	18.04	3.27	13.64	4.16	2.09	7.45	3.56
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	17.23	2.90	17.61	6.08	1.76	8.98	5.11
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	21.44	1.71	16.83	9.85	1.91	4.08	2.14

Legend:

xx.x	Exceeds the Maximum Allowable Flow Limit by 0 to 10%
xx.x	Exceeds the Maximum Allowable Flow Limit by more than 10%

Notes:

1. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.
5. The WCAA is only allowed to discharge to the RVSDS during dry weather. For these significant storm events, the WCAA did not discharge to the RVSDS.

Table 5-4
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer - January through December 2015
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit (MGD)	Event 7 8/19-20/2015 1.00 in			Event 8 10/27-29/2015 1.24 in		
			Estimated Monthly Average Dry Weather Flow Rate for August 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor	Estimated Monthly Average Dry Weather Flow Rate for October 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor
Oakland County (Novi)	[BG-1]	13.24	4.66	6.19	1.33	4.23	7.63	1.80
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	3.10	1.42	2.86	2.01	1.20	2.57	2.14
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	4.92	1.16	2.34	2.01	1.09	3.28	3.00
Garden City	99.4%[M-1] + 93.1%[M-2]	15.77	2.63	8.91	3.39	2.30	11.68	5.09
Livonia	[P-7] - [P-26] + [P-12] + 4.4%[P-13] + 51.5%{[P-8] - [FE-22]} + [LV-14] + 99.7%[LV-15] + [LV-16]	68.84	11.15	17.22	1.54	9.72	22.60	2.33
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	51.73	7.71	11.36	1.47	6.75	12.95	1.92
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	34.18	4.62	17.53	3.80	3.76	18.11	4.81
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	42.31	4.66	29.47	6.33	4.73	12.69	2.68
Van Buren Twp	[P-15]	3.23	0.79	1.12	1.41	0.76	1.31	1.73
Romulus	38.0%{[P-17] - [P-15]}	2.33	0.30	0.95	3.14	0.24	1.27	5.30
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	18.04	2.09	6.36	3.04	1.78	5.98	3.35
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	17.23	1.76	9.16	5.21	1.73	12.85	7.42
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	21.44	1.91	8.18	4.29	1.38	4.97	3.61

Legend:

xx.x	Exceeds the Maximum Allowable Flow Limit by 0 to 10%
xx.x	Exceeds the Maximum Allowable Flow Limit by more than 10%

Notes:

1. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.
5. The WCAA is only allowed to discharge to the RVSDS during dry weather. For these significant storm events, the WCAA did not discharge to the RVSDS.

Table 5-5
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer - January through December 2015
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit (MGD)	Event 9 12/26-29/2015 1.22 in		
			Estimated Monthly Average Dry Weather Flow Rate for December 2015 (MGD)	Estimated Maximum Hourly Flow Rate (MGD)	Peaking Factor
Oakland County (Novi)	[BG-1]	13.24	4.26	7.51	1.76
Plymouth City	[P-3] + [P-26] - [P-1] + [C-B-A]	3.10	1.25	4.02	3.21
Northville City	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	4.92	1.38	2.69	1.94
Garden City	99.4%[M-1] + 93.1%[M-2]	15.77	3.14	20.65	6.58
Livonia	[P-7] - [P-26] + [P-12] + 4.4%[P-13] + 51.5%{[P-8] - [FE-22]} + [LV-14] + 99.7%[LV-15] + [LV-16]	68.84	12.15	30.66	2.52
Westland	48.5%{[P-8] - [FE-22]} + 14.9%{[P-24] + [P-25] - [P-20] - [P-21]} + 29.5%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} +0.3%[LV-15] + 0.6%[M-1] + 6.9%[M-2] + 147.7%[WE-14] + 95.7%[WE-25] + [WE-28]	51.73	8.36	20.48	2.45
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	34.18	4.97	19.61	3.95
Dearborn Heights	99.1%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.5%{[P-24] + [P-25] - [P-20] - [P-21]}	42.31	4.99	13.51	2.71
Van Buren Twp	[P-15]	3.23	0.81	2.05	2.53
Romulus	38.0%{[P-17] - [P-15]}	2.33	0.29	0.68	2.40
Wayne	69.7%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 4.3%[WE-25]	18.04	2.21	9.31	4.21
Inkster	77.7%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [FE-19] - [WCAA]}	17.23	1.80	13.88	7.71
WTUA	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	21.44	0.82	6.78	8.31

Legend:

xx.x	Exceeds the Maximum Allowable Flow Limit by 0 to 10%
xx.x	Exceeds the Maximum Allowable Flow Limit by more than 10%

Notes:

1. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. The sewage flow meter math for Romulus and Wayne has been updated to more accurately account for the significant industrial users in Meter District P-17.
4. The Wayne County Airport Authority (WCAA) flow rate from Pond 3 West that is discharged to the RVSDS has been incorporated into the customer sewage flow meter math.
5. The WCAA is only allowed to discharge to the RVSDS during dry weather. For these significant storm events, the WCAA did not discharge to the RVSDS.

Section 6

Summary of Rainfall Events

Table 6-1
Rouge Valley Sewage Disposal System
Summary of Rainfall Events

Period: 1/1/2015 through 12/31/2015

Significant Event No.[1]	Start Date/Time	Stop Date/Time	Duration (hours)	Preceeding Week Rainfall (inches)	Rainfall Depth (inches)				Coefficient of Variation[2]
					Minimum	Average	Maximum	Std. Dev	
1	4/7/2015 3:00	4/10/2015 23:00	92	0.35	0.48	1.06	1.61	0.31	30%
2	5/5/2015 7:00	5/11/2015 20:00	157	0.34	0.75	1.81	2.74	0.53	29%
3	5/30/2015 9:00	5/31/2015 17:00	32	0.79	1.88	2.49	3.26	0.41	17%
4	6/12/2015 6:00	6/18/2015 0:00	138	0.76	0.87	1.96	2.57	0.57	29%
5	6/22/2015 7:00	6/23/2015 12:00	29	0.45	0.49	1.10	2.22	0.41	37%
6	8/2/2015 21:00	8/3/2015 15:00	18	0.42	0.80	1.06	1.38	0.20	19%
7	8/19/2015 13:00	8/20/2015 15:00	26	0.10	0.23	1.00	1.45	0.28	28%
8	10/27/2015 22:00	10/29/2015 3:00	29	0.48	0.97	1.24	1.45	0.12	9%
9	12/26/2015 13:00	12/29/2015 12:00	71	0.94	0.39	1.22	1.85	0.48	40%

Notes:

1. Significant storm events are defined as those with at least 0.5 inches of rainfall occurring on a single day with an event total of at least 1.0 inch of rainfall. Significant storm events are separated by at least 2 consecutive days without precipitation over 0.1 inches. This storm event definition is based on the arithmetic mean of the rainfall recorded by all rain gages used in the analysis for that storm.

2. The coefficient of variation (CV) is the ratio of the standard deviation to the average. It provides a normalized assessment of the degree of spatial variability for a given event. This allows comparisons to be made between events regarding their uniformity over the service area independent of the magnitude of each event. A low CV means the storm event's rainfall was evenly distributed over the district, a high CV means the storm event had pockets of intense rainfall within the district.

3. The values presented in Table 6-1 are a summary of RVSDS rain gages. Individual rain gage data are summarized in Tables 8-1 to 8-9.

Section 7

Peak Hydraulic Gradeline Summary

Table 7-1
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 1 4/7-10/2015 1.06 in						Event 2 5/5-11/2015 1.81 in					
						Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time	Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	--				Elevation (NAVD88)	Above Invert	--	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	8.90	4/9/15 20:05	-	-	_	-	7.45	5/10/15 16:05	-	-	_	-
	P-1	NAI	48	740.82	716.31	10.47	4/9/15 21:15	721.14	4.83	◉	4/8/15 10:55	9.31	5/10/15 17:25	717.59	1.28	○	5/10/15 17:45
	P-3	MRIR	36	681.37	652.48	9.42	4/9/15 22:10	655.32	2.84	○	4/8/15 13:50	9.23	5/10/15 18:20	653.90	1.42	○	5/10/15 16:40
	P-26	PWI	30	649.24	647.86	1.28	4/9/15 23:25	648.35	0.49	○	4/10/15 0:15	1.17	5/10/15 19:35	648.34	0.48	○	5/10/15 20:00
	P-7	PWI	48	649.09	625.23	2.06	4/10/15 0:10	627.19	1.96	○	4/8/15 16:40	2.26	5/10/15 17:50	626.48	1.25	○	5/10/15 21:10
	LV-16	CS	48	-	627.38	4.59	4/9/15 19:35	628.61	1.23	○	4/9/15 20:00	3.62	5/11/15 16:50	628.43	1.05	○	5/11/15 17:20
	FE-22	RVI	48	685.04	644.88	15.27	4/9/15 21:00	646.79	1.91	○	4/9/15 21:00	8.08	5/6/15 8:30	646.38	1.50	○	5/6/15 9:00
	A	CS	21	-	-	1.49	4/9/15 18:05	-	0.69	○	4/9/15 19:00	1.85	5/10/15 14:05	-	0.76	○	5/10/15 15:00
	B	CS	36	-	-	2.02	4/9/15 19:05	-	0.64	○	4/9/15 20:00	2.91	5/10/15 15:05	-	0.80	○	5/10/15 16:00
	C	CS	30	-	-	6.98	4/9/15 19:05	-	0.84	○	4/9/15 20:00	7.53	5/10/15 15:05	-	1.20	○	5/10/15 16:00
	P-8	RVI	48	646.54	622.41	14.45	4/9/15 22:00	625.92	3.51	○	4/9/15 11:25	9.12	5/6/15 10:10	623.87	1.46	○	5/6/15 10:45
	WE-14	CS	42	-	613.48	6.02	4/9/15 20:15	615.16	1.68	○	4/9/15 20:40	4.59	5/11/15 17:55	614.87	1.39	○	5/11/15 18:30
	LV-15	CS	60	636.29	617.03	4.39	4/9/15 19:30	620.56	3.53	○	4/10/15 1:00	2.71	5/6/15 0:35	618.98	1.95	○	5/6/15 2:05
	M-22A	CS	42	630.49	614.41	-	-	621.69	7.28	◉	4/10/15 7:00	-	-	622.00	7.59	◉	5/11/15 5:45
	M-22B	CS	42	630.49	614.41	-	-	620.91	6.50	◉	4/10/15 0:45	-	-	619.26	4.85	◉	5/6/15 2:00
	M-2	CS	27	636.70	612.39	7.43	4/9/15 20:20	614.28	1.89	○	4/9/15 20:35	5.25	5/6/15 1:15	613.92	1.53	○	5/6/15 1:45
	M-1	CS	72	630.59	607.59	9.26	4/9/15 19:50	613.75	6.16	◉	4/9/15 22:55	7.00	5/6/15 1:05	610.49	2.90	○	5/6/15 2:20
	LV-14	CS	60	612.02	605.57	5.51	4/9/15 21:25	606.90	1.33	○	4/9/15 21:45	2.50	5/6/15 1:30	606.47	0.90	○	5/6/15 1:55
	P-28	RVI	54	629.02	607.92	6.07	4/9/15 20:35	610.17	2.25	○	4/9/15 21:50	3.05	5/8/15 21:30	609.49	1.57	○	5/10/15 18:50
	P-29	CS	42	-	-	6.61	4/9/15 21:45	-	2.38	○	4/9/15 22:05	6.29	5/10/15 17:55	-	1.84	○	5/10/15 18:45
	LV-20	CS	54	-	-	0.11	4/10/15 15:55	-	0.22	○	4/10/15 8:05	0.11	5/7/15 9:35	-	0.23	○	5/8/15 14:50
	LV-BASIN	RVI	54	632.00	602.01	17.34	4/9/15 21:10	606.86	4.85	◉	4/9/15 22:45	12.89	5/10/15 18:40	605.49	3.48	○	5/10/15 19:15
	LV-4	CS	30	652.59	638.51	5.20	4/9/15 19:30	640.85	2.34	○	4/9/15 20:15	5.48	5/10/15 16:00	640.57	2.06	○	5/10/15 16:45
	LV-11	CS	42	-	-	6.78	4/9/15 22:00	-	1.27	○	4/9/15 22:30	3.66	5/11/15 0:00	-	0.94	○	5/11/15 0:25
	P-12	RVI	60	613.41	597.67	24.54	4/9/15 23:10	600.63	2.96	○	4/9/15 23:35	16.64	5/11/15 1:25	599.99	2.32	○	5/11/15 19:55
	P-9	MRIR	42	610.36	597.01	15.22	4/9/15 22:30	599.77	2.76	○	4/9/15 23:15	5.84	5/11/15 19:55	598.81	1.80	○	5/11/15 19:50
	P-10	RVI	66	607.65	595.62	42.79	4/9/15 22:55	598.90	3.28	○	4/9/15 23:35	26.99	5/11/15 18:55	598.13	2.51	○	5/11/15 18:55
	P-11	MRPIE	48	607.91	596.68	20.92	4/10/15 0:45	599.71	3.03	○	4/9/15 23:40	15.15	5/6/15 2:15	601.42	4.74	◉	5/5/15 10:20
	P-13	MRPIE	54	613.22	586.85	24.11	4/9/15 22:10	590.15	3.30	○	4/9/15 22:25	16.84	5/11/15 1:25	589.38	2.53	○	5/11/15 2:00
	P-35	MRIR	54	597.62	584.15	-	-	-	-	-	-	-	-	-	-	-	-
	P-34	RVI	62	595.60	582.30	-	-	-	-	-	-	-	-	-	-	-	-
	P-33	MRPIE	48	597.01	585.22	-	-	-	-	-	-	-	-	-	-	-	-
	P-32	MRIR	66	597.03	578.79	-	-	-	-	-	-	-	-	-	-	-	-
	P-31	RVI	78	599.00	578.71	-	-	-	-	-	-	-	-	-	-	-	-
	P-30	MRPIE	60	593.00	580.29	-	-	-	-	-	-	-	-	-	-	-	-
	P-14	RVI	78	604.91	570.93	55.95	4/10/15 2:30	578.26	7.33	◉	4/9/15 22:35	40.34	5/11/15 19:55	574.34	3.41	○	5/11/15 19:50
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.39	4/9/15 21:30	652.91	1.24	○	4/9/15 21:55	1.84	5/6/15 7:50	652.74	1.07	○	5/6/15 8:15
	P-17	LRIR	30	641.21	632.39	4.40	4/9/15 19:30	634.62	2.23	○	4/9/15 15:40	4.35	5/6/15 10:15	633.47	1.08	○	5/6/15 10:40
	FE-19	CS	-	-	-	0.00	-	-	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	4.04	4/9/15 21:10	-	1.22	○	4/9/15 21:40	3.32	5/6/15 1:50	-	1.08	○	5/6/15 2:25
	P-19	RVI	48	630.34	621.54	13.68	4/9/15 20:20	623.82	2.28	○	4/9/15 20:35	7.89	5/6/15 10:50	623.21	1.67	○	5/6/15 11:15
	WE-28	CS	30	-	-	4.04	4/9/15 20:20	-	1.28	○	4/9/15 20:55	2.03	5/6/15 1:15	-	0.81	○	5/6/15 1:35
	P-21	RVI	54	620.17	608.14	19.41	4/9/15 20:50	612.39	4.25	○	4/9/15 15:15	10.04	5/6/15 1:50	609.71	1.57	○	5/6/15 2:20
	P-25	RVI	60	598.36	588.06	25.99	4/9/15 21:45	592.74	4.68	○	4/9/15 10:15	21.39	5/6/15 5:35	589.99	1.93	○	5/6/15 5:35
	P-20	WI	48	630.66	619.72	9.17	4/9/15 20:05	622.78	3.06	○	4/9/15 20:45	7.92	5/6/15 1:20	622.27	2.55	○	5/6/15 1:30
	P-24	RVI	36	594.24	584.52	12.51	4/9/15 21:55	586.17	1.65	○	4/9/15 22:05	10.65	5/6/15 1:30	586.00	1.48	○	5/6/15 2:00
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	-	-	-	-	-	-	80.10	5/6/15 7:10	563.52	8.62	◉	5/6/15 5:20
	WC-S-1	RVI	66	586.88	500.94	97.72	4/10/15 2:20	-	-	-	-	83.67	5/6/15 7:20	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	33.11	4/9/15 23:20	-	-	-	-	17.22	5/6/15 12:45	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87	45.63	4/9/15 23:35	-	-	-	-	30.72	5/11/15 19:55	-	-	-	-

Key

CS	Community Sewer
HRTS	Huron Rouge Trunk Sewer
LRIR	Lower Rouge Interceptor Relief
NWI	Northwest Interceptor
MRPIE	Middle Rouge Parkway Interceptor Extension
MRIR	Middle Rouge Interceptor Relief
NAI	Northville Arm Interceptor
PWI	Parkway Interceptor
RVI	Rouge Valley Interceptor
WI	Wayne Interceptor
WRVI	Wayne-Romulus-Van Buren Interceptor

Key

Within sewer:	○
Surcharging sewer, grade elevation unknown:	⊗
Surcharging sewer, surcharging level exceeded top of range for level sensor:	⊘
Surcharging sewer, grade elevation known:	◉
Above grade:	●
Data Not Available:	-

Table 7-2
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 3 5/30-31/2015 2.49 in						Event 4 6/12-18/2015 1.96 in					
						Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time	Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	--				Elevation (NAVD88)	Above Invert	--	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	11.50	5/31/15 11:05	-	-	_	-	9.49	6/14/15 14:10	-	-	_	-
	P-1	NAI	48	740.82	716.31	13.35	5/31/15 11:50	717.91	1.60	○	5/31/15 11:15	11.84	6/14/15 15:30	717.81	1.50	○	6/14/15 15:50
	P-3	MRIR	36	681.37	652.48	13.06	5/31/15 12:15	654.19	1.71	○	5/31/15 13:05	11.00	6/15/15 17:10	653.99	1.51	○	6/14/15 16:55
	P-26	PWI	30	649.24	647.86	2.16	5/31/15 13:55	648.53	0.67	○	5/31/15 14:15	1.44	6/14/15 17:30	648.41	0.55	○	6/14/15 18:00
	P-7	PWI	48	649.09	625.23	3.62	5/31/15 13:20	626.77	1.54	○	5/31/15 13:30	3.43	6/15/15 16:40	626.72	1.49	○	6/15/15 16:55
	LV-16	CS	48	-	627.38	6.90	5/30/15 16:40	629.55	2.17	○	5/30/15 17:05	6.18	6/15/15 15:10	629.51	2.13	○	6/15/15 16:15
	FE-22	RVI	48	685.04	644.88	20.90	5/31/15 12:20	647.03	2.15	○	5/31/15 13:00	21.42	6/15/15 15:50	647.06	2.18	○	6/15/15 16:00
	A	CS	21	-	-	1.37	5/31/15 7:05	-	0.67	○	5/31/15 9:00	2.78	6/15/15 14:05	-	0.97	○	6/15/15 15:00
	B	CS	36	-	-	2.75	5/31/15 8:05	-	0.78	○	5/31/15 9:00	3.14	6/15/15 14:05	-	0.81	○	6/15/15 15:00
	C	CS	30	-	-	6.13	5/31/15 8:05	-	1.05	○	5/31/15 9:00	8.54	6/15/15 14:05	-	1.30	○	6/15/15 15:00
	P-8	RVI	48	646.54	622.41	18.78	5/31/15 13:30	624.74	2.33	○	5/31/15 15:10	19.97	6/15/15 17:15	624.69	2.28	○	6/15/15 17:40
	WE-14	CS	42	-	613.48	6.92	5/31/15 11:00	618.03	4.55	⊗	5/31/15 16:50	7.49	6/15/15 15:35	616.10	2.62	○	6/15/15 18:35
	LV-15	CS	60	636.29	617.03	7.16	5/30/15 16:40	623.17	6.14	◉	5/31/15 16:55	8.84	6/15/15 20:15	622.59	5.56	◉	6/15/15 20:00
	M-22A	CS	42	630.49	614.41	-	-	623.11	8.70	◉	5/31/15 10:30	-	-	623.11	8.70	◉	6/15/15 6:20
	M-22B	CS	42	630.49	614.41	-	-	622.99	8.58	◉	5/31/15 12:55	-	-	622.53	8.12	◉	6/15/15 20:05
	M-2	CS	27	636.70	612.39	9.25	5/31/15 9:05	617.86	5.47	◉	5/31/15 15:30	9.95	6/14/15 15:15	615.31	2.92	◉	6/15/15 18:20
	M-1	CS	72	630.59	607.59	16.35	5/31/15 8:30	616.19	8.60	◉	5/31/15 16:50	12.50	6/15/15 15:40	616.37	8.78	◉	6/16/15 0:00
	LV-14	CS	60	612.02	605.57	7.22	5/30/15 17:25	607.91	2.34	○	5/31/15 16:15	8.05	6/15/15 15:50	607.01	1.44	○	6/15/15 16:25
	P-28	RVI	54	629.02	607.92	6.17	5/31/15 15:40	615.08	7.16	◉	5/31/15 16:55	6.17	6/14/15 14:55	611.18	3.26	○	6/15/15 20:10
	P-29	CS	42	-	-	8.96	5/31/15 9:55	-	3.82	⊗	5/31/15 11:45	7.43	6/15/15 20:55	-	3.43	○	6/15/15 20:05
	LV-20	CS	54	-	-	0.13	5/31/15 9:50	-	0.26	○	5/30/15 16:30	0.14	6/15/15 15:25	-	0.26	○	6/14/15 13:55
	LV-BASIN	RVI	54	632.00	602.01	19.80	5/31/15 5:10	612.18	10.17	◉	5/31/15 16:45	19.69	6/15/15 20:40	608.69	6.68	◉	6/15/15 19:15
	LV-4	CS	30	652.59	638.51	4.28	5/30/15 16:30	640.95	2.44	○	5/31/15 9:35	5.04	6/17/15 7:35	640.89	2.38	○	6/15/15 15:40
	LV-11	CS	42	-	-	10.90	5/31/15 10:20	-	5.73	⊗	5/31/15 16:55	10.16	6/15/15 17:00	-	2.17	○	6/15/15 19:10
	P-12	RVI	60	613.41	597.67	28.86	5/31/15 16:55	606.53	8.86	◉	5/31/15 15:20	27.13	6/15/15 18:05	603.04	5.37	◉	6/15/15 19:10
	P-9	MRIR	42	610.36	597.01	11.62	5/31/15 10:05	605.81	8.80	◉	5/31/15 15:30	12.87	6/15/15 18:00	602.17	5.16	◉	6/15/15 19:10
	P-10	RVI	66	607.65	595.62	55.80	5/31/15 16:45	604.38	8.76	◉	5/31/15 15:30	58.10	6/15/15 19:10	600.71	5.09	○	6/15/15 18:55
	P-11	MRPIE	48	607.91	596.68	23.56	5/31/15 16:55	604.29	7.61	◉	5/31/15 16:40	25.24	6/15/15 17:35	601.59	4.91	◉	6/15/15 19:20
	P-13	MRPIE	54	613.22	586.85	26.28	5/31/15 10:40	595.48	8.63	◉	5/31/15 15:20	24.39	6/14/15 16:40	591.78	4.93	◉	6/15/15 19:30
	P-35	MRIR	54	597.62	584.15	-	-	-	-	-	-	-	-	-	-	-	-
	P-34	RVI	62	595.60	582.30	-	-	-	-	-	-	-	-	-	-	-	-
	P-33	MRPIE	48	597.01	585.22	-	-	-	-	-	-	-	-	-	-	-	-
	P-32	MRIR	66	597.03	578.79	-	-	-	-	-	-	-	-	-	-	-	-
	P-31	RVI	78	599.00	578.71	-	-	-	-	-	-	-	-	-	-	-	-
	P-30	MRPIE	60	593.00	580.29	-	-	-	-	-	-	-	-	-	-	-	-
	P-14	RVI	78	604.91	570.93	49.76	5/30/15 19:20	583.93	13.00	◉	5/31/15 15:05	65.86	6/16/15 1:05	579.16	8.23	◉	6/14/15 22:45
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.70	5/31/15 10:20	653.02	1.35	○	5/31/15 10:55	1.88	6/15/15 21:20	652.75	1.08	○	6/15/15 21:45
	P-17	LRIR	30	641.21	632.39	6.68	5/31/15 12:35	633.85	1.46	○	5/31/15 12:55	5.02	6/14/15 19:35	633.62	1.23	○	6/14/15 20:15
	FE-19	CS	-	-	-	4.42	5/31/15 13:05	-	-	-	-	4.42	6/14/15 20:05	-	-	-	-
	WE-25	CS	27	-	-	5.55	5/31/15 13:05	-	1.61	○	5/31/15 11:00	5.76	6/14/15 20:05	-	1.62	○	6/14/15 21:25
	P-19	RVI	48	630.34	621.54	17.33	5/31/15 12:45	624.31	2.77	○	5/31/15 13:05	16.57	6/14/15 20:00	624.20	2.66	○	6/14/15 20:25
	WE-28	CS	30	-	-	4.85	5/31/15 9:25	-	1.36	○	5/31/15 11:00	3.74	6/14/15 20:35	-	1.24	○	6/14/15 21:00
	P-21	RVI	54	620.17	608.14	23.70	5/31/15 12:40	610.57	2.43	○	5/31/15 13:15	20.39	6/14/15 20:25	610.39	2.25	○	6/14/15 20:55
	P-25	RVI	60	598.36	588.06	27.26	5/31/15 9:45	593.87	5.81	◉	5/31/15 15:35	31.66	6/16/15 7:10	590.80	2.74	○	6/16/15 7:10
	P-20	WI	48	630.66	619.72	9.38	5/31/15 8:30	622.62	2.90	○	5/31/15 9:20	8.21	6/14/15 20:25	622.30	2.58	○	6/14/15 20:55
	P-24	RVI	36	594.24	584.52	14.00	5/31/15 9:00	590.95	6.43	◉	5/31/15 14:50	13.50	6/14/15 21:55	586.43	1.91	○	6/14/15 22:30
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	92.19	5/31/15 16:40	575.45	20.55	◉	5/31/15 5:40	112.47	6/16/15 0:20	574.55	19.65	◉	6/14/15 17:10
	WC-S-1	RVI	66	586.88	500.94	87.40	5/30/15 20:40	-	-	-	-	117.45	6/16/15 1:55	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	69.10	5/31/15 10:15	-	-	-	-	51.95	6/15/15 18:45	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87	63.01	5/31/15 9:30	-	-	-	-	56.95	6/15/15 19:05	-	-	-	-

Key	
CS	Community Sewer
HRTS	Huron Rouge Trunk Sewer
LRIR	Lower Rouge Interceptor Relief
NWI	Northwest Interceptor
MRPIE	Middle Rouge Parkway Interceptor Extension
MRIR	Middle Rouge Interceptor Relief
NAI	Northville Arm Interceptor
PWI	Parkway Interceptor
RVI	Rouge Valley Interceptor
WI	Wayne Interceptor
WRVI	Wayne-Romulus-Van Buren Interceptor

Key	
Within sewer:	○
Surcharging sewer, grade elevation unknown:	⊗
Surcharging sewer, surcharging level exceeded top of range for level sensor:	⊘
Surcharging sewer, grade elevation known:	◉
Above grade:	●
Data Not Available:	-

Table 7-3
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 5 6/22-23/2015 1.10 in						Event 6 8/2-3/2015 1.06 in					
						Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time	Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	--				Elevation (NAVD88)	Above Invert	--	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	7.16	6/23/15 1:25	-	-	_	-	5.97	8/3/15 10:10	-	-	_	-
	P-1	NAI	48	740.82	716.31	8.94	6/23/15 2:45	717.57	1.26	○	6/23/15 3:10	7.47	8/3/15 11:30	717.45	1.14	○	8/3/15 12:10
	P-3	MRIR	36	681.37	652.48	10.25	6/23/15 3:40	653.92	1.44	○	6/23/15 10:20	8.39	8/3/15 0:10	653.74	1.26	○	8/3/15 0:55
	P-26	PWI	30	649.24	647.86	0.93	6/23/15 4:50	648.30	0.44	○	6/23/15 5:30	0.47	8/3/15 1:05	648.20	0.34	○	8/3/15 0:35
	P-7	PWI	48	649.09	625.23	2.54	6/23/15 2:50	626.52	1.29	○	6/23/15 3:05	1.63	8/3/15 0:55	626.33	1.10	○	8/3/15 1:05
	LV-16	CS	48	-	627.38	5.35	6/23/15 1:20	628.84	1.46	○	6/23/15 1:55	3.00	8/2/15 23:15	628.41	1.03	○	8/2/15 23:45
	FE-22	RVI	48	685.04	644.88	16.95	6/23/15 8:40	646.87	1.99	○	6/23/15 9:00	5.35	8/3/15 9:45	646.10	1.22	○	8/3/15 10:00
	A	CS	21	-	-	2.17	6/23/15 0:05	-	0.85	○	6/23/15 1:00	0.69	8/2/15 23:05	-	0.49	○	8/3/15 0:00
	B	CS	36	-	-	3.56	6/23/15 0:05	-	0.82	○	6/23/15 1:00	1.35	8/2/15 23:05	-	0.52	○	8/3/15 0:00
	C	CS	30	-	-	6.31	6/23/15 1:05	-	1.06	○	6/23/15 2:00	3.15	8/2/15 23:05	-	0.76	○	8/3/15 0:00
	P-8	RVI	48	646.54	622.41	15.88	6/23/15 10:10	624.36	1.95	○	6/23/15 10:50	6.51	8/3/15 11:40	623.61	1.20	○	8/3/15 12:05
	WE-14	CS	42	-	613.48	7.00	6/23/15 2:00	615.36	1.88	○	6/23/15 2:45	5.12	8/2/15 23:45	614.98	1.50	○	8/3/15 0:00
	LV-15	CS	60	636.29	617.03	7.18	6/23/15 1:15	619.28	2.25	○	6/23/15 2:35	4.54	8/2/15 23:25	618.77	1.74	○	8/2/15 23:50
	M-22A	CS	42	630.49	614.41	-	-	623.11	8.70	◉	6/23/15 11:55	-	-	621.26	6.85	◉	8/3/15 7:35
	M-22B	CS	42	630.49	614.41	-	-	619.42	5.01	◉	6/23/15 2:40	-	-	618.39	3.98	◉	8/3/15 2:25
	M-2	CS	27	636.70	612.39	10.33	6/23/15 3:00	614.75	2.36	◉	6/23/15 3:40	7.12	8/3/15 1:20	614.20	1.81	○	8/3/15 1:35
	M-1	CS	72	630.59	607.59	9.51	6/23/15 1:10	615.37	7.78	◉	6/23/15 3:00	8.50	8/3/15 0:45	611.82	4.23	○	8/3/15 2:35
	LV-14	CS	60	612.02	605.57	6.11	6/23/15 1:50	606.79	1.22	○	6/23/15 2:20	3.65	8/2/15 23:45	606.49	0.92	○	8/3/15 0:10
	P-28	RVI	54	629.02	607.92	4.75	6/23/15 2:10	609.60	1.68	○	6/23/15 3:55	3.09	8/3/15 0:10	609.09	1.17	○	8/3/15 2:10
	P-29	CS	42	-	-	5.42	6/23/15 3:25	-	1.93	○	6/23/15 3:50	3.40	8/3/15 1:50	-	1.40	○	8/3/15 2:10
	LV-20	CS	54	-	-	0.11	6/23/15 11:35	-	0.25	○	6/23/15 1:10	0.07	8/3/15 12:35	-	0.24	○	8/2/15 23:10
	LV-BASIN	RVI	54	632.00	602.01	14.53	6/23/15 3:05	606.13	4.12	○	6/23/15 4:15	11.00	8/3/15 1:40	605.11	3.10	○	8/3/15 2:15
	LV-4	CS	30	652.59	638.51	5.58	6/23/15 1:20	640.88	2.37	○	6/23/15 1:50	3.53	8/3/15 1:10	640.11	1.60	○	8/3/15 0:00
	LV-11	CS	42	-	-	6.63	6/23/15 2:10	-	1.28	○	6/23/15 2:30	4.07	8/3/15 1:30	-	0.98	○	8/3/15 2:00
	P-12	RVI	60	613.41	597.67	20.17	6/23/15 5:00	600.70	3.03	○	6/23/15 5:05	14.85	8/3/15 2:55	600.04	2.37	○	8/3/15 3:00
	P-9	MRIR	42	610.36	597.01	10.89	6/23/15 4:35	599.99	2.98	○	6/23/15 5:00	6.26	8/3/15 2:20	598.94	1.93	○	8/3/15 2:55
	P-10	RVI	66	607.65	595.62	44.48	6/23/15 4:10	599.21	3.59	○	6/23/15 5:05	29.35	8/3/15 2:15	598.26	2.64	○	8/3/15 2:40
	P-11	MRPIE	48	607.91	596.68	23.28	6/23/15 4:20	600.15	3.47	○	6/23/15 4:40	18.05	8/3/15 2:15	599.41	2.73	○	8/3/15 2:35
	P-13	MRPIE	54	613.22	586.85	21.92	6/23/15 3:10	590.20	3.35	○	6/23/15 4:00	22.95	8/3/15 1:15	590.11	3.26	○	8/3/15 1:45
	P-35	MRIR	54	597.62	584.15	-	-	-	-	-	-	-	-	-	-	-	-
	P-34	RVI	62	595.60	582.30	-	-	-	-	-	-	-	-	-	-	-	-
	P-33	MRPIE	48	597.01	585.22	-	-	-	-	-	-	-	-	-	-	-	-
	P-32	MRIR	66	597.03	578.79	-	-	-	-	-	-	-	-	-	-	-	-
	P-31	RVI	78	599.00	578.71	-	-	-	-	-	-	-	-	-	-	-	-
	P-30	MRPIE	60	593.00	580.29	-	-	-	-	-	-	-	-	-	-	-	-
	P-14	RVI	78	604.91	570.93	58.70	6/23/15 8:55	578.99	8.06	◉	6/23/15 4:55	49.60	8/3/15 3:45	577.39	6.46	○	8/3/15 3:25
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.07	6/23/15 3:00	652.84	1.17	○	6/23/15 3:30	1.08	8/3/15 14:45	652.50	0.83	○	8/3/15 11:25
	P-17	LRIR	30	641.21	632.39	3.50	6/23/15 1:25	633.37	0.98	○	6/23/15 1:50	2.39	8/3/15 1:15	633.26	0.87	○	8/3/15 9:20
	FE-19	CS	-	-	-	2.10	6/23/15 7:05	-	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	5.50	6/23/15 3:20	-	1.54	○	6/23/15 3:30	2.86	8/3/15 0:40	-	0.99	○	8/3/15 1:00
	P-19	RVI	48	630.34	621.54	14.33	6/23/15 2:30	623.92	2.38	○	6/23/15 2:50	5.88	8/3/15 1:35	622.96	1.42	○	8/3/15 2:00
	WE-28	CS	30	-	-	4.74	6/23/15 2:10	-	1.41	○	6/23/15 2:15	1.35	8/3/15 1:45	-	0.61	○	8/3/15 2:05
	P-21	RVI	54	620.17	608.14	22.04	6/23/15 2:30	610.49	2.35	○	6/23/15 2:55	8.54	8/3/15 1:55	609.56	1.42	○	8/3/15 2:35
	P-25	RVI	60	598.36	588.06	26.94	6/23/15 3:20	590.75	2.69	○	6/23/15 9:10	14.90	8/3/15 11:15	589.36	1.30	○	8/3/15 11:35
	P-20	WI	48	630.66	619.72	9.44	6/23/15 1:50	622.78	3.06	○	6/23/15 2:15	7.60	8/3/15 0:10	622.17	2.45	○	8/3/15 0:35
	P-24	RVI	36	594.24	584.52	13.30	6/23/15 3:25	586.34	1.82	○	6/23/15 3:35	10.67	8/3/15 1:40	586.05	1.53	○	8/3/15 2:25
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	104.82	6/23/15 10:15	572.79	17.89	◉	6/23/15 4:45	79.17	8/3/15 11:15	573.36	18.46	◉	8/3/15 2:15
	WC-S-1	RVI	66	586.88	500.94	109.55	6/23/15 9:45	-	-	-	-	84.94	8/3/15 11:55	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	39.31	6/23/15 4:55	-	-	-	-	15.35	8/3/15 4:30	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87	37.80	6/23/15 7:20	-	-	-	-	31.47	8/3/15 4:35	-	-	-	-

Key

CS	Community Sewer
HRTS	Huron Rouge Trunk Sewer
LRIR	Lower Rouge Interceptor Relief
NWI	Northwest Interceptor
MRPIE	Middle Rouge Parkway Interceptor Extension
MRIR	Middle Rouge Interceptor Relief
NAI	Northville Arm Interceptor
PWI	Parkway Interceptor
RVI	Rouge Valley Interceptor
WI	Wayne Interceptor
WRVI	Wayne-Romulus-Van Buren Interceptor

Key

Within sewer:	○
Surcharging sewer, grade elevation unknown:	⊗
Surcharging sewer, surcharging level exceeded top of range for level sensor:	⊘
Surcharging sewer, grade elevation known:	◉
Above grade:	●
Data Not Available:	-

Table 7-4
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 7 8/19-20/2015 1.00 in						Event 8 10/27-29/2015 1.24 in					
						Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time	Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	--				Elevation (NAVD88)	Above Invert	--	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	6.19	8/20/15 8:10	-	-	_	-	7.63	10/28/15 6:50	-	-	_	-
	P-1	NAI	48	740.82	716.31	7.74	8/20/15 9:30	717.48	1.17	○	8/20/15 10:10	9.34	10/28/15 8:55	717.58	1.27	○	10/28/15 9:15
	P-3	MRIR	36	681.37	652.48	8.16	8/20/15 11:00	653.71	1.23	○	8/20/15 11:05	9.22	10/28/15 10:25	653.78	1.30	○	10/28/15 9:50
	P-26	PWI	30	649.24	647.86	0.42	8/20/15 12:00	648.22	0.36	○	8/20/15 1:30	0.75	10/28/15 10:10	648.23	0.37	○	10/28/15 10:45
	P-7	PWI	48	649.09	625.23	1.50	8/20/15 12:30	626.30	1.07	○	8/20/15 12:55	1.78	10/28/15 12:25	626.42	1.19	○	10/28/15 12:30
	LV-16	CS	48	-	627.38	2.47	8/20/15 2:45	628.34	0.96	○	8/20/15 3:10	2.59	10/28/15 9:15	628.35	0.97	○	10/28/15 9:40
	FE-22	RVI	48	685.04	644.88	9.12	8/20/15 9:55	646.41	1.53	○	8/20/15 10:00	6.43	10/28/15 9:25	646.23	1.35	○	10/28/15 10:00
	A	CS	21	-	-	0.56	8/20/15 0:05	-	0.44	○	8/19/15 14:00	0.72	10/28/15 8:05	-	0.50	○	10/28/15 9:00
	B	CS	36	-	-	1.16	8/20/15 0:05	-	0.49	○	8/20/15 1:00	1.40	10/28/15 8:05	-	0.59	○	10/28/15 9:00
	C	CS	30	-	-	2.46	8/20/15 1:05	-	0.67	○	8/20/15 2:00	3.71	10/28/15 9:05	-	0.69	○	10/28/15 10:00
	P-8	RVI	48	646.54	622.41	9.28	8/20/15 10:55	623.82	1.41	○	8/20/15 12:05	7.02	10/28/15 10:50	623.65	1.24	○	10/28/15 9:50
	WE-14	CS	42	-	613.48	4.08	8/20/15 10:55	614.76	1.28	○	8/20/15 11:45	4.41	10/28/15 8:55	614.85	1.37	○	10/28/15 9:15
	LV-15	CS	60	636.29	617.03	2.73	8/20/15 0:35	618.42	1.39	○	8/20/15 1:05	3.52	10/28/15 7:30	618.59	1.56	○	10/28/15 7:55
	M-22A	CS	42	630.49	614.41	-	-	620.76	6.35	◉	8/20/15 9:05	-	-	620.65	6.24	◉	10/28/15 16:10
	M-22B	CS	42	630.49	614.41	-	-	615.98	1.57	○	8/20/15 1:30	-	-	616.92	2.51	○	10/28/15 8:35
	M-2	CS	27	636.70	612.39	3.63	8/20/15 0:50	613.54	1.15	○	8/20/15 1:10	4.58	10/28/15 7:40	613.68	1.29	○	10/28/15 8:00
	M-1	CS	72	630.59	607.59	5.64	8/20/15 1:05	609.21	1.62	○	8/20/15 1:35	7.52	10/28/15 5:30	610.08	2.49	○	10/28/15 8:45
	LV-14	CS	60	612.02	605.57	2.19	8/20/15 1:05	606.28	0.71	○	8/20/15 1:40	2.51	10/28/15 5:55	606.31	0.74	○	10/28/15 6:20
	P-28	RVI	54	629.02	607.92	2.01	8/20/15 1:30	608.93	1.01	○	8/20/15 11:10	2.21	10/28/15 8:30	609.06	1.14	○	10/28/15 9:00
	P-29	CS	42	-	-	2.69	8/20/15 9:45	-	1.24	○	8/20/15 11:05	3.64	10/28/15 8:30	-	1.40	○	10/28/15 9:00
	LV-20	CS	54	-	-	0.06	8/19/15 17:55	-	0.18	○	8/20/15 10:10	-	-	-	0.23	○	10/28/15 8:40
	LV-BASIN	RVI	54	632.00	602.01	7.04	8/20/15 9:25	604.56	2.55	○	8/20/15 9:45	8.89	10/28/15 9:20	604.97	2.96	○	10/28/15 9:25
	LV-4	CS	30	652.59	638.51	2.99	8/20/15 7:35	639.95	1.44	○	8/20/15 0:45	3.49	10/28/15 7:10	640.03	1.52	○	10/28/15 7:50
	LV-11	CS	42	-	-	2.80	8/20/15 1:15	-	0.84	○	8/20/15 1:35	3.19	10/28/15 8:35	-	0.87	○	10/28/15 8:40
	P-12	RVI	60	613.41	597.67	10.31	8/20/15 12:50	599.71	2.04	○	8/20/15 13:15	13.39	10/28/15 10:25	599.92	2.25	○	10/28/15 11:15
	P-9	MRIR	42	610.36	597.01	3.60	8/20/15 12:25	598.32	1.31	○	8/20/15 13:15	5.17	10/28/15 11:10	598.71	1.70	○	10/28/15 11:15
	P-10	RVI	66	607.65	595.62	21.11	8/20/15 13:20	597.78	2.16	○	8/20/15 14:05	25.81	10/28/15 11:10	598.08	2.46	○	10/28/15 11:50
	P-11	MRPIE	48	607.91	596.68	12.85	8/20/15 1:35	598.89	2.21	○	8/20/15 2:00	15.44	10/28/15 10:55	599.12	2.44	○	10/28/15 11:15
	P-13	MRPIE	54	613.22	586.85	18.53	8/20/15 2:35	589.60	2.75	○	8/20/15 3:00	18.99	10/28/15 7:05	589.71	2.86	○	10/28/15 7:30
	P-35	MRIR	54	597.62	584.15	-	-	-	-	-	-	18.27	10/28/15 11:05	586.94	2.79	○	10/28/15 11:20
	P-34	RVI	62	595.60	582.30	-	-	-	-	-	-	24.78	10/28/15 10:55	585.51	3.21	○	10/28/15 11:25
	P-33	MRPIE	48	597.01	585.22	-	-	-	-	-	-	16.09	10/28/15 10:20	587.11	1.89	○	10/28/15 10:45
	P-32	MRIR	66	597.03	578.79	-	-	-	-	-	-	21.71	10/28/15 10:35	581.79	3.00	○	10/28/15 11:15
	P-31	RVI	78	599.00	578.71	-	-	-	-	-	-	34.12	10/28/15 10:45	582.21	3.50	○	10/28/15 11:15
	P-30	MRPIE	60	593.00	580.29	-	-	-	-	-	-	19.91	10/28/15 10:30	583.16	2.87	○	10/28/15 11:05
	P-14	RVI	78	604.91	570.93	42.36	8/20/15 6:15	577.01	6.08	○	8/20/15 4:40	45.89	10/28/15 11:30	574.55	3.62	○	10/28/15 11:10
Lower Rouge	P-15	WRVI	24	667.57	651.67	1.12	8/20/15 6:55	652.52	0.85	○	8/20/15 7:20	1.31	10/28/15 8:35	652.57	0.90	○	10/28/15 9:10
	P-17	LRIR	30	641.21	632.39	3.49	8/20/15 8:55	633.35	0.96	○	8/20/15 9:15	4.58	10/28/15 9:45	633.47	1.08	○	10/28/15 10:20
	FE-19	CS	-	-	-	0.00	-	-	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	2.18	8/20/15 1:10	-	0.89	○	8/20/15 1:35	2.17	10/28/15 8:15	-	0.87	○	10/28/15 8:45
	P-19	RVI	48	630.34	621.54	5.52	8/20/15 10:05	622.90	1.36	○	8/20/15 10:30	7.51	10/28/15 10:00	623.16	1.62	○	10/28/15 10:30
	WE-28	CS	30	-	-	0.89	8/20/15 1:15	-	0.48	○	8/20/15 1:40	1.00	10/28/15 7:50	-	0.49	○	10/28/15 10:30
	P-21	RVI	54	620.17	608.14	6.69	8/20/15 1:05	609.39	1.25	○	8/20/15 1:40	9.48	10/28/15 10:35	609.65	1.51	○	10/28/15 10:50
	P-25	RVI	60	598.36	588.06	14.58	8/20/15 7:10	589.32	1.26	○	8/20/15 7:25	21.07	10/28/15 13:15	590.18	2.12	○	10/28/15 13:45
	P-20	WI	48	630.66	619.72	6.44	8/20/15 0:55	621.93	2.21	○	8/20/15 1:30	5.06	10/28/15 5:30	621.59	1.87	○	10/28/15 5:55
	P-24	RVI	36	594.24	584.52	9.48	8/20/15 2:25	585.93	1.41	○	8/20/15 2:50	8.64	10/28/15 7:05	585.84	1.32	○	10/28/15 7:50
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	71.06	8/20/15 14:55	574.14	19.24	◉	8/20/15 4:05	73.78	10/28/15 15:25	565.74	10.84	◉	10/28/15 8:00
	WC-S-1	RVI	66	586.88	500.94	80.25	8/20/15 14:55	-	-	-	-	93.20	10/28/15 12:15	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	10.41	8/20/15 14:55	-	-	-	-	13.10	10/28/15 13:35	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87	27.07	8/20/15 5:50	-	-	-	-	7.71	10/28/15 13:35	-	-	-	-

Key	
CS	Community Sewer
HRTS	Huron Rouge Trunk Sewer
LRIR	Lower Rouge Interceptor Relief
NWI	Northwest Interceptor
MRPIE	Middle Rouge Parkway Interceptor Extension
MRIR	Middle Rouge Interceptor Relief
NAI	Northville Arm Interceptor
PWI	Parkway Interceptor
RVI	Rouge Valley Interceptor
WI	Wayne Interceptor
WRVI	Wayne-Romulus-Van Buren Interceptor

Key	
Within sewer:	○
Surcharging sewer, grade elevation unknown:	⊗
Surcharging sewer, surcharging level exceeded top of range for level sensor:	⊘
Surcharging sewer, grade elevation known:	◉
Above grade:	●
Data Not Available:	-

Table 7-5
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 9 12/26-29/2015 1.22 in					
						Peak Recorded Hourly Flow Rate (MGD)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	--	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	7.51	12/29/15 11:15	-	-	-	-
	P-1	NAI	48	740.82	716.31	9.27	12/29/15 11:55	717.55	1.24	○	12/29/15 11:55
	P-3	MRIR	36	681.37	652.48	9.15	12/29/15 11:55	653.75	1.27	○	12/29/15 11:55
	P-26	PWI	30	649.24	647.86	0.71	12/29/15 11:55	648.19	0.33	○	12/26/15 15:45
	P-7	PWI	48	649.09	625.23	1.58	12/29/15 11:55	626.39	1.16	○	12/26/15 17:10
	LV-16	CS	48	-	627.38	3.07	12/28/15 22:50	628.42	1.04	○	12/28/15 23:10
	FE-22	RVI	48	685.04	644.88	7.55	12/29/15 11:55	646.22	1.34	○	12/29/15 11:00
	A	CS	21	-	-	0.75	12/28/15 23:05	-	0.56	○	12/27/15 0:00
	B	CS	36	-	-	1.92	12/29/15 11:05	-	0.65	○	12/29/15 11:00
	C	CS	30	-	-	5.14	12/29/15 11:05	-	0.79	○	12/29/15 11:00
	P-8	RVI	48	646.54	622.41	8.94	12/29/15 11:55	623.76	1.35	○	12/29/15 11:55
	WE-14	CS	42	-	613.48	5.78	12/28/15 23:55	615.10	1.62	○	12/29/15 0:25
	LV-15	CS	60	636.29	617.03	4.65	12/28/15 23:45	618.83	1.80	○	12/29/15 1:15
	M-22A	CS	42	630.49	614.41	-	-	620.98	6.57	◉	12/29/15 11:40
	M-22B	CS	42	630.49	614.41	-	-	618.86	4.45	◉	12/29/15 1:50
	M-2	CS	27	636.70	612.39	8.45	12/29/15 0:20	614.31	1.92	○	12/29/15 0:30
	M-1	CS	72	630.59	607.59	13.33	12/29/15 3:00	614.46	6.87	◉	12/29/15 2:05
	LV-14	CS	60	612.02	605.57	4.16	12/29/15 0:30	606.54	0.97	○	12/29/15 0:50
	P-28	RVI	54	629.02	607.92	3.18	12/29/15 11:55	609.29	1.37	○	12/29/15 11:55
	P-29	CS	42	-	-	4.57	12/29/15 11:55	-	1.56	○	12/29/15 11:55
	LV-20	CS	54	-	-	-	-	-	0.29	○	12/27/15 10:35
	LV-BASIN	RVI	54	632.00	602.01	13.72	12/29/15 11:55	605.42	3.41	○	12/29/15 2:20
	LV-4	CS	30	652.59	638.51	4.62	12/29/15 11:55	640.26	1.75	○	12/29/15 11:45
	LV-11	CS	42	-	-	4.41	12/29/15 0:50	-	1.01	○	12/29/15 1:00
	P-12	RVI	60	613.41	597.67	16.40	12/29/15 2:55	600.22	2.55	○	12/29/15 2:55
	P-9	MRIR	42	610.36	597.01	8.20	12/29/15 2:30	599.33	2.32	○	12/29/15 2:55
	P-10	RVI	66	607.65	595.62	35.96	12/29/15 1:55	598.65	3.03	○	12/29/15 2:20
	P-11	MRPIE	48	607.91	596.68	21.45	12/29/15 1:40	599.90	3.22	○	12/29/15 1:45
	P-13	MRPIE	54	613.22	586.85	20.67	12/29/15 1:45	589.92	3.07	○	12/29/15 2:25
	P-35	MRIR	54	597.62	584.15	26.51	12/29/15 1:40	587.79	3.64	○	12/29/15 2:35
	P-34	RVI	62	595.60	582.30	38.65	12/29/15 1:50	586.54	4.24	○	12/29/15 2:30
	P-33	MRPIE	48	597.01	585.22	24.58	12/29/15 1:45	587.85	2.63	○	12/29/15 2:25
	P-32	MRIR	66	597.03	578.79	29.84	12/29/15 3:10	583.47	4.68	○	12/29/15 3:05
	P-31	RVI	78	599.00	578.71	52.15	12/29/15 2:35	583.72	5.01	○	12/29/15 3:10
	P-30	MRPIE	60	593.00	580.29	28.24	12/29/15 2:15	583.99	3.70	○	12/29/15 3:10
	P-14	RVI	78	604.91	570.93	53.73	12/29/15 11:50	579.55	8.62	◉	12/29/15 2:50
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.05	12/29/15 1:05	652.79	1.12	○	12/29/15 1:30
	P-17	LRIR	30	641.21	632.39	2.74	12/29/15 0:20	633.26	0.87	○	12/29/15 0:45
	FE-19	CS	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	3.44	12/29/15 1:20	-	1.10	○	12/29/15 1:30
	P-19	RVI	48	630.34	621.54	8.58	12/29/15 0:30	623.30	1.76	○	12/29/15 1:00
	WE-28	CS	30	-	-	3.29	12/29/15 0:35	-	1.07	○	12/29/15 0:55
	P-21	RVI	54	620.17	608.14	13.53	12/29/15 0:40	609.94	1.80	○	12/29/15 0:40
	P-25	RVI	60	598.36	588.06	24.88	12/29/15 11:00	590.37	2.31	○	12/29/15 11:20
	P-20	WI	48	630.66	619.72	8.34	12/29/15 1:15	622.46	2.74	○	12/29/15 0:40
	P-24	RVI	36	594.24	584.52	11.33	12/29/15 0:30	586.07	1.55	○	12/29/15 0:55
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	95.64	12/29/15 11:55	575.03	20.13	◉	12/29/15 2:45
	WC-S-1	RVI	66	586.88	500.94	97.51	12/29/15 11:55	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	19.49	12/29/15 4:15	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87	11.55	12/29/15 4:20	-	-	-	-

Key	
CS	Community Sewer
HRTS	Huron Rouge Trunk Sewer
LRIR	Lower Rouge Interceptor Relief
NWI	Northwest Interceptor
MRPIE	Middle Rouge Parkway Interceptor Extension
MRIR	Middle Rouge Interceptor Relief
NAI	Northville Arm Interceptor
PWI	Parkway Interceptor
RVI	Rouge Valley Interceptor
WI	Wayne Interceptor
WRVI	Wayne-Romulus-Van Buren Interceptor

Key	
Within sewer:	○
Surcharging sewer, grade elevation unknown:	⊗
Surcharging sewer, surcharging level exceeded top of range for level sensor:	⊘
Surcharging sewer, grade elevation known:	◉
Above grade:	●
Data Not Available:	-

Section 8

Rainfall Event Summary Tables

Table 8-1
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 1

Start Date/Time: 4/7/2015 3:00

Stop Date/Time: 4/10/2015 23:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.52	0.53	0.54	0.78	1.02	1.43
R11	0.18	0.33	0.34	0.42	0.54	0.70
R12	0.43	0.45	0.47	0.65	0.82	1.01
R13	0.67	0.74	0.74	1.00	1.21	1.52
R14	0.47	0.56	0.56	0.73	0.88	1.22
R15	0.47	0.48	0.49	0.62	0.89	1.29
R18	0.22	0.23	0.25	0.43	0.51	0.92
R27	0.74	0.79	0.79	1.01	1.29	1.61
R28	0.34	0.38	0.43	0.63	0.90	1.15
R29	0.49	0.63	0.66	0.81	1.06	1.28
WTUA LR	0.25	0.36	0.37	0.47	0.57	0.66
WTUA MR	0.36	0.43	0.45	0.55	0.76	0.85
0831	0.21	0.35	0.36	0.49	0.66	0.81
0837	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
0843	0.29	0.30	0.36	0.50	0.69	0.90
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.34	0.35	0.39	0.58	0.78	0.93
Livonia-RG1	0.32	0.35	0.38	0.39	0.41	0.48
Livonia-RG2	0.20	0.33	0.35	0.53	0.74	0.99
DTW	-	-	-	-	-	1.34

Minimum (in):	**0.48**
Average (in):	**1.06**
Maximum (in):	**1.61**
Standard Deviation (in):	**0.31**
Coefficient of Variation:	**30%**

X.XX* Missing or suspect data (not used).

Table 8-2
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 2

Start Date/Time: 5/5/2015 7:00

Stop Date/Time: 5/11/2015 20:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.28	0.58	0.95	1.29	1.44	2.26
R11	0.78	1.35	1.42	1.47	1.48	2.66
R12	0.20	0.30	0.36	0.54	0.74	1.28
R13	0.31	0.58	0.71	0.84	1.05	1.81
R14	0.25	0.50	0.92	1.21	1.39	1.81
R15	0.38	0.60	0.82	0.99	1.11	1.91
R18	0.24	0.55	0.81	1.15	1.32	1.79
R27	0.28	0.52	0.63	0.78	1.09	2.00
R28	0.40	0.51	0.51	0.51	0.70	1.82
R29	0.41	0.49	0.53	0.66	0.75	2.00
WTUA LR	0.15	0.39	0.46	0.47	0.54	0.84
WTUA MR	0.45	0.45	0.45	0.58	0.69	1.93
0831	0.66	0.75	0.75	0.76	0.76	1.94
0837	0.42	0.80	0.85	0.88	0.88	2.05
0843	0.09	0.19	0.25	0.46	0.54	0.75
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.24	0.37	0.43	0.57	0.71	1.34
Livonia-RG1	0.38	0.42	0.42	0.45	0.45	1.20
Livonia-RG2	0.74	1.19	1.48	1.65	1.67	2.74
DTW	-	-	-	-	-	2.28
					Minimum (in):	**0.75**
X.XX*	Missing or suspect data (not used).				**Average (in):**	**1.81**
					Maximum (in):	**2.74**
					Standard Deviation (in):	**0.53**
					Coefficient of Variation:	**29%**

Table 8-3
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 3

Start Date/Time: 5/30/2015 9:00

Stop Date/Time: 5/31/2015 17:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R11	0.69	1.12	1.34	2.22	3.03	3.10
R12	0.71	0.75	1.06	1.49	2.18	2.24
R13	0.79	0.89	1.39	1.92	2.74	2.78
R14	0.35	0.57	0.88	1.27	2.17	2.28
R15	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R18	0.39	0.54	0.78	1.30	2.07	2.12
R27	0.99	1.15	1.57	2.22	3.19	3.26
R28	0.81	0.85	1.23	1.72	2.60	2.65
R29	0.77	0.83	1.23	1.77	2.49	2.64
WTUA LR	0.67	0.71	1.02	1.37	1.91	1.96
WTUA MR	0.35	0.42	0.69	1.14	1.78	1.88
0831	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
0837	0.67	0.84	1.48	2.20	2.84	2.86
0843	0.59	0.63	1.04	1.57	2.58	2.66
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.62	0.68	0.89	1.35	1.87	1.92
Livonia-RG1	1.02	1.05	1.34	1.80	2.34	2.44
Livonia-RG2	0.40	0.62	0.94	1.77	2.62	2.68
DTW	-	-	-	-	-	2.33

Minimum (in):	**1.88**
Average (in):	**2.49**
Maximum (in):	**3.26**
Standard Deviation (in):	**0.41**
Coefficient of Variation:	**17%**

X.XX* Missing or suspect data (not used).

Table 8-4
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 4

Start Date/Time: 6/12/2015 6:00

Stop Date/Time: 6/18/2015 0:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R11	1.08	1.11	1.11	1.11	1.76	2.18
R12	0.73	0.80	0.99	1.11	1.13	2.44
R13	0.23	0.33	0.49	0.70	0.91	1.43
R14	0.31	0.49	0.65	0.75	0.81	1.67
R15	0.04*	0.08*	0.11*	0.12*	0.14*	0.31*
R18	0.55	0.75	0.88	0.93	0.93	2.15
R27	0.20	0.31	0.34	0.56	0.81	1.44
R28	0.78	0.83	1.04	1.20	1.32	2.57
R29	0.77	0.83	0.99	1.18	1.27	1.84
WTUA LR	0.76	0.78	1.36	1.51	1.60	1.99
WTUA MR	0.82	0.85	0.90	1.12	1.26	2.51
0831	0.28	0.30	0.41	0.54	0.60	0.95
0837	0.14	0.19	0.35	0.50	0.66	0.87
0843	0.35	0.45	0.67	0.84	1.16	1.42
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.72	0.95	1.20	1.40	1.56	2.48
Livonia-RG1	0.75	0.84	0.84	1.03	1.12	2.35
Livonia-RG2	1.39	1.47	1.62	1.86	2.01	2.46
DTW	-	-	-	-	-	2.52

Minimum (in):	**0.87**
Average (in):	**1.96**
Maximum (in):	**2.57**
Standard Deviation (in):	**0.57**
Coefficient of Variation:	**29%**

X.XX* Missing or suspect data (not used).

Table 8-5
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 5

Start Date/Time: 6/22/2015 7:00

Stop Date/Time: 6/23/2015 12:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	1.05	1.05	1.05	1.05	1.05	1.05
R11	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R12	0.56	1.00	1.00	1.03	1.03	1.03
R13	1.03	1.25	1.25	1.26	1.26	1.26
R14	0.94	1.13	1.14	1.16	1.17	1.17
R15	0.95	1.48	1.48	1.48	2.22	2.22
R18	0.76	1.04	1.04	1.04	1.04	1.04
R27	0.47	0.72	1.22	1.52	1.53	1.53
R28	0.55	0.95	0.95	1.04	1.04	1.04
R29	0.71	0.85	0.85	0.94	0.94	0.94
WTUA LR	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
WTUA MR	1.20	1.33	1.33	1.33	1.33	1.33
0831	0.34	0.38	0.39	0.53	0.54	0.54
0837	0.33	0.35	0.35	0.49	0.49	0.49
0843	0.25	0.26	0.26	0.51	0.51	0.51
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	1.01	1.03	1.03	1.15	1.15	1.15
Livonia-RG1	0.59	1.03	1.03	1.03	1.03	1.03
Livonia-RG2	0.68	0.94	0.94	1.31	1.31	1.31
DTW	-	-	-	-	-	1.08

Minimum (in):	**0.49**
Average (in):	**1.10**
Maximum (in):	**2.22**
Standard Deviation (in):	**0.41**
Coefficient of Variation:	**37%**

X.XX* Missing or suspect data (not used).

Table 8-6
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 6

Start Date/Time: 8/2/2015 21:00

Stop Date/Time: 8/3/2015 15:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.34	0.69	0.80	0.81	0.81	0.81
R11	0.49	0.87	0.91	0.91	0.91	0.91
R12	0.70	1.13	1.28	1.28	1.28	1.28
R13	0.44	0.84	0.95	0.95	0.95	0.95
R14	0.37	0.81	0.91	0.91	0.91	0.91
R15	0.72	1.10	1.24	1.25	1.25	1.25
R18	0.26	0.70	0.80	0.80	0.80	0.80
R27	0.37	0.94	1.13	1.13	1.13	1.13
R28	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R29	0.74	1.12	1.21	1.21	1.21	1.21
WTUA LR	1.08	1.21	1.22	1.22	1.22	1.22
WTUA MR	0.61	1.04	1.12	1.12	1.12	1.12
0831	0.87	1.21	1.26	1.26	1.33	1.33
0837	0.68	1.02	1.15	1.15	1.38	1.38
0843	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.45	0.86	1.07	1.07	1.07	1.07
Livonia-RG1	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Livonia-RG2	0.37	0.75	0.82	0.82	0.82	0.82
DTW	-	-	-	-	-	0.82

Minimum (in):	**0.80**
Average (in):	**1.06**
Maximum (in):	**1.38**
Standard Deviation (in):	**0.20**
Coefficient of Variation:	**19%**

X.XX* Missing or suspect data (not used).

Table 8-7
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 7

Start Date/Time: 8/19/2015 13:00

Stop Date/Time: 8/20/2015 15:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.32	0.59	0.82	0.82	0.87	0.87
R11	0.49	0.96	1.10	1.14	1.14	1.14
R12	0.34	0.50	0.67	0.71	0.82	0.82
R13	0.25	0.44	0.59	0.60	0.68	0.68
R14	0.35	0.96	1.15	1.19	1.21	1.21
R15	0.66	0.89	1.24	1.30	1.45	1.45
R18	0.47	0.77	0.87	0.95	1.24	1.28
R27	0.31	0.58	0.95	0.95	0.98	0.98
R28	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R29	0.28	0.51	0.77	0.78	0.93	0.93
WTUA LR	0.45	0.75	0.87	1.12	1.28	1.28
WTUA MR	0.58	0.92	1.15	1.17	1.21	1.21
0831	0.23	0.23	0.23	0.23	0.23	0.23
0837	0.29	0.47	0.62	0.71	0.80	0.80
0843	0.54	0.78	1.00	1.02	1.08	1.08
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.25	0.49	0.67	0.69	0.77	0.77
Livonia-RG1	0.41	0.48	0.59	0.95	1.08	1.08
Livonia-RG2	0.49	0.88	1.09	1.09	1.10	1.10
DTW	-	-	-	-	-	1.03

Minimum (in):	**0.23**
Average (in):	**1.00**
Maximum (in):	**1.45**
Standard Deviation (in):	**0.28**
Coefficient of Variation:	**28%**

X.XX* Missing or suspect data (not used).

Table 8-8
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 8

Start Date/Time: 10/27/2015 22:00

Stop Date/Time: 10/29/2015 3:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.19	0.49	0.78	1.07	1.16	1.16
R11	0.23	0.55	0.79	1.11	1.27	1.28
R12	0.18	0.50	0.78	1.04	1.18	1.19
R13	0.17	0.44	0.69	0.95	1.17	1.18
R14	0.27	0.66	0.86	1.19	1.30	1.30
R15	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R18	0.21	0.59	0.87	1.17	1.29	1.29
R27	0.19	0.53	0.86	1.15	1.27	1.28
R28	0.20	0.50	0.85	1.16	1.41	1.42
R29	0.21	0.56	0.89	1.20	1.30	1.31
WTUA LR	0.20	0.52	0.78	1.05	1.20	1.21
WTUA MR	0.18	0.46	0.66	0.90	0.96	0.97
0831	0.18	0.47	0.74	1.01	1.07	1.08
0837	0.23	0.60	0.85	1.17	1.30	1.30
0843	0.22	0.59	0.89	1.27	1.45	1.45
0850	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
Garden City-RG1	0.18	0.48	0.77	1.06	1.23	1.25
Livonia-RG1	0.01*	0.01*	0.01*	0.02*	0.02*	0.03*
Livonia-RG2	0.19	0.51	0.76	1.05	1.19	1.19
DTW	-	-	-	-	-	1.18

Minimum (in):	**0.97**
Average (in):	**1.24**
Maximum (in):	**1.45**
Standard Deviation (in):	**0.12**
Coefficient of Variation:	**9%**

X.XX* Missing or suspect data (not used).

Table 8-9
Rouge Valley Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 9

Start Date/Time: 12/26/2015 13:00

Stop Date/Time: 12/29/2015 12:00

Gage ID	Peak Hour (in)	Peak 3 Hour (in)	Peak 6 Hour (in)	Peak 12 Hour (in)	Peak 24 Hour (in)	Event Total (in)
R10	0.25	0.47	0.89	1.18	1.22	1.77
R11	0.07	0.16	0.26	0.41	0.42	0.79
R12	0.19	0.42	0.71	1.04	1.09	1.48
R13	0.20	0.42	0.73	0.76	0.76	1.20
R14	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R15	0.25	0.50	0.89	1.21	1.24	1.85
R18	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R27	0.23	0.48	0.89	1.16	1.20	1.69
R28	0.21	0.42	0.81	1.10	1.16	1.58
R29	0.30	0.58	0.88	1.12	1.15	1.49
WTUA LR	0.18	0.36	0.66	0.90	0.94	1.39
WTUA MR	0.12	0.31	0.55	0.77	0.80	1.07
0831	0.19	0.50	0.71	0.84	0.95	1.25
0837	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
0843	0.14	0.37	0.63	0.87	0.92	1.15
0850	0.11	0.31	0.55	0.79	0.84	1.13
Garden City-RG1	0.06	0.13	0.16	0.28	0.32	0.39
Livonia-RG1	0.07	0.16	0.20	0.28	0.33	0.40
Livonia-RG2	0.07	0.16	0.20	0.28	0.33	0.40
DTW	-	-	-	-	-	1.73

Minimum (in):	**0.39**
Average (in):	**1.22**
Maximum (in):	**1.85**
Standard Deviation (in):	**0.48**
Coefficient of Variation:	**40%**

X.XX* Missing or suspect data (not used).

Section 9

Dry/Wet Weather Day Count by Month

Table 9-1
Rouge Valley Sewage Disposal System
Dry/Wet Weather Day Count by Month

Month	Number of Dry Weather Days	Number of Wet Weather Days
Jan-15	25	6
Feb-15	25	3
Mar-15	15	16
Apr-15	22	8
May-15	20	11
Jun-15	7	23
Jul-15	22	9
Aug-15	18	13
Sep-15	17	13
Oct-15	27	4
Nov-15	21	9
Dec-15	20	11
Total	239	126

Notes:

1)A single set of dry days was used to estimate the dry weather flow rates for all of the meters. The dry weather days were determined by analyzing the daily flow rate traces for meter groups near the downstream end of the interceptor system. The meter groups used for this analysis include: Meters [P-9]+[P-10]+[P-11] which represent the Middle Rouge interceptor system, Meters [P-24]+[P-25] which represent the Lower Rouge interceptor system, and Meters [WC-S-1]+[WC-S-2]+[WC-S-3] which represent the entire RVSDS. These meter groups were chosen because they are near the downstream end of the interceptor system, include some dewatering flow rates, and provide a well-defined sort of dry/wet days. Two methods were used for screening out dry and wet weather days using average daily flow rates.

The first method was designed to flag days that exhibited abrupt changes in average daily flow rate from the preceding or following days. This criterion was selected because wet weather events that cause an RDI/I response will significantly raise the average daily flow rate when compared to the preceding day. Likewise, the average daily flow rate on the day following a wet weather event will exhibit a decrease as the RDI/I flow rates subside.

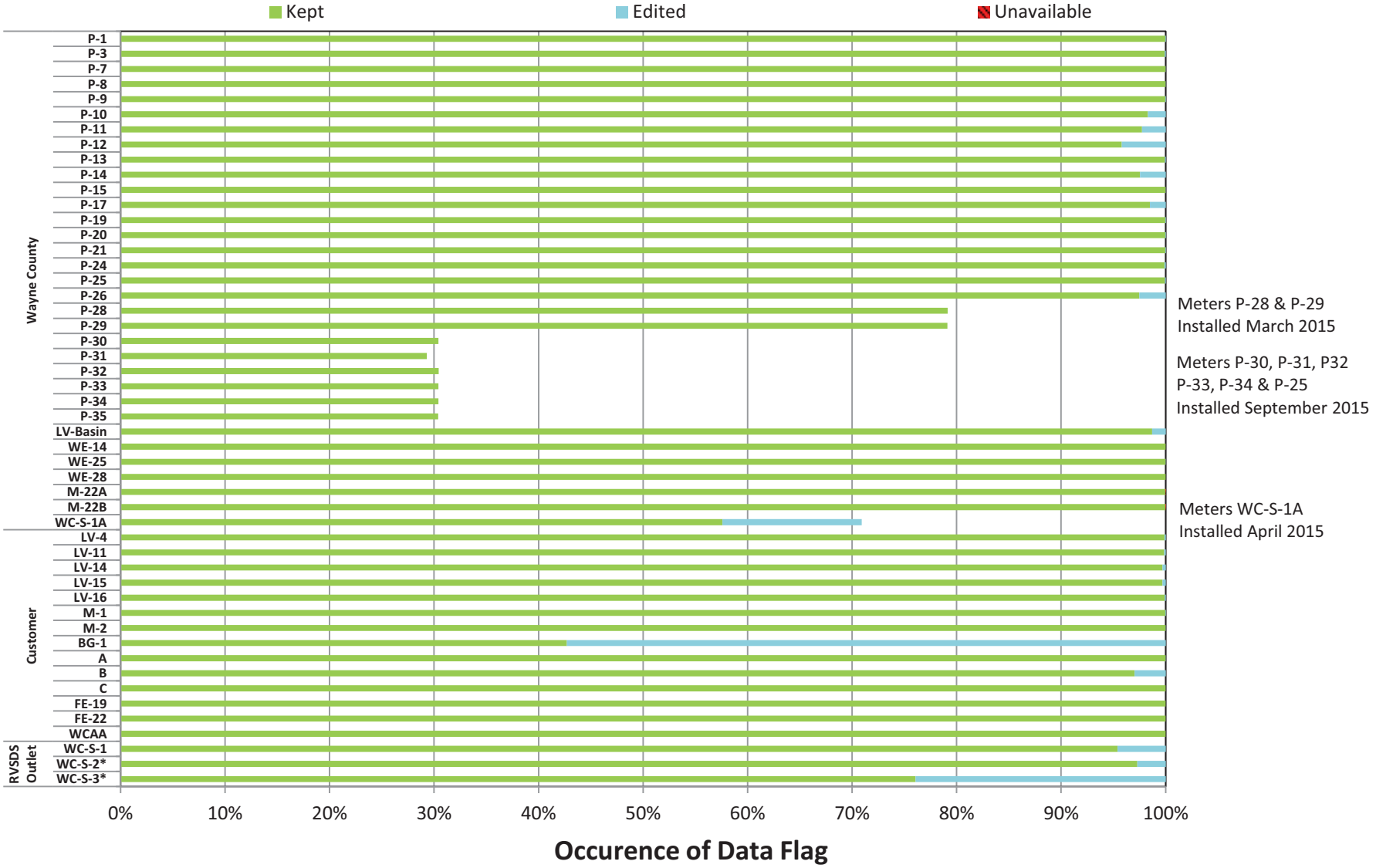
The second method was designed to flag additional wet weather days that were typically found during large, multiple day events that elevated the metered flow rates for a few days. When this happens, the days in the middle of the event are not flagged by the first method because there is no change in the already elevated flow rate. For this method, the average daily flow rate on dry days was constrained to remain below two standard deviations of the three month average flow rate. Any day with a daily average above this was flagged as a wet day.

2) The same set of dry days was used to estimate the dry weather flow rates for all of the meters.

Section 10

Flow Rate Data Flags

Figure 10-1
Rouge Valley Sewage Disposal System
2015 Flow Rate Flags



*DWSD has noted a possible issue with the proper recording of reverse flows at these sites. Reverse flow is believe to only occur rarely. Once this is resolved, data may be updated.

Section 11

Data Edits

Table 11-1
Rouge Valley Sewage Disposal System
Notable Data Edits

Meter	Period		Fix Applied
	Start	Stop	
BG-1	4/24/2015	5/19/2015	Correlation to Meter P-1
	5/19/2015	6/9/2015	Temporary Meter BG-1
	6/9/2015	9/23/2015	Correlation to Meter P-1
	11/13/2015	11/16/2015	
	11/24/2015	12/31/2015	
LV-Basin	11/12/2015	11/12/2015	Correlation to Meter P-12
	11/26/2015	11/29/2015	
	12/18/2015	12/19/2015	
P-10	2/25/2015	3/3/2015	Depth Rating Curve
P-11	4/20/2015	4/27/2015	Correlation to Meters P-9 and P-10
	5/4/2015	5/5/2015	
P-12	3/16/2015	3/31/2015	Correlation to Meter P-9
P-14	1/12/2015	1/13/2015	Depth Rating Curve
	1/16/2015	1/23/2015	
P-17	1/1/2015	1/6/2015	Correlation to Meter P-19
P-26	3/16/2015	3/25/2015	Correlation to Meter P-3
WC-S-1A	5/23/2015	6/3/2015	Correlation to Meter P-14, P-24, and P-25.
	9/7/2015	9/11/2015	
	9/19/2015	9/27/2015	
	10/1/2015	10/9/2015	
	10/16/2015	10/19/2015	
	10/26/2015	10/30/2015	
	11/7/2015	11/19/2015	
	11/21/2015	11/24/2015	
WC-S-1	3/1/2015	3/17/2015	Correlation to Meters P-14, P-24, and P-25
WC-S-2	10/28/2015	11/2/2015	Correlation to Meters P-9, P-10, P-11, and P-13
	12/28/2015	12/31/2015	
WC-S-3	10/5/2015	12/31/2015	Correlation to Meters P-9, P-10, and P-11

Section 12

System Flow Rate Checks

Table 12-1
Rouge Valley Sewage Disposal System
Flow Rate Continuity Check

Meter Grouping	Relative Location	Monthly Average Dry Weather Flow Rate (MGD)												Annual Average (MGD)
		Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	
Comparison 1														
[WC-S-1]	Downstream	39.0	34.5	41.8	44.3	40.9	47.0	36.9	33.1	30.7	29.6	33.2	34.7	37.1
[P-14]+[P-24]+[P-25]	Upstream	39.3	35.6	42.0	42.6	37.9	42.8	34.6	31.4	29.6	28.4	31.4	32.8	35.7
	Incremental	-0.3	-1.1	-0.2	1.7	3.0	4.2	2.2	1.7	1.0	1.2	1.8	2.0	1.5
Comparison 2														
[WC-S-2] + [WC-S-3] + [P-14]	Downstream	42.1	35.3	43.5	46.8	39.9	49.6	36.2	32.1	29.4	28.6	33.0	34.3	37.6
[P-9] + [P-10] + [P-11] + [P-13]	Upstream	35.6	29.9	37.8	40.1	35.2	41.9	31.3	27.6	24.5	24.0	28.3	29.5	32.1
	Incremental	6.5	5.4	5.7	6.7	4.7	7.7	4.9	4.5	4.9	4.6	4.7	4.9	5.4
Comparison 3														
[P-12]	Downstream	8.0	7.1	8.6	10.4	9.6	11.1	8.0	7.0	6.5	6.2	7.0	7.5	8.1
[LV-Basin] + [LV-11]	Upstream	8.4	7.1	8.9	9.9	9.0	10.8	7.6	6.4	5.9	5.6	6.7	7.3	7.8
	Incremental	-0.4	-0.1	-0.3	0.5	0.6	0.3	0.4	0.6	0.6	0.6	0.3	0.2	0.3
Comparison 4														
[P-3] + [P-26]	Downstream	5.8	5.6	5.9	6.5	6.3	6.9	6.7	6.4	6.1	5.8	5.9	6.1	6.2
[P-1]	Upstream	5.2	5.0	5.3	5.7	5.9	6.3	5.9	5.9	5.5	5.4	5.7	5.7	5.6
	Incremental	0.6	0.6	0.6	0.8	0.4	0.6	0.8	0.5	0.6	0.5	0.2	0.4	0.5
Comparison 5														
[P-1]	Downstream	5.2	5.0	5.3	5.7	5.9	6.3	5.9	5.9	5.5	5.4	5.7	5.7	5.6
[BG-1]	Upstream	4.7	4.5	4.7	4.7	4.8	5.1	4.7	4.7	4.4	4.2	4.4	4.3	4.6
	Incremental	0.5	0.5	0.6	1.0	1.1	1.2	1.2	1.2	1.2	1.1	1.4	1.4	1.0
Comparison 6														
[P-24] + [P-25]	Downstream	10.4	10.1	12.7	12.7	11.1	12.4	9.1	7.8	7.5	7.0	7.9	8.4	9.8
[P-20] + [P-21]	Upstream	7.0	6.2	7.5	8.2	7.9	8.7	6.6	5.6	5.3	4.8	5.5	6.1	6.6
	Incremental	3.4	3.9	5.3	4.5	3.2	3.7	2.5	2.2	2.2	2.2	2.4	2.3	3.1
Comparison 7														
[P-21]	Downstream	5.1	4.4	6.0	5.8	4.9	5.9	4.5	3.9	3.7	3.5	4.0	4.3	4.7
[P-19] + [WE-28]	Upstream	4.7	4.3	5.1	5.3	4.7	5.5	4.2	3.7	3.6	3.4	3.7	3.9	4.3
	Incremental	0.4	0.1	0.9	0.5	0.2	0.4	0.3	0.2	0.1	0.1	0.3	0.3	0.3
Comparison 8														
[P-19]	Downstream	4.1	3.7	4.4	4.5	4.0	4.7	3.6	3.2	3.2	3.0	3.3	3.5	3.8
[P-17] + [WE-25] + [FE-19]	Upstream	3.2	3.0	3.5	3.7	3.5	4.1	3.3	2.9	2.9	2.5	2.7	2.9	3.2
	Incremental	0.8	0.8	0.9	0.8	0.5	0.6	0.3	0.3	0.3	0.5	0.6	0.6	0.6
Comparison 9														
[WC-S-1]	Downstream	39.0	34.5	41.8	44.3	40.9	47.0	36.9	33.1	30.7	29.6	33.2	34.7	36.7
[WC-S-1A]	Upstream	-	-	-	45.6	43.3	48.9	38.7	35.8	34.4	32.8	36.2	38.4	39.3
	Incremental	-	-	-	-1.2	-2.3	-1.9	-1.8	-2.7	-3.8	-3.1	-3.0	-3.6	-2.6
Comparison 10														
[WC-S-1A]	Downstream	-	-	-	45.6	43.3	48.9	38.7	35.8	34.4	32.8	36.2	38.4	39.3
[P-14]+[P-24]+[P-25]	Upstream	39.3	35.6	42.0	42.6	37.9	42.8	34.6	31.4	29.6	28.4	31.4	32.8	34.6
	Incremental	-	-	-	3.0	5.3	6.1	4.1	4.5	4.8	4.3	4.7	5.6	4.7
Comparison 11														
[P-33] + [P-34] + [P-35]	Downstream	-	-	-	-	-	-	-	-	24.2	23.7	27.6	28.5	26.0
[P-9] + [P-10] + [P-11]	Upstream	28.9	24.5	30.5	31.4	28.0	32.3	25.1	22.8	20.2	20.1	23.4	24.3	22.0
	Incremental	-	-	-	-	-	-	-	-	4.0	3.7	4.2	4.2	4.0
Comparison 12														
[P-30] + [P-31]+ [P-32]	Downstream	-	-	-	-	-	-	-	-	27.7	27.1	31.4	32.7	29.7
[P-13] + [P-33] + [P-34]+ [P-35]	Upstream	-	-	-	-	-	-	-	-	28.5	27.6	32.5	33.7	30.6
	Incremental	-	-	-	-	-	-	-	-	-0.7	-0.5	-1.1	-1.0	-0.8
Comparison 13														
[WC-S-2] + [WC-S-3] + [P-14]	Downstream	42.1	35.3	43.5	46.8	39.9	49.6	36.2	32.1	29.4	28.6	33.0	34.3	31.3
[P-30] + [P-31]+ [P-32]	Upstream	-	-	-	-	-	-	-	-	27.7	27.1	31.4	32.7	29.7
	Incremental	-	-	-	-	-	-	-	-	1.6	1.5	1.6	1.6	1.6

Table 12-2

Rouge Valley Sewage Disposal System

Monthly Average Dry Weather Flow Rate Versus Residential Population Check

Meter Grouping	Year 2010 Residential Population	Metric	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Annual Average	Percent of Area as Residential	Residential Area (acres)	Total Developed Land (Acres)
[BG-1]	43,217	MGD	4.7	4.5	4.7	4.7	4.8	5.1	4.7	4.7	4.4	4.2	4.4	4.3	4.6	62%	7,768	12,473
		GPCD	*107.6*	*104.6*	*109.7*	*108.8*	*111.1*	*117.3*	*108.8*	*107.8*	*101.1*	*97.9*	*101.1*	*98.6*	*106.2*			
[P-1]	49,143	MGD	5.2	5.0	5.3	5.7	5.9	6.3	5.9	5.9	5.5	5.4	5.7	5.7	5.6	63%	8,421	13,361
		GPCD	*105.4*	*101.9*	*108.5*	*116.0*	*119.7*	*128.2*	*120.1*	*119.0*	*112.5*	*108.9*	*116.6*	*115.6*	*114.4*			
[P-3] + [P-26]	55,091	MGD	5.8	5.6	5.9	6.5	6.3	6.9	6.7	6.4	6.1	5.8	5.9	6.1	6.2	63%	8,762	13,982
		GPCD	*105.5*	*101.3*	*107.5*	*117.1*	*113.4*	*124.5*	*122.3*	*115.3*	*110.4*	*105.8*	*107.5*	*110.9*	*111.8*			
[LV-16]	5,147	MGD	1.1	0.9	1.1	1.3	1.3	1.6	1.2	0.9	0.8	0.8	0.9	0.9	1.1	62%	599	963
		GPCD	*205.9*	*182.6*	*211.8*	*256.5*	*248.7*	*308.9*	*240.9*	*176.8*	*157.4*	*153.5*	*176.8*	*180.7*	*208.4*			
[C] - [B] - [A]	3,074	MGD	1.3	1.2	1.3	1.3	1.3	1.3	1.1	0.9	0.7	0.7	0.8	0.8	1.1	72%	250	347
		GPCD	*419.6*	*380.6*	*409.9*	*413.1*	*429.4*	*426.2*	*348.1*	*299.3*	*227.7*	*234.2*	*273.3*	*266.8*	*343.8*			
[LV-15]	6,570	MGD	1.3	1.0	1.4	1.6	1.4	2.1	1.6	1.3	1.1	1.0	1.2	1.2	1.3	81%	484	596
		GPCD	*191.8*	*155.3*	*211.6*	*243.5*	*205.5*	*324.2*	*242.0*	*193.3*	*161.3*	*150.7*	*176.6*	*184.2*	*203.5*			
[WE-14]	26,724	MGD	3.4	3.1	3.5	3.7	3.5	3.9	3.5	3.3	3.1	2.9	3.1	3.4	3.4	60%	2,000	3,348
		GPCD	*126.1*	*115.6*	*132.1*	*138.8*	*129.8*	*147.4*	*131.0*	*121.6*	*116.4*	*107.0*	*116.4*	*126.1*	*125.7*			
[M-2]	13,739	MGD	2.0	1.6	2.1	2.4	2.1	2.5	1.9	1.5	1.5	1.3	1.6	1.8	1.8	81%	1,143	1,409
		GPCD	*142.7*	*116.5*	*150.7*	*174.0*	*150.7*	*179.1*	*136.1*	*110.6*	*107.7*	*93.2*	*115.7*	*127.4*	*133.7*			
[M-1]	14,943	MGD	1.5	1.2	1.6	1.9	1.6	1.8	1.4	1.2	1.2	1.1	1.6	1.5	1.5	81%	1,181	1,453
		GPCD	*101.7*	*80.3*	*109.8*	*127.1*	*109.1*	*122.5*	*95.0*	*81.6*	*80.3*	*74.3*	*103.7*	*101.7*	*99.0*			
[LV-14]	7,738	MGD	1.1	0.9	1.2	1.5	1.1	1.2	0.9	0.7	0.7	0.7	0.8	0.9	1.0	56%	573	1,029
		GPCD	*143.4*	*117.6*	*159.0*	*191.3*	*143.4*	*155.1*	*115.0*	*95.6*	*93.0*	*89.2*	*108.6*	*115.0*	*127.2*			
[LV-11] + [LV-4]	39,591	MGD	4.6	4.1	4.8	5.3	5.0	5.8	4.2	3.5	3.3	3.1	3.6	3.8	4.2	49%	2,439	5,018
		GPCD	*114.9*	*102.8*	*121.2*	*133.4*	*127.0*	*145.5*	*105.3*	*87.9*	*83.1*	*79.1*	*91.7*	*94.7*	*107.2*			
[LV-11] + [LV-Basin]	28,266	MGD	8.4	7.1	8.9	9.9	9.0	10.8	7.6	6.4	5.9	5.6	6.7	7.3	7.8	64%	7,708	11,998
		GPCD	*295.4*	*252.2*	*314.5*	*348.8*	*319.1*	*381.4*	*268.2*	*227.1*	*209.4*	*198.5*	*235.3*	*257.6*	*275.6*			
[P-12]	68,311	MGD	8.0	7.1	8.6	10.4	9.6	11.1	8.0	7.0	6.5	6.2	7.0	7.5	8.1	61%	7,733	12,722
		GPCD	*117.1*	*103.4*	*126.5*	*152.1*	*140.2*	*162.3*	*117.1*	*102.6*	*95.6*	*90.6*	*102.0*	*109.8*	*118.3*			
[P-9] + [P-10] + [P-11] - [FE-22]	223,281	MGD	24.9	21.4	26.4	28.1	25.6	29.3	23.3	20.0	18.6	18.0	20.9	22.7	23.3	64%	24,438	38,468
		GPCD	*111.5*	*95.8*	*118.2*	*126.0*	*114.5*	*131.2*	*104.2*	*89.4*	*83.2*	*80.6*	*93.6*	*101.8*	*104.2*			
[P-13]	48,847	MGD	6.7	5.4	7.3	8.7	7.2	9.6	6.2	4.8	4.2	3.9	4.9	5.2	6.2	73%	3,636	4,961
		GPCD	*138.0*	*110.5*	*149.0*	*178.1*	*148.2*	*196.3*	*125.9*	*98.1*	*86.8*	*79.6*	*100.9*	*105.4*	*126.4*			
[WC-S-2] + [WC-S-3] + [P-14] - [FE-22]	308,765	MGD	38.1	32.2	39.4	43.5	37.6	46.6	34.4	29.3	27.7	26.5	30.5	32.7	34.9	66%	30,460	46,337
		GPCD	*123.4*	*104.2*	*127.5*	*140.9*	*121.6*	*150.8*	*111.2*	*94.9*	*89.7*	*85.8*	*98.8*	*106.0*	*112.9*			
[P-15]	6,938	MGD	0.7	0.7	0.8	1.0	0.9	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	36%	1,626	4,471
		GPCD	*98.0*	*98.0*	*112.4*	*136.9*	*135.5*	*147.0*	*122.5*	*113.9*	*111.0*	*109.5*	*112.4*	*116.7*	*117.9*			
[P-17]	9,561	MGD	1.6	1.5	1.7	1.8	1.8	1.9	1.7	1.6	1.7	1.4	1.5	1.6	1.6	37%	2,476	6,748
		GPCD	*165.3*	*160.0*	*177.8*	*185.1*	*188.3*	*198.7*	*173.6*	*166.3*	*174.7*	*145.4*	*151.7*	*163.2*	*170.8*			
[WE-25]	16,269	MGD	1.7	1.4	1.8	2.0	1.7	2.2	1.6	1.3	1.2	1.1	1.2	1.3	1.5	70%	1,503	2,141
		GPCD	*101.4*	*87.3*	*108.8*	*120.5*	*104.5*	*135.2*	*99.0*	*79.3*	*72.5*	*68.2*	*76.2*	*82.4*	*94.6*			
[P-19] - [FE-19]	32,127	MGD	4.1	3.7	4.4	4.5	4.0	4.7	3.6	3.2	3.2	3.0	3.3	3.5	3.8	46%	4,454	9,630
		GPCD	*126.1*	*116.1*	*136.6*	*140.1*	*124.2*	*145.4*	*112.1*	*99.6*	*99.3*	*93.1*	*102.7*	*109.3*	*117.0*			
[WE-28]	14,096	MGD	0.6	0.5	0.7	0.8	0.7	0.9	0.6	0.5	0.4	0.4	0.4	0.4	0.6	72%	931	1,294
		GPCD	*44.0*	*36.9*	*51.1*	*55.3*	*49.7*	*60.3*	*45.4*	*34.1*	*31.2*	*27.0*	*28.4*	*30.5*	*41.2*			
[P-21] - [FE-19]	51,271	MGD	5.1	4.4	6.0	5.8	4.9	5.9	4.5	3.9	3.7	3.5	4.0	4.3	4.7	50%	5,665	11,264
		GPCD	*98.9*	*85.2*	*117.0*	*113.1*	*95.2*	*114.9*	*88.4*	*75.1*	*72.8*	*68.5*	*77.0*	*83.3*	*90.8*			
[P-25] - [FE-19]	66,119	MGD	7.1	7.1	9.6	8.9	6.9	8.1	5.9	5.1	5.1	4.8	5.4	5.6	6.6	54%	6,687	12,479
		GPCD	*107.5*	*107.2*	*145.5*	*134.3*	*105.0*	*122.2*	*88.6*	*77.4*	*76.5*	*72.3*	*80.9*	*84.8*	*100.1*			
[P-20]	12,503	MGD	2.0	1.8	1.5	2.4	3.0	2.8	2.0	1.7	1.5	1.3	1.5	1.9	1.9	12%	731	6,147
		GPCD	*156.8*	*144.0*	*116.0*	*190.4*	*240.7*	*227.1*	*161.6*	*137.6*	*121.6*	*104.0*	*120.0*	*148.8*	*155.7*			
[P-24]	29,900	MGD	3.3	3.0	3.1	3.8	4.2	4.3	3.2	2.7	2.4	2.2	2.5	2.8	3.1	66%	2,294	3,498
		GPCD	*109.4*	*100.3*	*103.7*	*126.4*	*139.8*	*145.2*	*107.4*	*90.0*	*80.9*	*74.9*	*84.3*	*94.0*	*104.7*			
[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-19] - [FE-22] + [C] - [B] - [A]	404,784	MGD	49.5	42.3	53.2	59.2	53.0	64.4	46.7	39.7	36.9	35.5	41.0	43.9	47.1	59%	39,441	67,194
		GPCD	*122.2*	*104.5*	*131.4*	*146.2*	*131.0*	*159.2*	*115.4*	*98.2*	*91.2*	*87.6*	*101.2*	*108.5*	*116.4*			

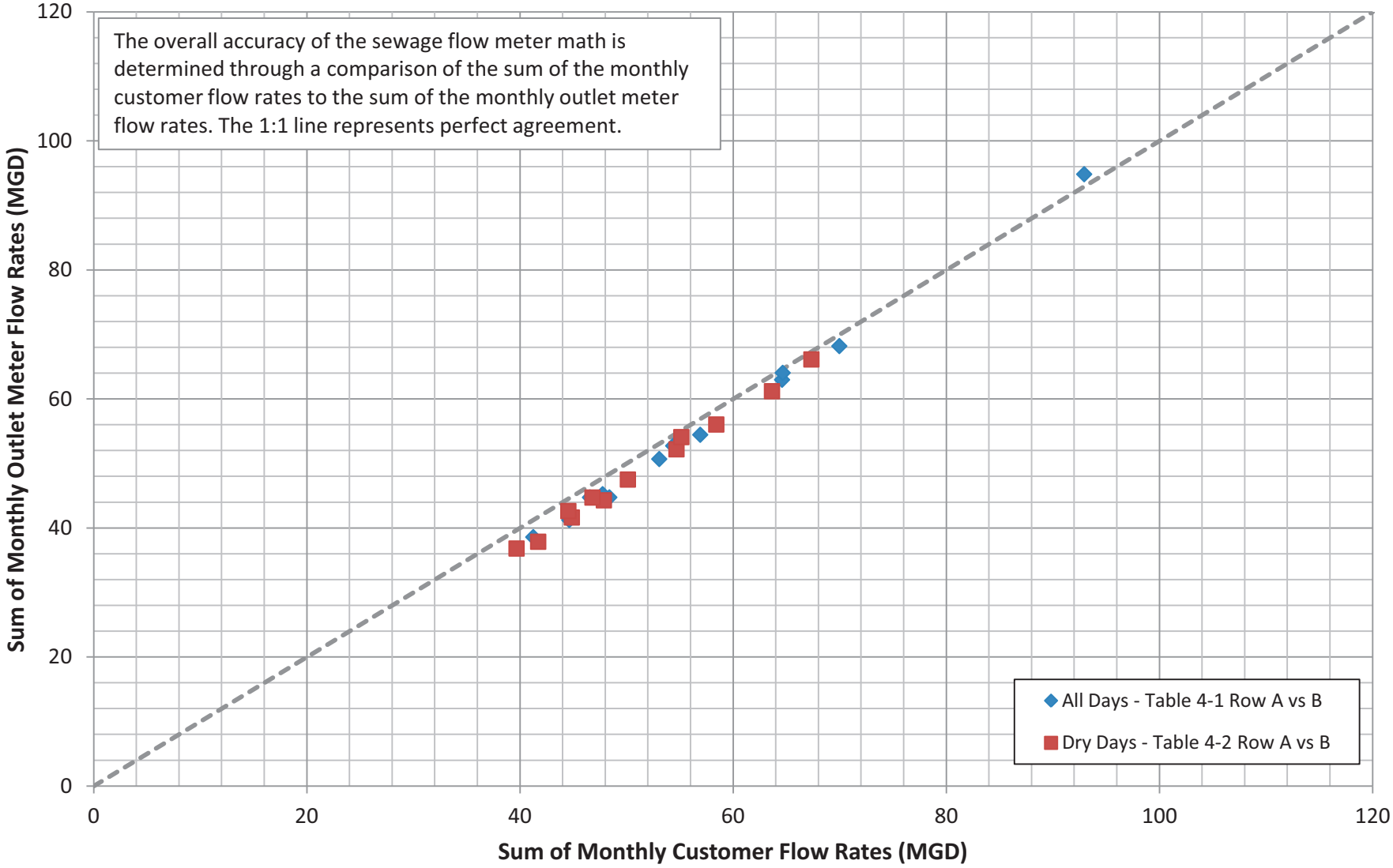
Legend:

xx.x	Per capita flow rates are greater than the district-wide average by 20% or more.
xx.x	Per capita flow rates are less than the district-wide average by 20% or more.

Figure 12-1

Rouge Valley Sewage Disposal System

End of System Monthly Flow Rate Comparison



Section 13

Annual Meter Reports

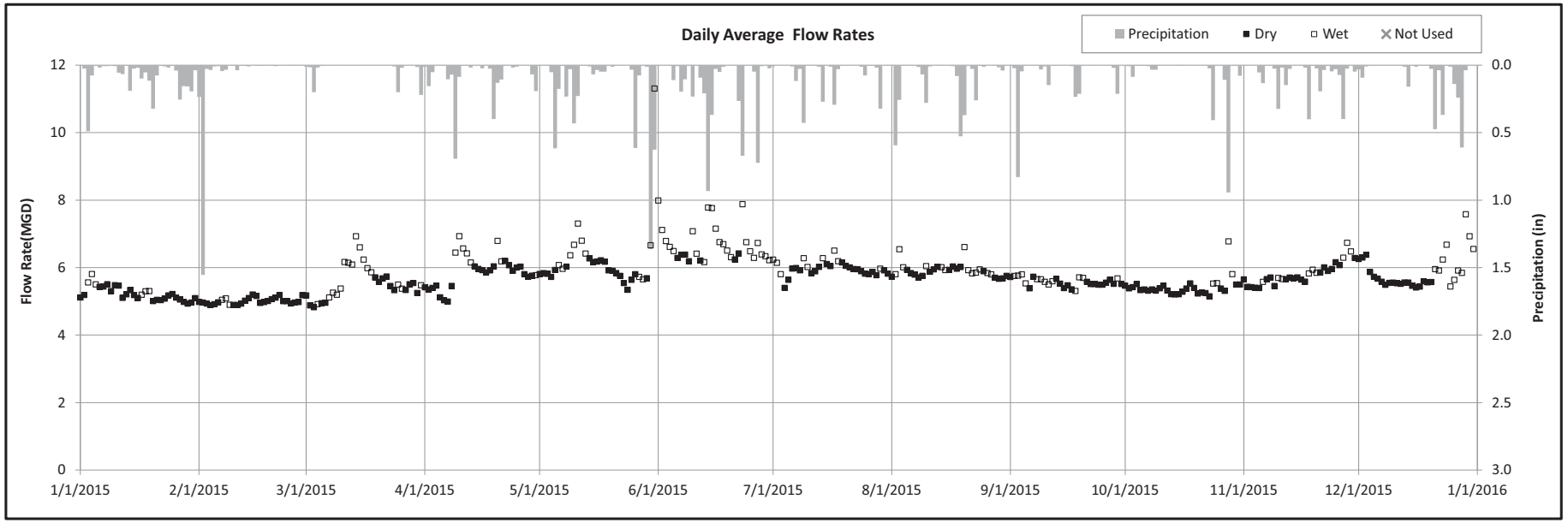
Rouge Valley Sewage Disposal System

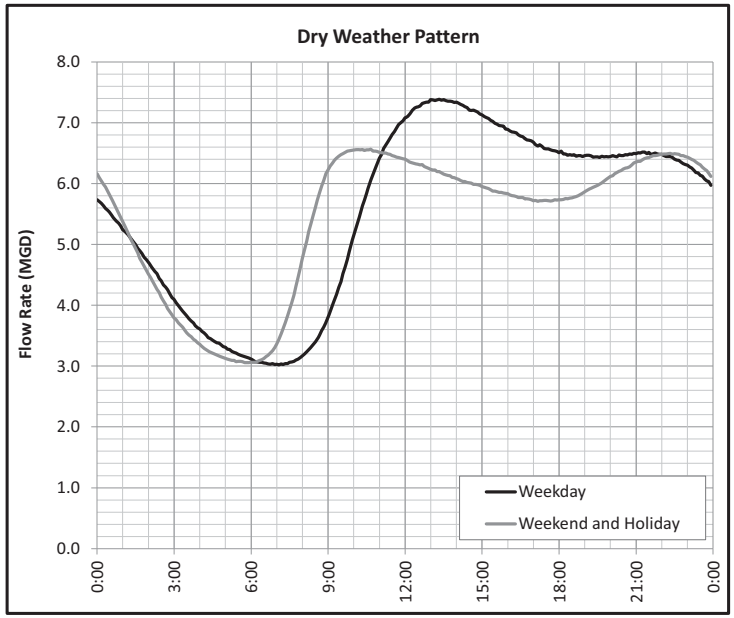
Annual Meter Report

Meter: P-1
Interceptor Manhole ID: NAI 1-13A

Location: 5 Mile Road and Hines Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	5.2	162.1	5.2	160.6	25	6
Feb-15	5.0	140.3	5.0	140.3	25	3
Mar-15	5.6	172.1	5.3	165.2	15	16
Apr-15	5.9	176.7	5.7	171.0	22	8
May-15	6.2	192.5	5.9	182.3	20	11
Jun-15	6.7	200.7	6.3	189.0	7	23
Jul-15	6.0	185.4	5.9	182.9	22	9
Aug-15	5.9	183.5	5.9	181.4	18	13
Sep-15	5.6	167.4	5.5	165.9	17	13
Oct-15	5.4	168.0	5.4	165.9	27	4
Nov-15	5.8	174.3	5.7	171.9	21	9
Dec-15	5.9	182.3	5.7	176.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	10.47	4/9/15 21:15	4.83	4/8/15 10:55
2	1.81	5/5/2015	5/11/2015	9.31	5/10/15 17:25	1.28	5/10/15 17:45
3	2.49	5/30/2015	5/31/2015	13.35	5/31/15 11:50	1.60	5/31/15 11:15
4	1.96	6/12/2015	6/18/2015	11.84	6/14/15 15:30	1.50	6/14/15 15:50
5	1.10	6/22/2015	6/23/2015	8.94	6/23/15 2:45	1.26	6/23/15 3:10
6	1.06	8/2/2015	8/3/2015	7.47	8/3/15 11:30	1.14	8/3/15 12:10
7	1.00	8/19/2015	8/20/2015	7.74	8/20/15 9:30	1.17	8/20/15 10:10
8	1.24	10/27/2015	10/29/2015	9.34	10/28/15 8:55	1.27	10/28/15 9:15
9	1.22	12/26/2015	12/29/2015	9.27	12/29/15 11:55	1.24	12/29/15 11:55

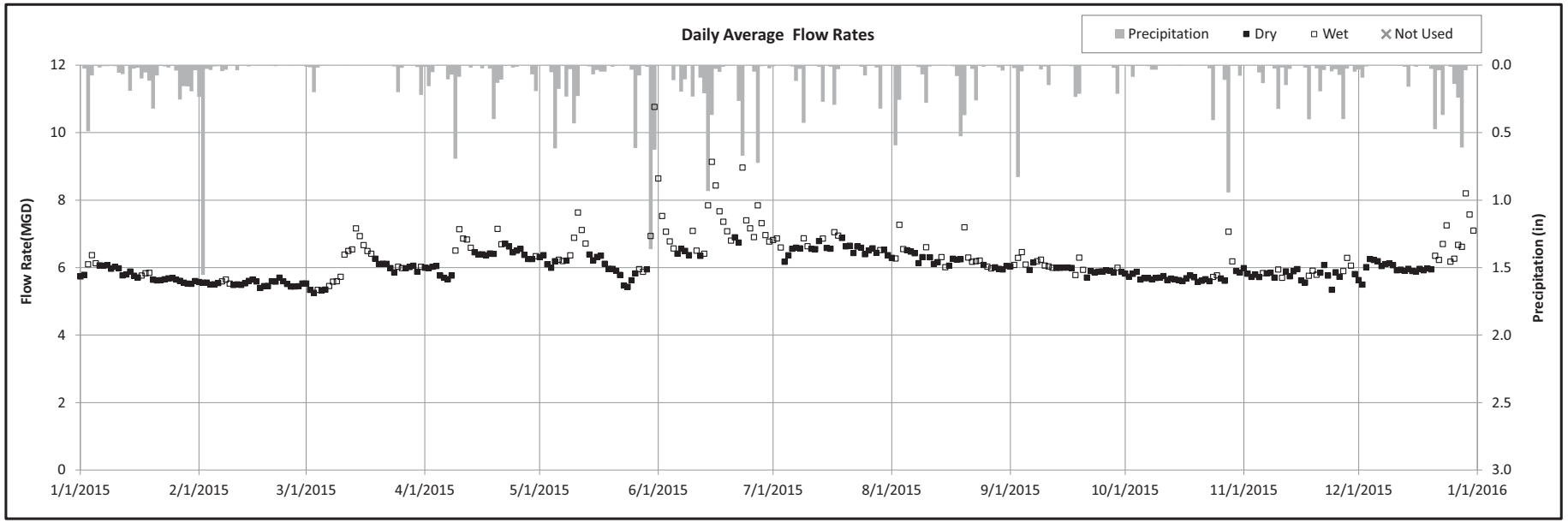
Rouge Valley Sewage Disposal System

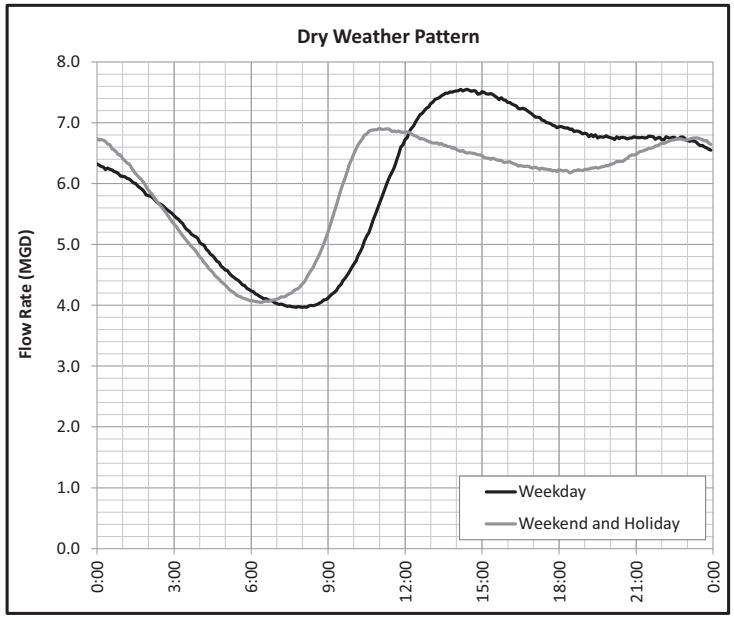
Annual Meter Report

Meter: P-3
Interceptor Manhole ID: MRIR 5C-01

Location: Plymouth Road East of I-275
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	5.8	180.1	5.8	178.6	25	6
Feb-15	5.5	155.1	5.5	154.8	25	3
Mar-15	6.0	186.0	5.8	180.1	15	16
Apr-15	6.4	191.1	6.2	186.9	22	8
May-15	6.4	197.2	6.0	186.6	20	11
Jun-15	7.2	216.0	6.6	196.5	7	23
Jul-15	6.6	204.9	6.5	202.7	22	9
Aug-15	6.3	194.7	6.2	192.2	18	13
Sep-15	6.0	180.3	5.9	178.2	17	13
Oct-15	5.8	178.6	5.7	176.7	27	4
Nov-15	5.8	174.6	5.8	173.7	21	9
Dec-15	6.3	194.7	6.0	185.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	9.42	4/9/15 22:10	2.84	4/8/15 13:50
2	1.81	5/5/2015	5/11/2015	9.23	5/10/15 18:20	1.42	5/10/15 16:40
3	2.49	5/30/2015	5/31/2015	13.06	5/31/15 12:15	1.71	5/31/15 13:05
4	1.96	6/12/2015	6/18/2015	11.00	6/15/15 17:10	1.51	6/14/15 16:55
5	1.10	6/22/2015	6/23/2015	10.25	6/23/15 3:40	1.44	6/23/15 10:20
6	1.06	8/2/2015	8/3/2015	8.39	8/3/15 0:10	1.26	8/3/15 0:55
7	1.00	8/19/2015	8/20/2015	8.16	8/20/15 11:00	1.23	8/20/15 11:05
8	1.24	10/27/2015	10/29/2015	9.22	10/28/15 10:25	1.30	10/28/15 9:50
9	1.22	12/26/2015	12/29/2015	9.15	12/29/15 11:55	1.27	12/29/15 11:55

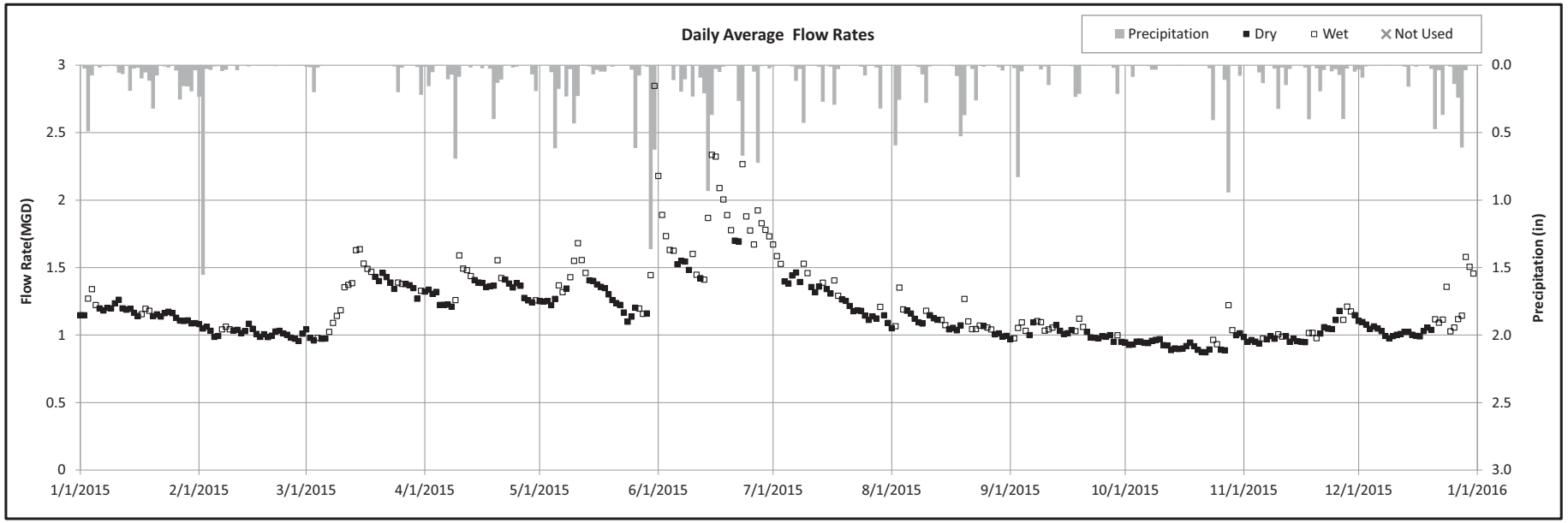
Rouge Valley Sewage Disposal System

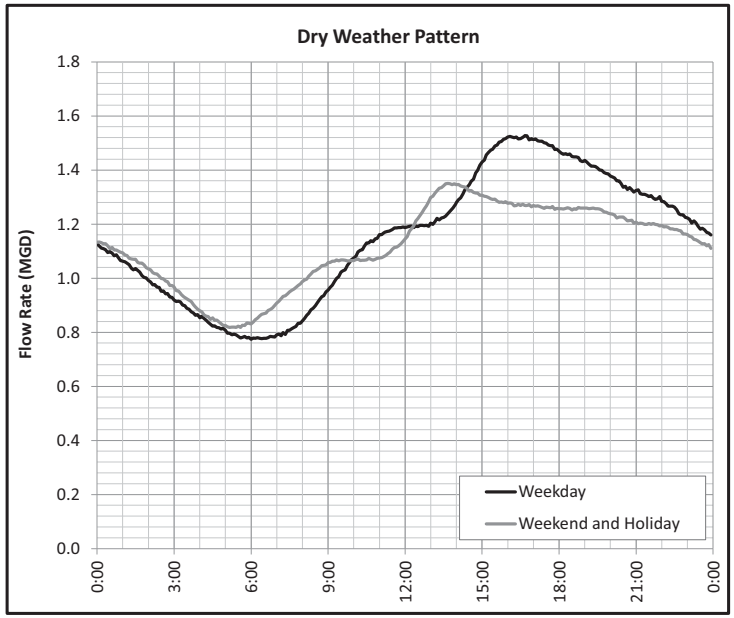
Annual Meter Report

Meter: P-7
Interceptor Manhole ID: PWI I-03

Location: Joy Road West of Farmington Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.2	36.3	1.2	36.0	25	6
Feb-15	1.0	28.6	1.0	28.6	25	3
Mar-15	1.3	40.0	1.3	38.8	15	16
Apr-15	1.4	40.5	1.3	39.6	22	8
May-15	1.4	42.2	1.3	39.1	20	11
Jun-15	1.8	53.7	1.6	46.8	7	23
Jul-15	1.3	40.9	1.3	39.1	22	9
Aug-15	1.1	34.1	1.1	33.2	18	13
Sep-15	1.0	30.9	1.0	30.0	17	13
Oct-15	0.9	29.1	0.9	28.8	27	4
Nov-15	1.0	30.6	1.0	30.0	21	9
Dec-15	1.1	34.1	1.0	31.9	20	11

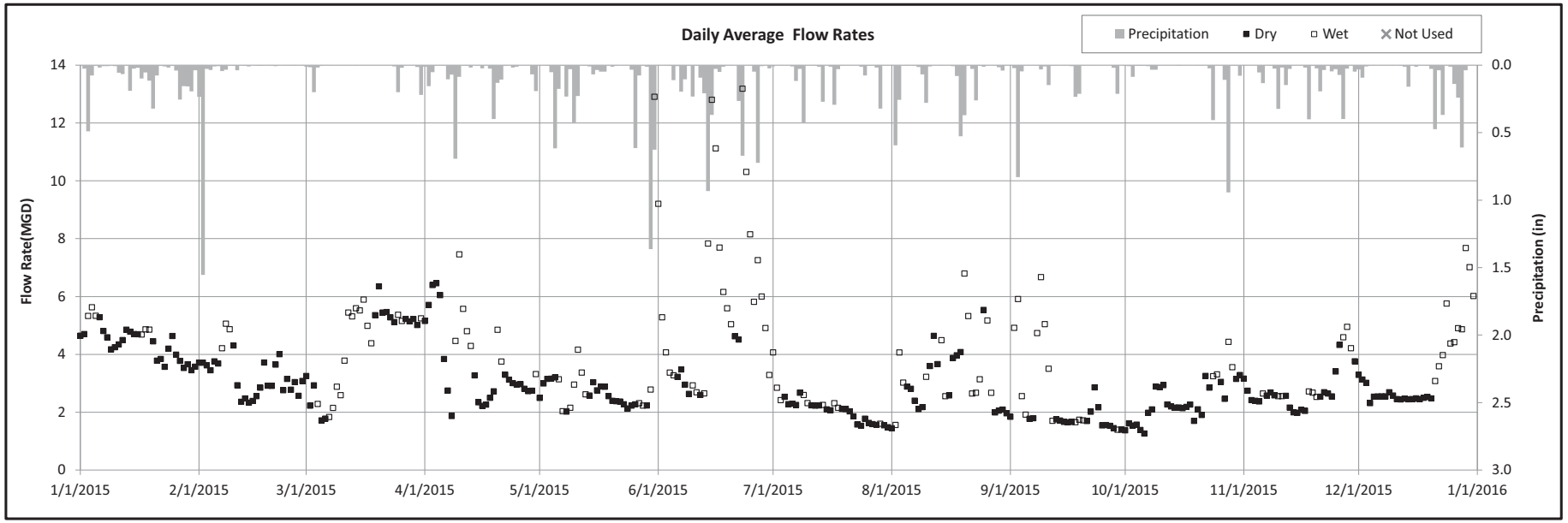
Statistics for Significant Wet Weather Events

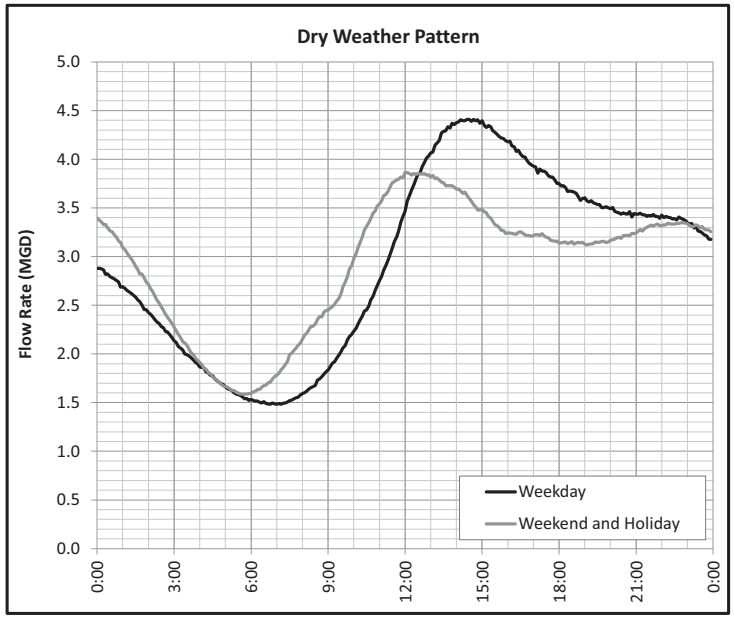
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	2.06	4/10/15 0:10	1.96	4/8/15 16:40
2	1.81	5/5/2015	5/11/2015	2.26	5/10/15 17:50	1.25	5/10/15 21:10
3	2.49	5/30/2015	5/31/2015	3.62	5/31/15 13:20	1.54	5/31/15 13:30
4	1.96	6/12/2015	6/18/2015	3.43	6/15/15 16:40	1.49	6/15/15 16:55
5	1.10	6/22/2015	6/23/2015	2.54	6/23/15 2:50	1.29	6/23/15 3:05
6	1.06	8/2/2015	8/3/2015	1.63	8/3/15 0:55	1.10	8/3/15 1:05
7	1.00	8/19/2015	8/20/2015	1.50	8/20/15 12:30	1.07	8/20/15 12:55
8	1.24	10/27/2015	10/29/2015	1.78	10/28/15 12:25	1.19	10/28/15 12:30
9	1.22	12/26/2015	12/29/2015	1.58	12/29/15 11:55	1.16	12/26/15 17:10

Meter: P-8
Interceptor Manhole ID: RVI 9-20

Location: Joy Road West of Farmington Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	4.4	137.6	4.3	132.4	25	6
Feb-15	3.3	93.0	3.2	88.2	25	3
Mar-15	4.3	133.9	4.4	135.5	15	16
Apr-15	3.9	115.8	3.5	105.3	22	8
May-15	3.0	92.7	2.6	80.6	20	11
Jun-15	5.8	172.8	3.4	102.9	7	23
Jul-15	2.1	66.3	2.0	61.7	22	9
Aug-15	3.3	101.1	3.0	92.7	18	13
Sep-15	2.5	73.5	1.8	53.1	17	13
Oct-15	2.4	75.3	2.3	69.8	27	4
Nov-15	2.8	85.2	2.7	79.5	21	9
Dec-15	3.5	107.6	2.6	80.3	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	14.45	4/9/15 22:00	3.51	4/9/15 11:25
2	1.81	5/5/2015	5/11/2015	9.12	5/6/15 10:10	1.46	5/6/15 10:45
3	2.49	5/30/2015	5/31/2015	18.78	5/31/15 13:30	2.33	5/31/15 15:10
4	1.96	6/12/2015	6/18/2015	19.97	6/15/15 17:15	2.28	6/15/15 17:40
5	1.10	6/22/2015	6/23/2015	15.88	6/23/15 10:10	1.95	6/23/15 10:50
6	1.06	8/2/2015	8/3/2015	6.51	8/3/15 11:40	1.20	8/3/15 12:05
7	1.00	8/19/2015	8/20/2015	9.28	8/20/15 10:55	1.41	8/20/15 12:05
8	1.24	10/27/2015	10/29/2015	7.02	10/28/15 10:50	1.24	10/28/15 9:50
9	1.22	12/26/2015	12/29/2015	8.94	12/29/15 11:55	1.35	12/29/15 11:55

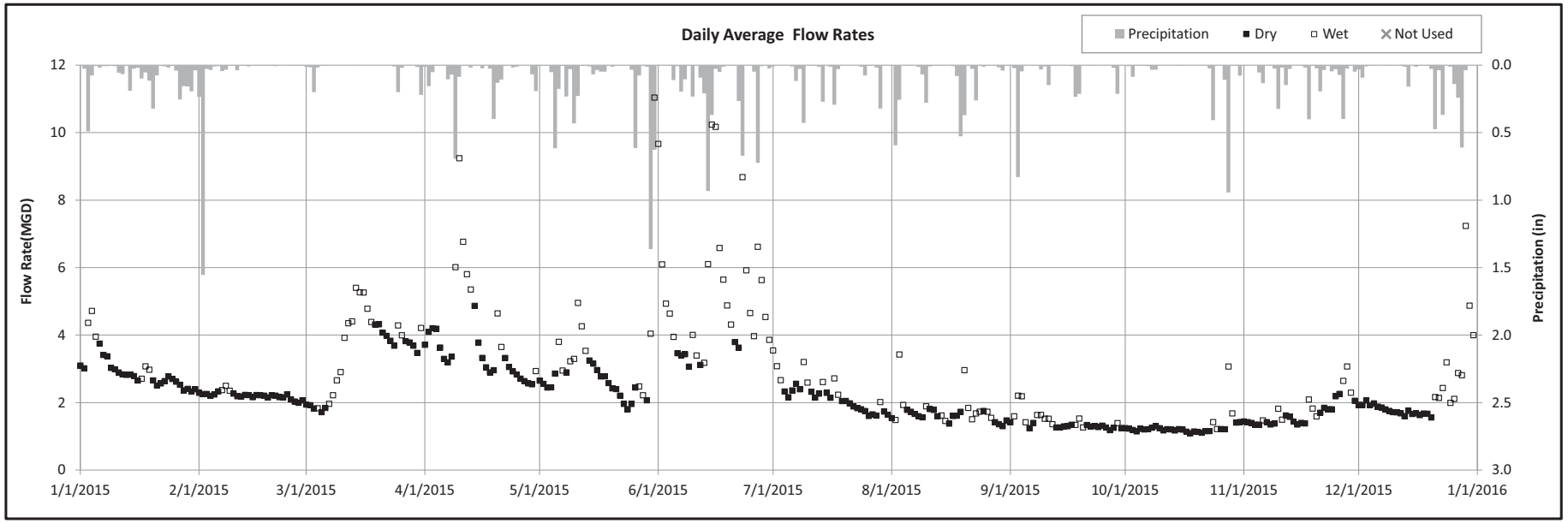
Rouge Valley Sewage Disposal System

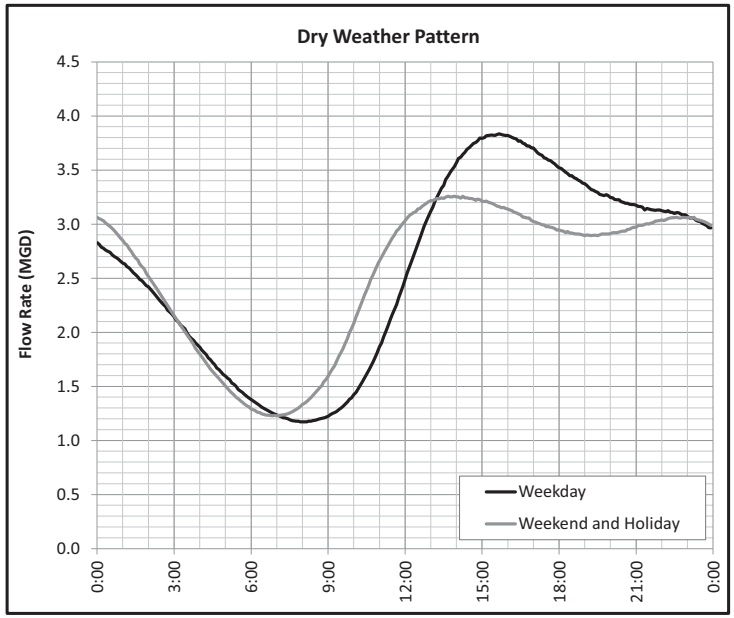
Annual Meter Report

Meter: P-9
Interceptor Manhole ID: NHV 3-34

Location: Hines Drive East of Inkster Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	3.0	91.8	2.8	86.8	25	6
Feb-15	2.2	61.9	2.2	61.3	25	3
Mar-15	3.6	110.1	3.2	99.5	15	16
Apr-15	3.9	117.6	3.3	99.6	22	8
May-15	3.1	96.4	2.5	78.4	20	11
Jun-15	5.2	155.7	3.4	102.3	7	23
Jul-15	2.2	69.1	2.0	62.6	22	9
Aug-15	1.7	53.3	1.6	49.3	18	13
Sep-15	1.4	42.6	1.3	38.7	17	13
Oct-15	1.3	40.0	1.2	37.5	27	4
Nov-15	1.7	51.9	1.6	48.0	21	9
Dec-15	2.3	71.3	1.8	54.9	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	15.22	4/9/15 22:30	2.76	4/9/15 23:15
2	1.81	5/5/2015	5/11/2015	5.84	5/11/15 19:55	1.80	5/11/15 19:50
3	2.49	5/30/2015	5/31/2015	11.62	5/31/15 10:05	8.80	5/31/15 15:30
4	1.96	6/12/2015	6/18/2015	12.87	6/15/15 18:00	5.16	6/15/15 19:10
5	1.10	6/22/2015	6/23/2015	10.89	6/23/15 4:35	2.98	6/23/15 5:00
6	1.06	8/2/2015	8/3/2015	6.26	8/3/15 2:20	1.93	8/3/15 2:55
7	1.00	8/19/2015	8/20/2015	3.60	8/20/15 12:25	1.31	8/20/15 13:15
8	1.24	10/27/2015	10/29/2015	5.17	10/28/15 11:10	1.70	10/28/15 11:15
9	1.22	12/26/2015	12/29/2015	8.20	12/29/15 2:30	2.32	12/29/15 2:55

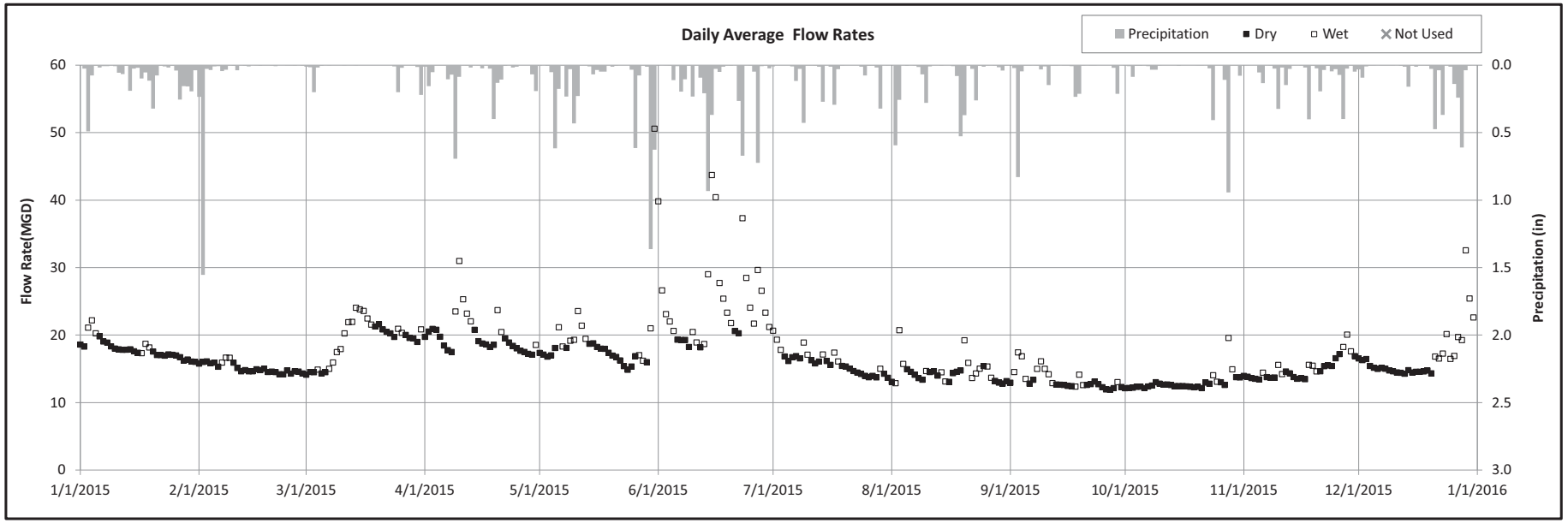
Rouge Valley Sewage Disposal System

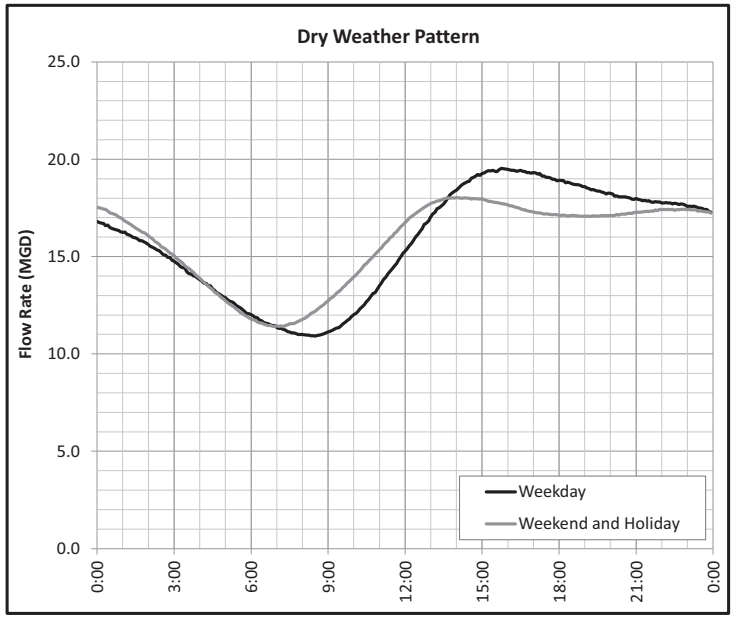
Annual Meter Report

Meter: P-10
Interceptor Manhole ID: RVI 6-50

Location: Hines Drive East of Inkster Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	18.0	556.5	17.5	543.7	25	6
Feb-15	15.1	423.4	15.0	418.9	25	3
Mar-15	19.3	597.1	18.3	566.7	15	16
Apr-15	20.1	601.5	18.8	564.3	22	8
May-15	19.0	589.0	17.1	530.1	20	11
Jun-15	25.0	749.1	19.3	579.3	7	23
Jul-15	16.0	495.1	15.3	472.8	22	9
Aug-15	14.5	449.8	14.0	432.5	18	13
Sep-15	13.4	401.4	12.5	375.3	15	15
Oct-15	13.0	401.5	12.6	390.0	27	4
Nov-15	15.0	450.3	14.5	435.0	21	9
Dec-15	16.9	523.3	15.0	464.4	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	42.79	4/9/15 22:55	3.28	4/9/15 23:35
2	1.81	5/5/2015	5/11/2015	26.99	5/11/15 18:55	2.51	5/11/15 18:55
3	2.49	5/30/2015	5/31/2015	55.80	5/31/15 16:45	8.76	5/31/15 15:30
4	1.96	6/12/2015	6/18/2015	58.10	6/15/15 19:10	5.09	6/15/15 18:55
5	1.10	6/22/2015	6/23/2015	44.48	6/23/15 4:10	3.59	6/23/15 5:05
6	1.06	8/2/2015	8/3/2015	29.35	8/3/15 2:15	2.64	8/3/15 2:40
7	1.00	8/19/2015	8/20/2015	21.11	8/20/15 13:20	2.16	8/20/15 14:05
8	1.24	10/27/2015	10/29/2015	25.81	10/28/15 11:10	2.46	10/28/15 11:50
9	1.22	12/26/2015	12/29/2015	35.96	12/29/15 1:55	3.03	12/29/15 2:20

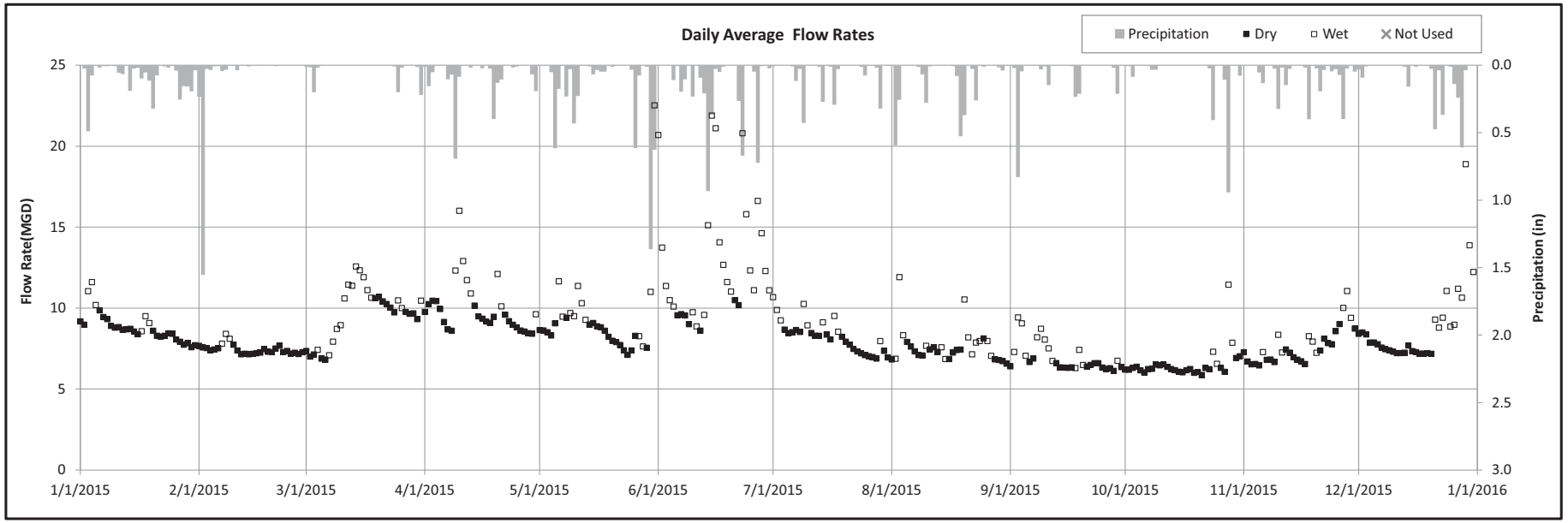
Rouge Valley Sewage Disposal System

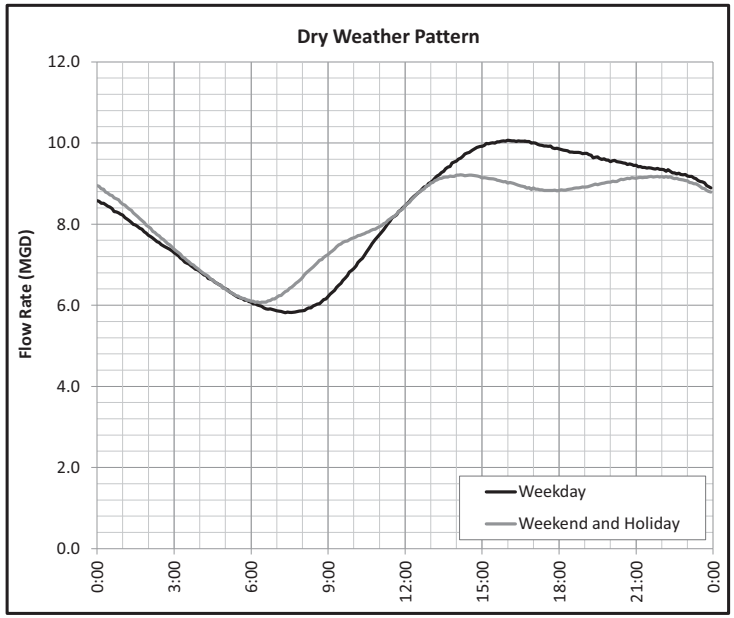
Annual Meter Report

Meter: P-11
Interceptor Manhole ID: MR II-18

Location: Hines Drive East of Inkster Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	8.8	273.4	8.5	264.7	25	6
Feb-15	7.4	208.3	7.4	206.1	25	3
Mar-15	9.6	298.2	9.0	279.6	15	16
Apr-15	10.0	300.3	9.3	279.0	22	8
May-15	9.3	287.1	8.3	257.9	20	11
Jun-15	12.8	383.7	9.6	287.1	7	23
Jul-15	8.3	256.7	7.8	243.0	22	9
Aug-15	7.6	236.2	7.2	224.1	18	13
Sep-15	6.9	208.2	6.4	192.9	17	13
Oct-15	6.5	202.4	6.3	194.4	27	4
Nov-15	7.7	229.8	7.3	218.4	21	9
Dec-15	8.9	274.7	7.6	234.7	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	20.92	4/10/15 0:45	3.03	4/9/15 23:40
2	1.81	5/5/2015	5/11/2015	15.15	5/6/15 2:15	4.74	5/5/15 10:20
3	2.49	5/30/2015	5/31/2015	23.56	5/31/15 16:55	7.61	5/31/15 16:40
4	1.96	6/12/2015	6/18/2015	25.24	6/15/15 17:35	4.91	6/15/15 19:20
5	1.10	6/22/2015	6/23/2015	23.28	6/23/15 4:20	3.47	6/23/15 4:40
6	1.06	8/2/2015	8/3/2015	18.05	8/3/15 2:15	2.73	8/3/15 2:35
7	1.00	8/19/2015	8/20/2015	12.85	8/20/15 1:35	2.21	8/20/15 2:00
8	1.24	10/27/2015	10/29/2015	15.44	10/28/15 10:55	2.44	10/28/15 11:15
9	1.22	12/26/2015	12/29/2015	21.45	12/29/15 1:40	3.22	12/29/15 1:45

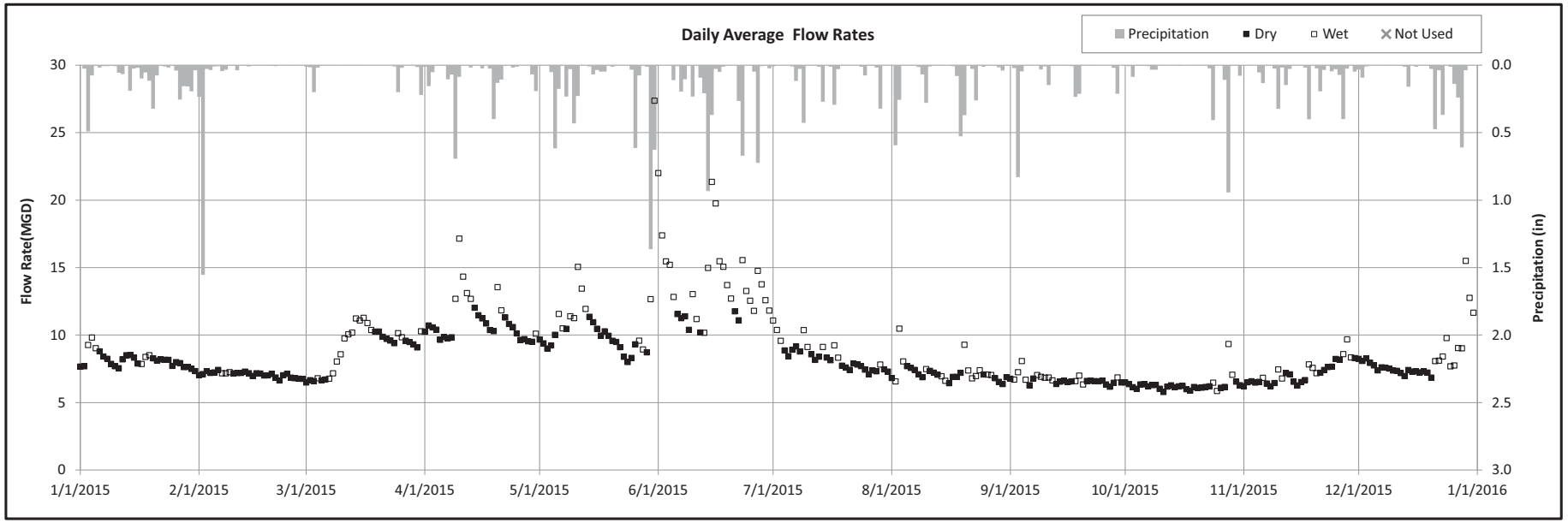
Rouge Valley Sewage Disposal System

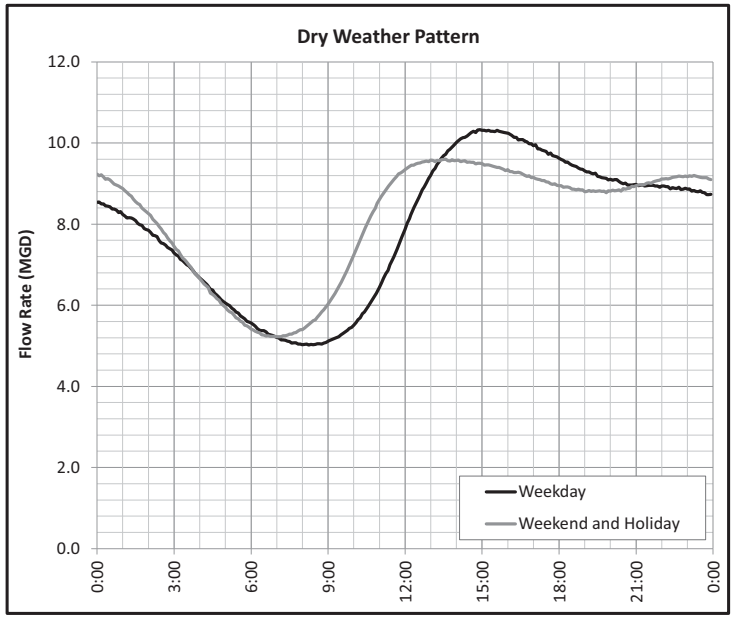
Annual Meter Report

Meter: P-12
Interceptor Manhole ID: RVI 12-01

Location: Inkster Road North of Hines Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	8.2	253.0	8.0	248.0	25	6
Feb-15	7.1	198.2	7.1	197.7	25	3
Mar-15	9.1	282.1	8.6	267.8	15	16
Apr-15	11.1	333.9	10.4	311.7	22	8
May-15	10.8	335.4	9.6	297.0	20	11
Jun-15	13.8	414.0	11.1	332.7	7	23
Jul-15	8.4	261.0	8.0	248.0	22	9
Aug-15	7.2	224.4	7.0	217.3	18	13
Sep-15	6.7	200.7	6.5	195.9	17	13
Oct-15	6.3	195.9	6.2	191.9	27	4
Nov-15	7.2	216.6	7.0	209.1	21	9
Dec-15	8.3	257.6	7.5	232.5	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	24.54	4/9/15 23:10	2.96	4/9/15 23:35
2	1.81	5/5/2015	5/11/2015	16.64	5/11/15 1:25	2.32	5/11/15 19:55
3	2.49	5/30/2015	5/31/2015	28.86	5/31/15 16:55	8.86	5/31/15 15:20
4	1.96	6/12/2015	6/18/2015	27.13	6/15/15 18:05	5.37	6/15/15 19:10
5	1.10	6/22/2015	6/23/2015	20.17	6/23/15 5:00	3.03	6/23/15 5:05
6	1.06	8/2/2015	8/3/2015	14.85	8/3/15 2:55	2.37	8/3/15 3:00
7	1.00	8/19/2015	8/20/2015	10.31	8/20/15 12:50	2.04	8/20/15 13:15
8	1.24	10/27/2015	10/29/2015	13.39	10/28/15 10:25	2.25	10/28/15 11:15
9	1.22	12/26/2015	12/29/2015	16.40	12/29/15 2:55	2.55	12/29/15 2:55

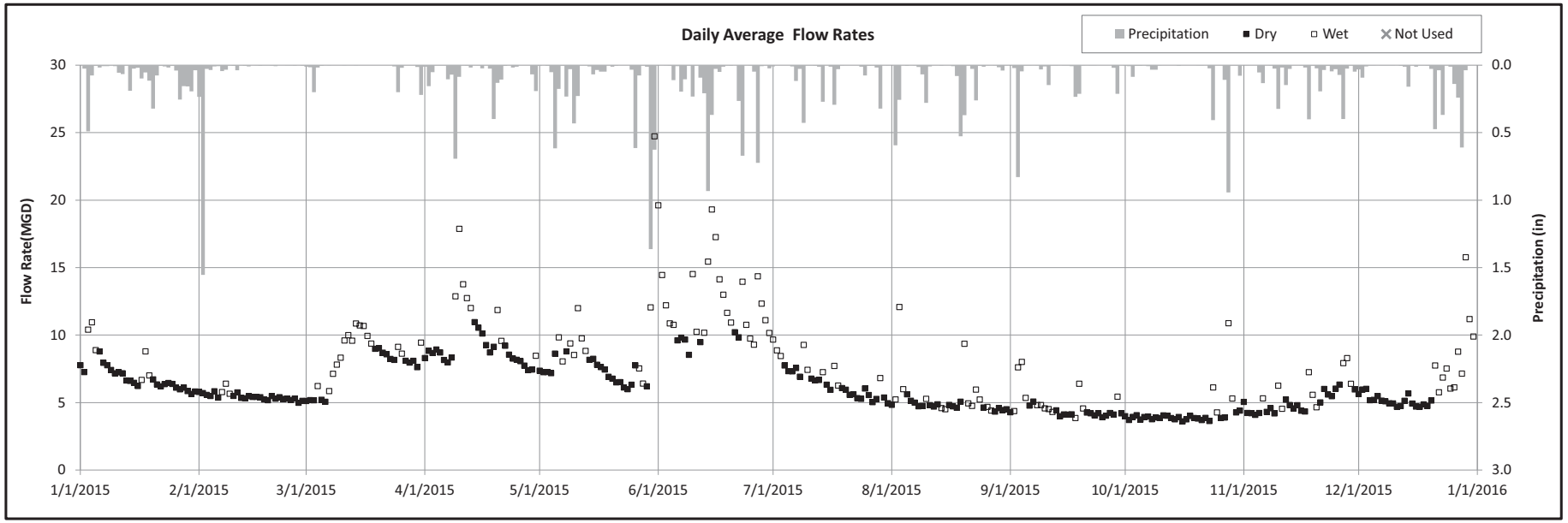
Rouge Valley Sewage Disposal System

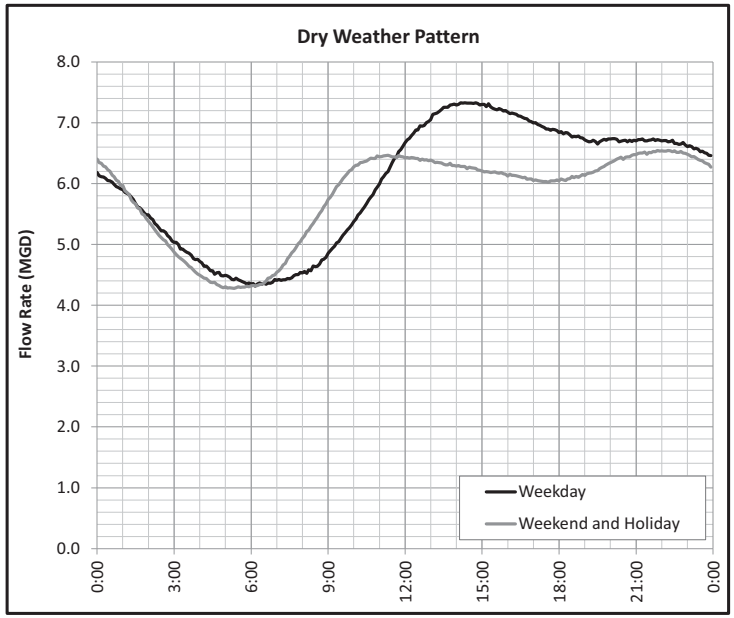
Annual Meter Report

Meter: P-13
Interceptor Manhole ID: MR IV -07

Location: Telegraph Road North of Joy Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	7.1	221.0	6.7	208.9	25	6
Feb-15	5.5	152.9	5.4	151.2	25	3
Mar-15	8.1	252.3	7.3	225.7	15	16
Apr-15	9.7	290.7	8.7	261.0	22	8
May-15	8.5	262.0	7.2	224.4	20	11
Jun-15	12.1	363.3	9.6	287.7	7	23
Jul-15	6.7	207.1	6.2	190.7	22	9
Aug-15	5.3	163.1	4.8	148.5	18	13
Sep-15	4.7	140.7	4.2	127.2	17	13
Oct-15	4.3	131.8	3.9	120.6	27	4
Nov-15	5.3	159.6	4.9	147.9	21	9
Dec-15	6.3	195.6	5.2	159.7	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	24.11	4/9/15 22:10	3.30	4/9/15 22:25
2	1.81	5/5/2015	5/11/2015	16.84	5/11/15 1:25	2.53	5/11/15 2:00
3	2.49	5/30/2015	5/31/2015	26.28	5/31/15 10:40	8.63	5/31/15 15:20
4	1.96	6/12/2015	6/18/2015	24.39	6/14/15 16:40	4.93	6/15/15 19:30
5	1.10	6/22/2015	6/23/2015	21.92	6/23/15 3:10	3.35	6/23/15 4:00
6	1.06	8/2/2015	8/3/2015	22.95	8/3/15 1:15	3.26	8/3/15 1:45
7	1.00	8/19/2015	8/20/2015	18.53	8/20/15 2:35	2.75	8/20/15 3:00
8	1.24	10/27/2015	10/29/2015	18.99	10/28/15 7:05	2.86	10/28/15 7:30
9	1.22	12/26/2015	12/29/2015	20.67	12/29/15 1:45	3.07	12/29/15 2:25

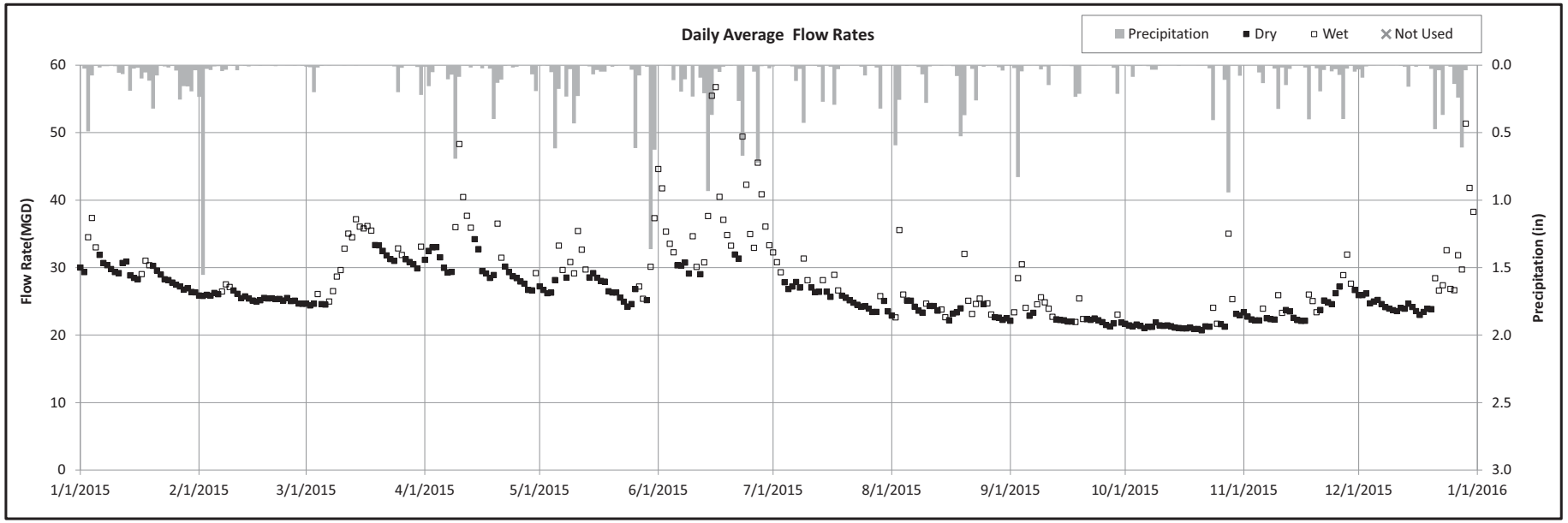
Rouge Valley Sewage Disposal System

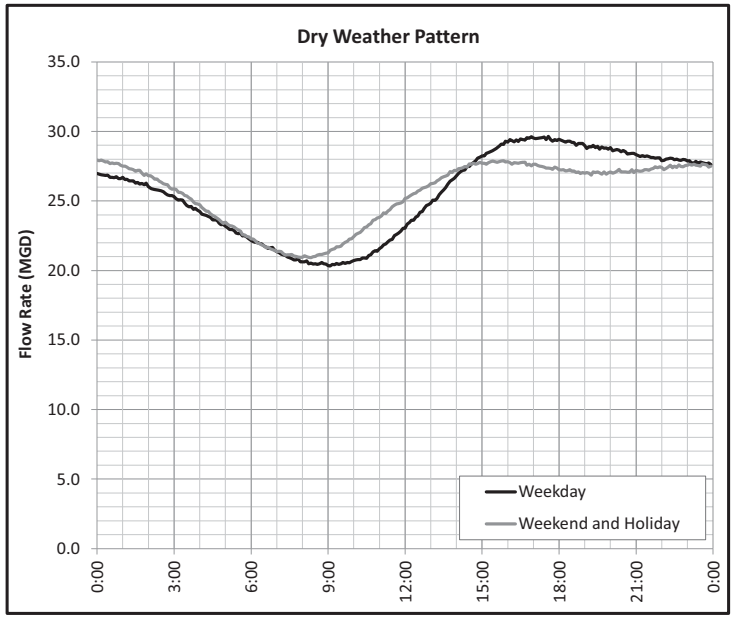
Annual Meter Report

Meter: P-14
Interceptor Manhole ID: RVI 4-16A

Location: Brady Road near Willoway Road
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	29.6	917.0	28.9	895.0	25	6
Feb-15	25.7	718.8	25.5	714.0	25	3
Mar-15	30.8	955.1	29.2	906.1	15	16
Apr-15	31.8	953.7	29.9	897.6	22	8
May-15	28.3	876.4	26.8	830.5	20	11
Jun-15	36.9	1106.7	30.4	912.0	7	23
Jul-15	26.6	823.7	25.6	792.4	22	9
Aug-15	24.4	757.0	23.5	729.7	18	13
Sep-15	23.3	697.5	22.2	664.8	17	13
Oct-15	22.1	683.6	21.4	663.1	27	4
Nov-15	24.4	730.5	23.6	706.5	21	9
Dec-15	27.4	848.8	24.4	755.2	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	55.95	4/10/15 2:30	7.33	4/9/15 22:35
2	1.81	5/5/2015	5/11/2015	40.34	5/11/15 19:55	3.41	5/11/15 19:50
3	2.49	5/30/2015	5/31/2015	49.76	5/30/15 19:20	13.00	5/31/15 15:05
4	1.96	6/12/2015	6/18/2015	65.86	6/16/15 1:05	8.23	6/14/15 22:45
5	1.10	6/22/2015	6/23/2015	58.70	6/23/15 8:55	8.06	6/23/15 4:55
6	1.06	8/2/2015	8/3/2015	49.60	8/3/15 3:45	6.46	8/3/15 3:25
7	1.00	8/19/2015	8/20/2015	42.36	8/20/15 6:15	6.08	8/20/15 4:40
8	1.24	10/27/2015	10/29/2015	45.89	10/28/15 11:30	3.62	10/28/15 11:10
9	1.22	12/26/2015	12/29/2015	53.73	12/29/15 11:50	8.62	12/29/15 2:50

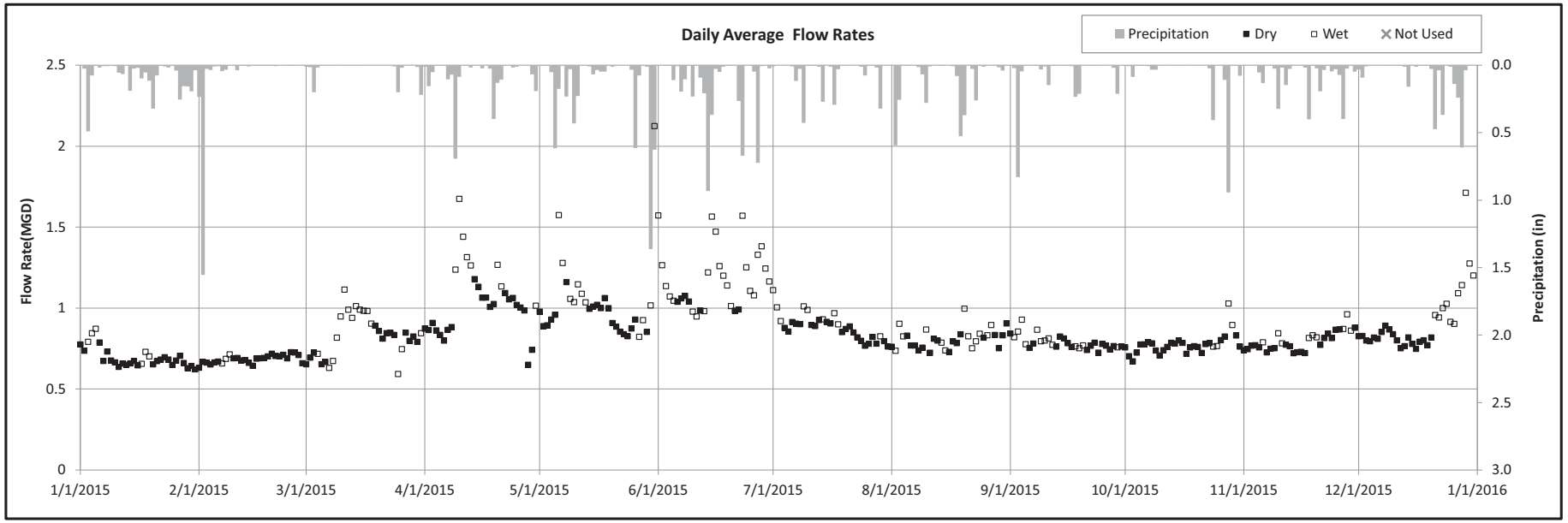
Rouge Valley Sewage Disposal System

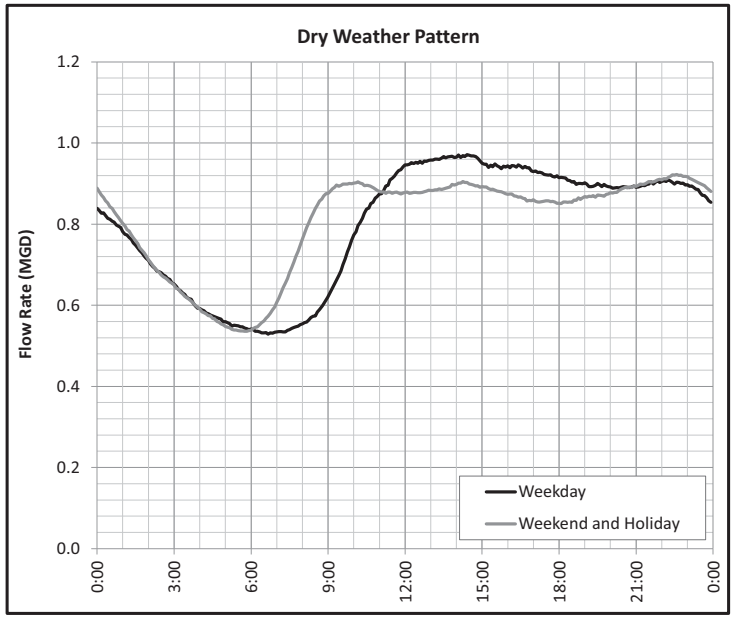
Annual Meter Report

Meter: P-15
Interceptor Manhole ID: WRVI - 54

Location: Ecorse Road and Hannan Road
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.7	21.4	0.7	21.1	25	6
Feb-15	0.7	19.0	0.7	19.0	25	3
Mar-15	0.8	25.7	0.8	24.2	15	16
Apr-15	1.0	31.2	1.0	28.5	22	8
May-15	1.0	31.9	0.9	29.1	20	11
Jun-15	1.2	35.1	1.0	30.6	7	23
Jul-15	0.9	27.3	0.9	26.4	22	9
Aug-15	0.8	25.1	0.8	24.5	18	13
Sep-15	0.8	23.7	0.8	23.1	17	13
Oct-15	0.8	24.2	0.8	23.6	27	4
Nov-15	0.8	24.0	0.8	23.4	21	9
Dec-15	0.9	28.2	0.8	25.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	2.39	4/9/15 21:30	1.24	4/9/15 21:55
2	1.81	5/5/2015	5/11/2015	1.84	5/6/15 7:50	1.07	5/6/15 8:15
3	2.49	5/30/2015	5/31/2015	2.70	5/31/15 10:20	1.35	5/31/15 10:55
4	1.96	6/12/2015	6/18/2015	1.88	6/15/15 21:20	1.08	6/15/15 21:45
5	1.10	6/22/2015	6/23/2015	2.07	6/23/15 3:00	1.17	6/23/15 3:30
6	1.06	8/2/2015	8/3/2015	1.08	8/3/15 14:45	0.83	8/3/15 11:25
7	1.00	8/19/2015	8/20/2015	1.12	8/20/15 6:55	0.85	8/20/15 7:20
8	1.24	10/27/2015	10/29/2015	1.31	10/28/15 8:35	0.90	10/28/15 9:10
9	1.22	12/26/2015	12/29/2015	2.05	12/29/15 1:05	1.12	12/29/15 1:30

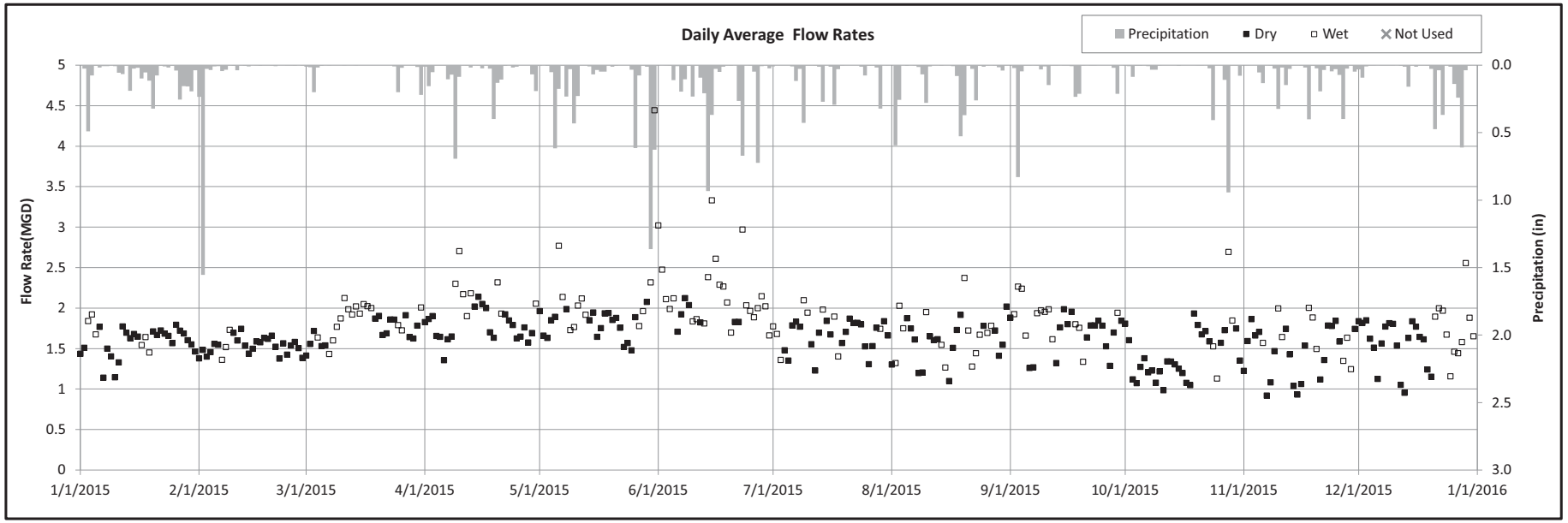
Rouge Valley Sewage Disposal System

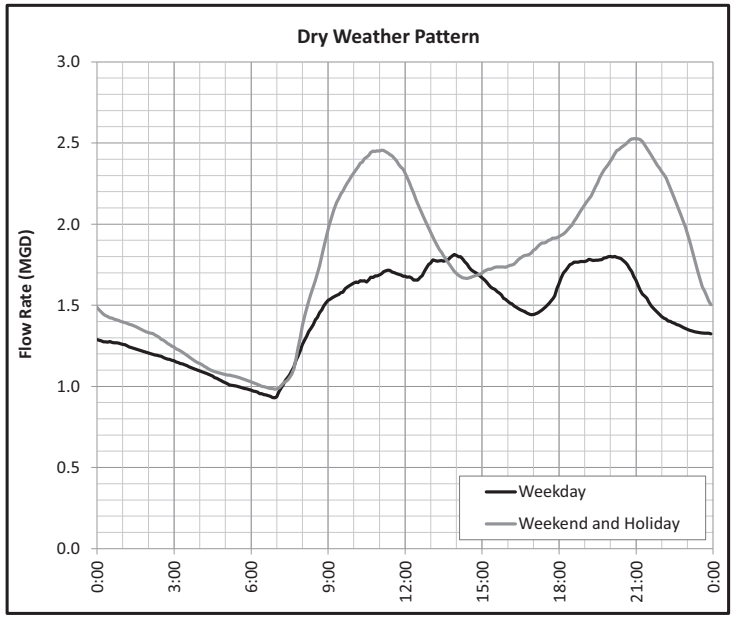
Annual Meter Report

Meter: P-17
Interceptor Manhole ID: LRIR 9-17

Location: North of Michigan Avenue along Railroad
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.6	49.6	1.6	49.0	25	6
Feb-15	1.5	42.8	1.5	42.8	25	3
Mar-15	1.8	55.5	1.7	52.7	15	16
Apr-15	1.9	56.4	1.8	53.1	22	8
May-15	2.0	61.1	1.8	55.8	20	11
Jun-15	2.1	63.9	1.9	57.0	7	23
Jul-15	1.7	52.4	1.7	51.5	22	9
Aug-15	1.6	50.5	1.6	49.3	18	13
Sep-15	1.8	52.8	1.7	50.1	17	13
Oct-15	1.5	45.0	1.4	43.1	27	4
Nov-15	1.5	45.3	1.5	43.5	21	9
Dec-15	1.6	50.5	1.6	48.4	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	4.40	4/9/15 19:30	2.23	4/9/15 15:40
2	1.81	5/5/2015	5/11/2015	4.35	5/6/15 10:15	1.08	5/6/15 10:40
3	2.49	5/30/2015	5/31/2015	6.68	5/31/15 12:35	1.46	5/31/15 12:55
4	1.96	6/12/2015	6/18/2015	5.02	6/14/15 19:35	1.23	6/14/15 20:15
5	1.10	6/22/2015	6/23/2015	3.50	6/23/15 1:25	0.98	6/23/15 1:50
6	1.06	8/2/2015	8/3/2015	2.39	8/3/15 1:15	0.87	8/3/15 9:20
7	1.00	8/19/2015	8/20/2015	3.49	8/20/15 8:55	0.96	8/20/15 9:15
8	1.24	10/27/2015	10/29/2015	4.58	10/28/15 9:45	1.08	10/28/15 10:20
9	1.22	12/26/2015	12/29/2015	2.74	12/29/15 0:20	0.87	12/29/15 0:45

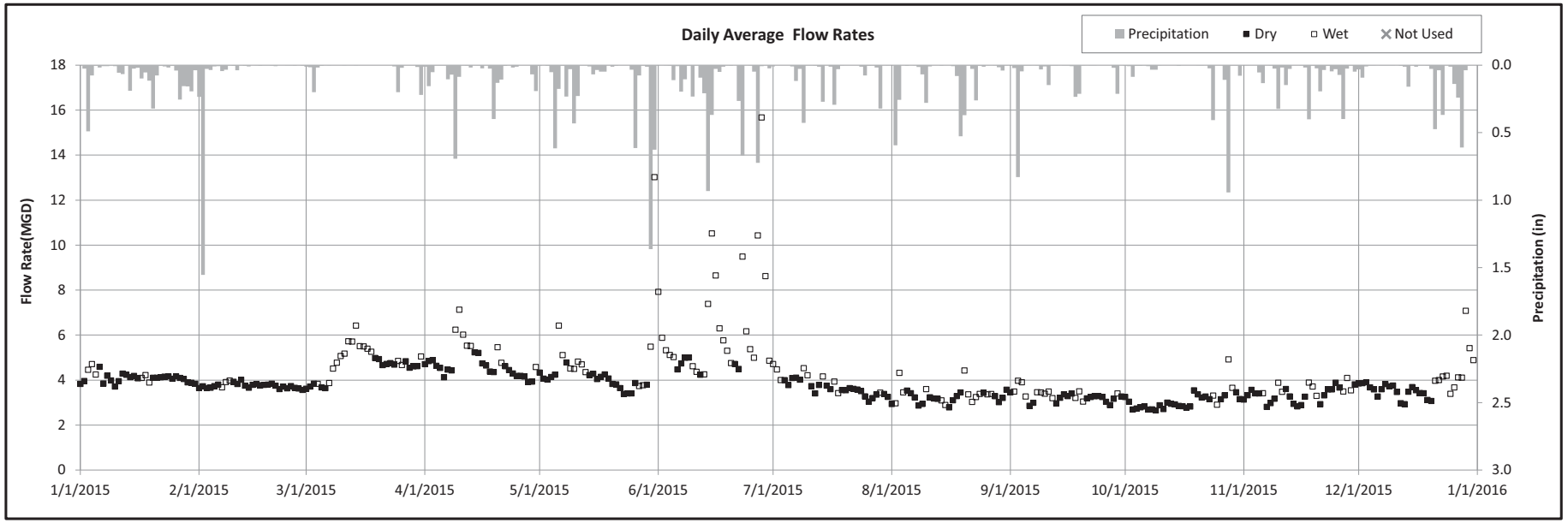
Rouge Valley Sewage Disposal System

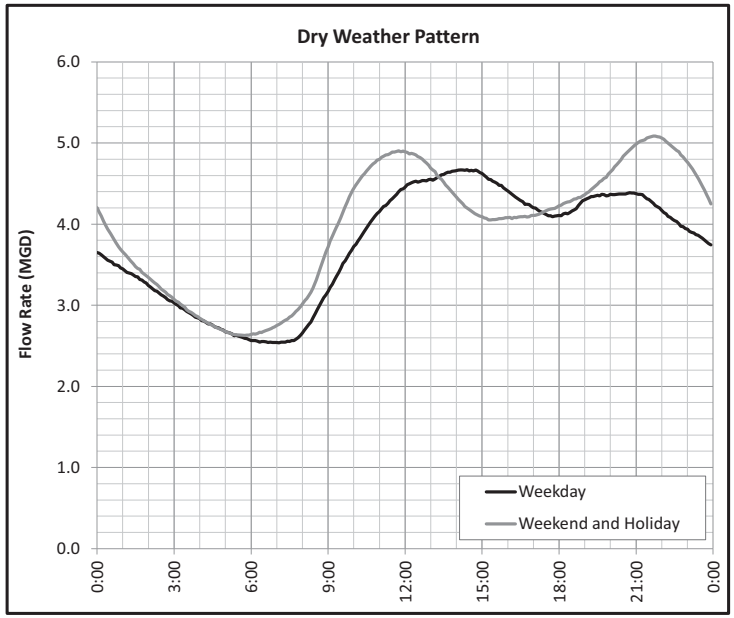
Annual Meter Report

Meter: P-19
Interceptor Manhole ID: RVI 15-17

Location: Josephine Street and Lower Rouge River
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	4.1	127.1	4.1	125.9	25	6
Feb-15	3.8	105.0	3.7	104.7	25	3
Mar-15	4.8	147.3	4.4	136.1	15	16
Apr-15	4.8	144.3	4.5	135.0	22	8
May-15	4.5	140.1	4.0	123.7	20	11
Jun-15	6.3	189.6	4.7	140.1	7	23
Jul-15	3.8	116.3	3.6	111.6	22	9
Aug-15	3.3	102.3	3.2	99.2	18	13
Sep-15	3.3	99.0	3.2	95.7	17	13
Oct-15	3.1	95.5	3.0	92.7	27	4
Nov-15	3.4	102.3	3.3	99.0	21	9
Dec-15	3.8	119.0	3.5	108.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	13.68	4/9/15 20:20	2.28	4/9/15 20:35
2	1.81	5/5/2015	5/11/2015	7.89	5/6/15 10:50	1.67	5/6/15 11:15
3	2.49	5/30/2015	5/31/2015	17.33	5/31/15 12:45	2.77	5/31/15 13:05
4	1.96	6/12/2015	6/18/2015	16.57	6/14/15 20:00	2.66	6/14/15 20:25
5	1.10	6/22/2015	6/23/2015	14.33	6/23/15 2:30	2.38	6/23/15 2:50
6	1.06	8/2/2015	8/3/2015	5.88	8/3/15 1:35	1.42	8/3/15 2:00
7	1.00	8/19/2015	8/20/2015	5.52	8/20/15 10:05	1.36	8/20/15 10:30
8	1.24	10/27/2015	10/29/2015	7.51	10/28/15 10:00	1.62	10/28/15 10:30
9	1.22	12/26/2015	12/29/2015	8.58	12/29/15 0:30	1.76	12/29/15 1:00

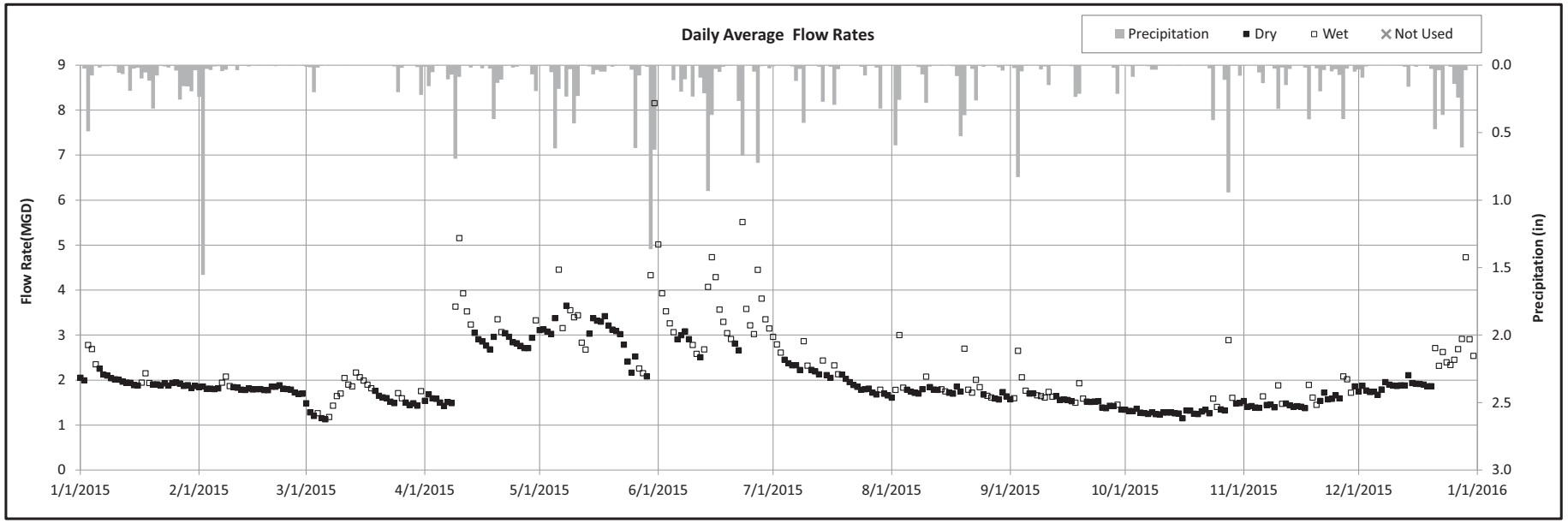
Rouge Valley Sewage Disposal System

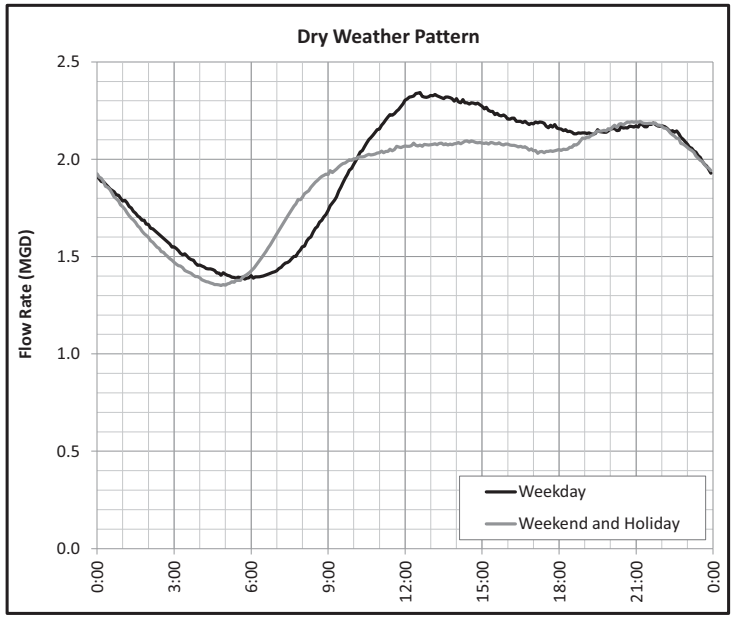
Annual Meter Report

Meter: P-20
Interceptor Manhole ID: WI E-35

Location: Michigan Avenue and Henry Ruff Road
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	2.0	62.9	2.0	60.8	25	6
Feb-15	1.8	51.0	1.8	50.4	25	3
Mar-15	1.6	49.9	1.5	45.0	15	16
Apr-15	2.7	81.6	2.4	71.4	22	8
May-15	3.3	100.8	3.0	93.3	20	11
Jun-15	3.4	102.6	2.8	85.2	7	23
Jul-15	2.2	66.7	2.0	62.6	22	9
Aug-15	1.8	56.4	1.7	53.3	18	13
Sep-15	1.6	48.6	1.5	45.6	17	13
Oct-15	1.4	42.5	1.3	40.3	27	4
Nov-15	1.6	47.4	1.5	45.0	21	9
Dec-15	2.2	67.9	1.9	57.7	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	9.17	4/9/15 20:05	3.06	4/9/15 20:45
2	1.81	5/5/2015	5/11/2015	7.92	5/6/15 1:20	2.55	5/6/15 1:30
3	2.49	5/30/2015	5/31/2015	9.38	5/31/15 8:30	2.90	5/31/15 9:20
4	1.96	6/12/2015	6/18/2015	8.21	6/14/15 20:25	2.58	6/14/15 20:55
5	1.10	6/22/2015	6/23/2015	9.44	6/23/15 1:50	3.06	6/23/15 2:15
6	1.06	8/2/2015	8/3/2015	7.60	8/3/15 0:10	2.45	8/3/15 0:35
7	1.00	8/19/2015	8/20/2015	6.44	8/20/15 0:55	2.21	8/20/15 1:30
8	1.24	10/27/2015	10/29/2015	5.06	10/28/15 5:30	1.87	10/28/15 5:55
9	1.22	12/26/2015	12/29/2015	8.34	12/29/15 1:15	2.74	12/29/15 0:40

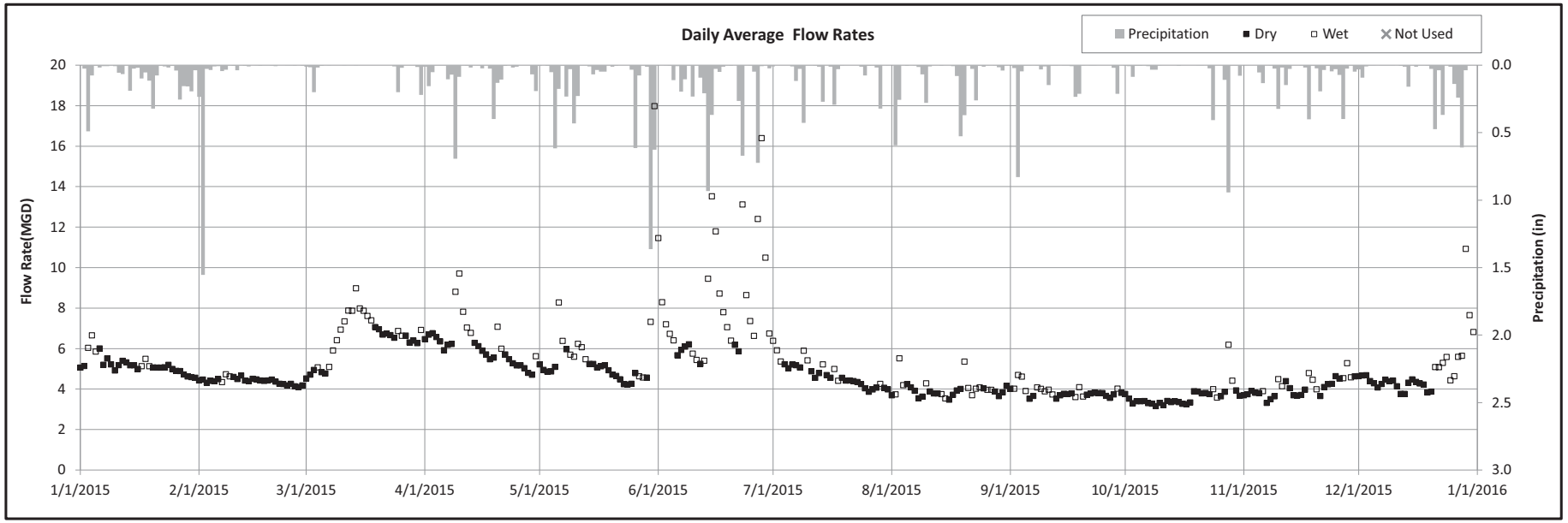
Rouge Valley Sewage Disposal System

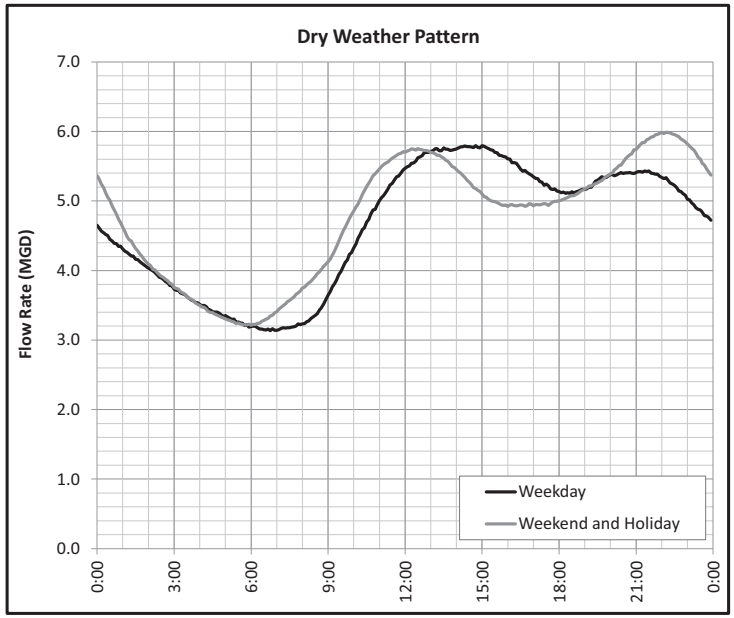
Annual Meter Report

Meter: P-21
Interceptor Manhole ID: RVI 14-19

Location: Merriman Road and Lower Rouge River
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	5.2	161.2	5.1	157.5	25	6
Feb-15	4.4	123.2	4.4	122.6	25	3
Mar-15	6.5	202.7	6.0	186.0	15	16
Apr-15	6.2	186.3	5.8	174.0	22	8
May-15	5.7	176.1	4.9	151.3	20	11
Jun-15	8.2	244.5	5.9	176.7	7	23
Jul-15	4.8	147.6	4.5	140.4	22	9
Aug-15	4.0	123.4	3.9	119.4	18	13
Sep-15	3.9	115.8	3.7	111.9	17	13
Oct-15	3.6	112.8	3.5	108.8	27	4
Nov-15	4.1	123.3	4.0	118.5	21	9
Dec-15	4.9	152.2	4.3	132.4	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	19.41	4/9/15 20:50	4.25	4/9/15 15:15
2	1.81	5/5/2015	5/11/2015	10.04	5/6/15 1:50	1.57	5/6/15 2:20
3	2.49	5/30/2015	5/31/2015	23.70	5/31/15 12:40	2.43	5/31/15 13:15
4	1.96	6/12/2015	6/18/2015	20.39	6/14/15 20:25	2.25	6/14/15 20:55
5	1.10	6/22/2015	6/23/2015	22.04	6/23/15 2:30	2.35	6/23/15 2:55
6	1.06	8/2/2015	8/3/2015	8.54	8/3/15 1:55	1.42	8/3/15 2:35
7	1.00	8/19/2015	8/20/2015	6.69	8/20/15 1:05	1.25	8/20/15 1:40
8	1.24	10/27/2015	10/29/2015	9.48	10/28/15 10:35	1.51	10/28/15 10:50
9	1.22	12/26/2015	12/29/2015	13.53	12/29/15 0:40	1.80	12/29/15 0:40

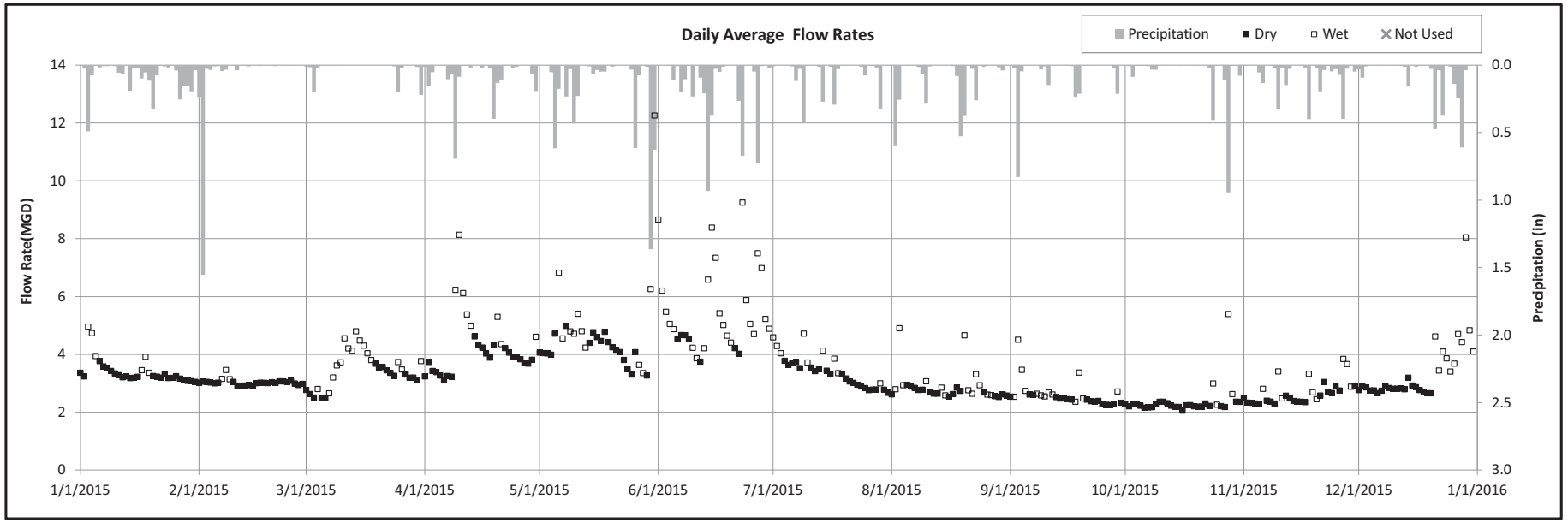
Rouge Valley Sewage Disposal System

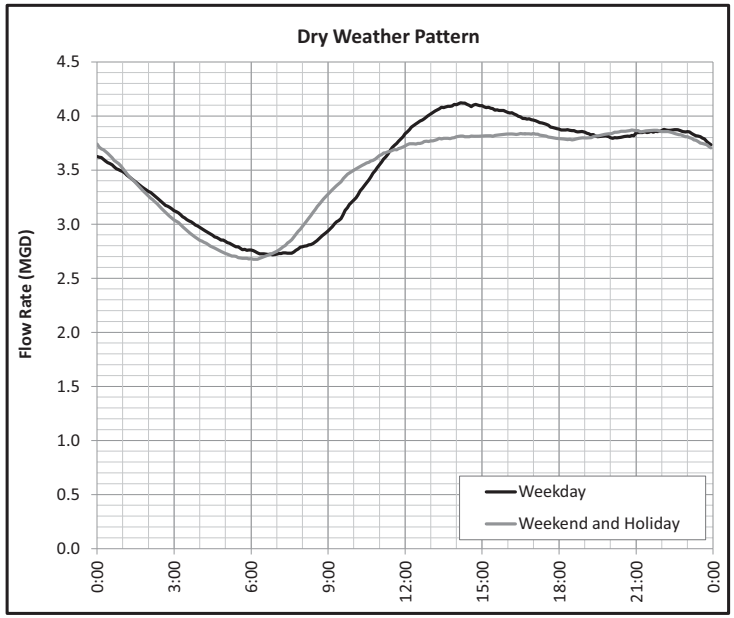
Annual Meter Report

Meter: P-24
Interceptor Manhole ID: WI E-08

Location: Michigan Avenue West of Beech Daly Road
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	3.4	106.0	3.3	101.4	25	6
Feb-15	3.0	84.8	3.0	84.0	25	3
Mar-15	3.5	107.9	3.1	96.1	15	16
Apr-15	4.3	128.4	3.8	113.4	22	8
May-15	4.7	144.5	4.2	129.6	20	11
Jun-15	5.5	164.1	4.3	130.2	7	23
Jul-15	3.4	106.3	3.2	99.5	22	9
Aug-15	2.9	89.3	2.7	83.4	18	13
Sep-15	2.6	78.3	2.4	72.6	17	13
Oct-15	2.4	73.8	2.2	69.4	27	4
Nov-15	2.7	80.4	2.5	75.6	21	9
Dec-15	3.4	105.4	2.8	87.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	12.51	4/9/15 21:55	1.65	4/9/15 22:05
2	1.81	5/5/2015	5/11/2015	10.65	5/6/15 1:30	1.48	5/6/15 2:00
3	2.49	5/30/2015	5/31/2015	14.00	5/31/15 9:00	6.43	5/31/15 14:50
4	1.96	6/12/2015	6/18/2015	13.50	6/14/15 21:55	1.91	6/14/15 22:30
5	1.10	6/22/2015	6/23/2015	13.30	6/23/15 3:25	1.82	6/23/15 3:35
6	1.06	8/2/2015	8/3/2015	10.67	8/3/15 1:40	1.53	8/3/15 2:25
7	1.00	8/19/2015	8/20/2015	9.48	8/20/15 2:25	1.41	8/20/15 2:50
8	1.24	10/27/2015	10/29/2015	8.64	10/28/15 7:05	1.32	10/28/15 7:50
9	1.22	12/26/2015	12/29/2015	11.33	12/29/15 0:30	1.55	12/29/15 0:55

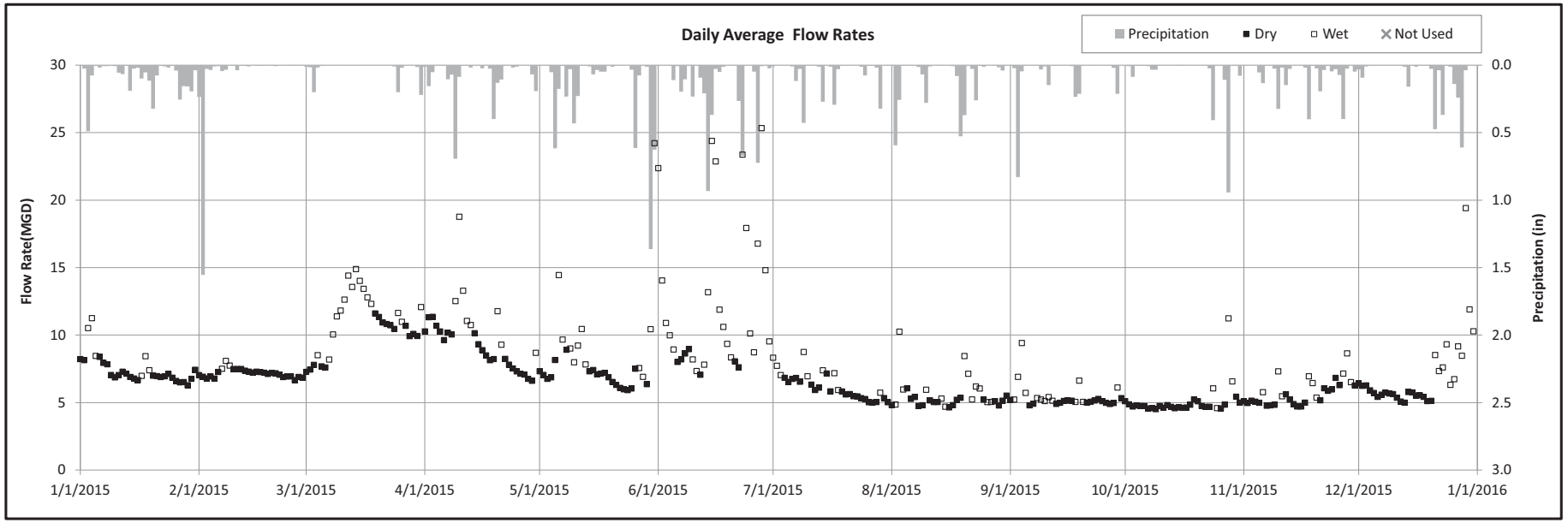
Rouge Valley Sewage Disposal System

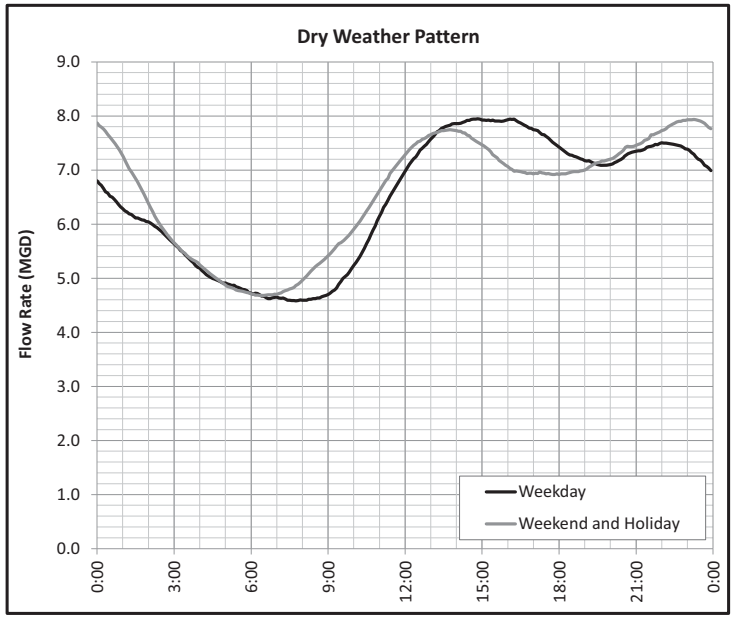
Annual Meter Report

Meter: P-25
Interceptor Manhole ID: RVI 5-14

Location: Lower Rouge River West of Beech Daly Road
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	7.5	231.3	7.1	220.7	25	6
Feb-15	7.2	200.8	7.1	198.8	25	3
Mar-15	10.9	337.0	9.6	298.2	15	16
Apr-15	9.7	291.6	8.9	266.4	22	8
May-15	8.3	256.7	6.9	215.1	20	11
Jun-15	12.4	373.2	8.1	242.4	7	23
Jul-15	6.3	193.8	5.9	181.7	22	9
Aug-15	5.6	172.4	5.1	158.7	18	13
Sep-15	5.4	162.3	5.1	151.8	17	13
Oct-15	5.1	157.5	4.8	148.2	27	4
Nov-15	5.7	171.9	5.4	160.5	21	9
Dec-15	7.0	217.3	5.6	173.9	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	25.99	4/9/15 21:45	4.68	4/9/15 10:15
2	1.81	5/5/2015	5/11/2015	21.39	5/6/15 5:35	1.93	5/6/15 5:35
3	2.49	5/30/2015	5/31/2015	27.26	5/31/15 9:45	5.81	5/31/15 15:35
4	1.96	6/12/2015	6/18/2015	31.66	6/16/15 7:10	2.74	6/16/15 7:10
5	1.10	6/22/2015	6/23/2015	26.94	6/23/15 3:20	2.69	6/23/15 9:10
6	1.06	8/2/2015	8/3/2015	14.90	8/3/15 11:15	1.30	8/3/15 11:35
7	1.00	8/19/2015	8/20/2015	14.58	8/20/15 7:10	1.26	8/20/15 7:25
8	1.24	10/27/2015	10/29/2015	21.07	10/28/15 13:15	2.12	10/28/15 13:45
9	1.22	12/26/2015	12/29/2015	24.88	12/29/15 11:00	2.31	12/29/15 11:20

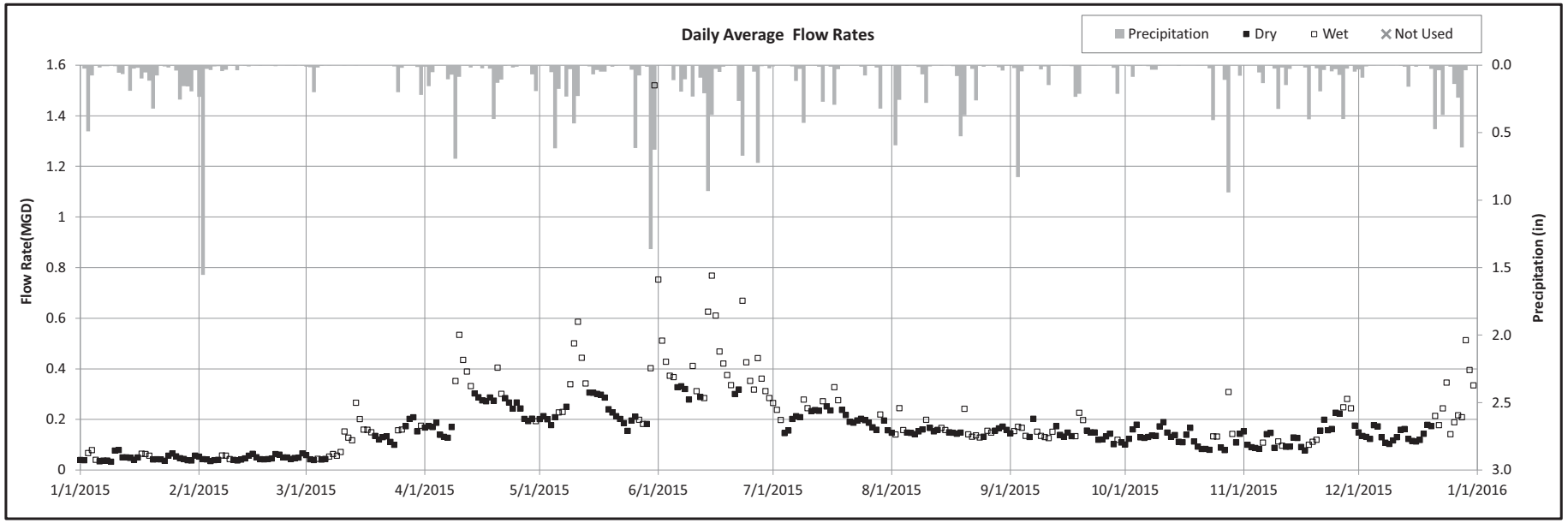
Rouge Valley Sewage Disposal System

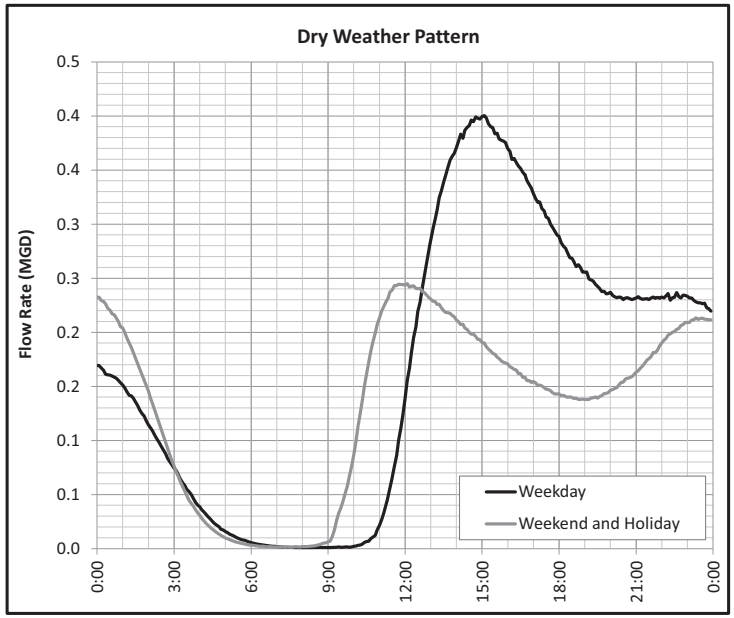
Annual Meter Report

Meter: P-26
Interceptor Manhole ID: PWI 2-05

Location: Plymouth Road East of I-275
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.1	1.6	0.1	1.6	25	6
Feb-15	0.1	1.4	0.1	1.4	25	3
Mar-15	0.1	3.7	0.1	3.4	15	16
Apr-15	0.3	7.8	0.2	6.6	22	8
May-15	0.3	9.6	0.2	7.1	20	11
Jun-15	0.4	12.3	0.3	9.3	7	23
Jul-15	0.2	6.8	0.2	6.2	22	9
Aug-15	0.2	5.0	0.2	4.7	18	13
Sep-15	0.2	4.5	0.1	4.2	17	13
Oct-15	0.1	4.0	0.1	4.0	27	4
Nov-15	0.1	4.2	0.1	3.9	21	9
Dec-15	0.2	5.9	0.1	4.3	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	1.28	4/9/15 23:25	0.49	4/10/15 0:15
2	1.81	5/5/2015	5/11/2015	1.17	5/10/15 19:35	0.48	5/10/15 20:00
3	2.49	5/30/2015	5/31/2015	2.16	5/31/15 13:55	0.67	5/31/15 14:15
4	1.96	6/12/2015	6/18/2015	1.44	6/14/15 17:30	0.55	6/14/15 18:00
5	1.10	6/22/2015	6/23/2015	0.93	6/23/15 4:50	0.44	6/23/15 5:30
6	1.06	8/2/2015	8/3/2015	0.47	8/3/15 1:05	0.34	8/3/15 0:35
7	1.00	8/19/2015	8/20/2015	0.42	8/20/15 12:00	0.36	8/20/15 1:30
8	1.24	10/27/2015	10/29/2015	0.75	10/28/15 10:10	0.37	10/28/15 10:45
9	1.22	12/26/2015	12/29/2015	0.71	12/29/15 11:55	0.33	12/26/15 15:45

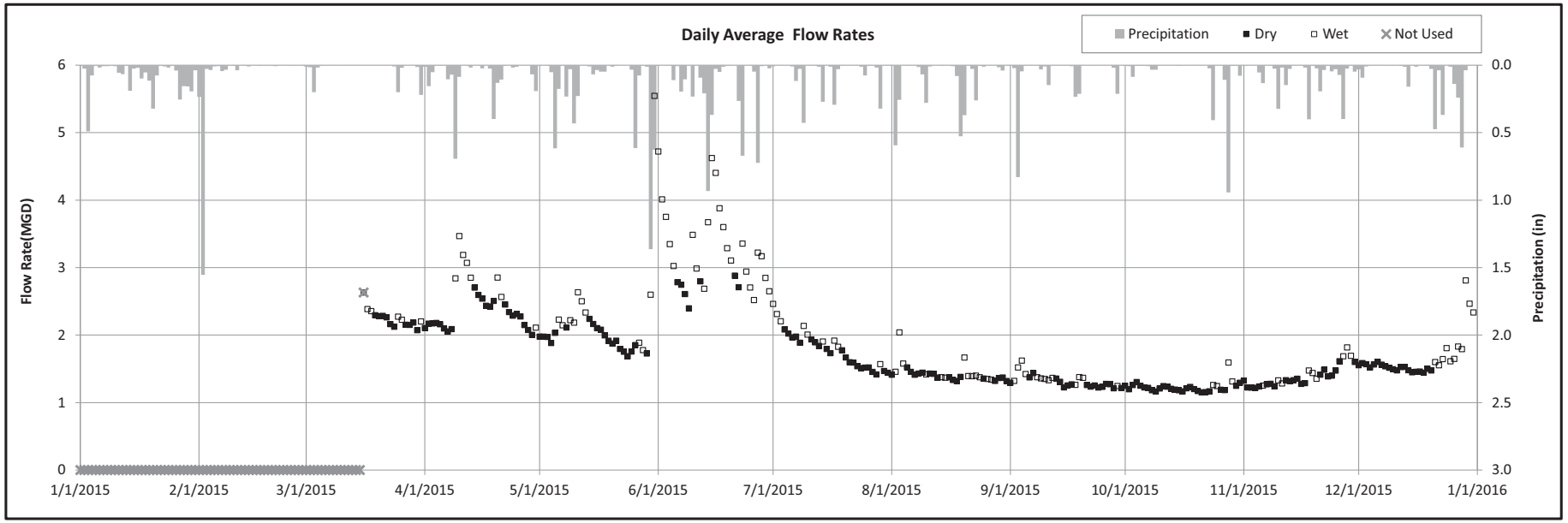
Rouge Valley Sewage Disposal System

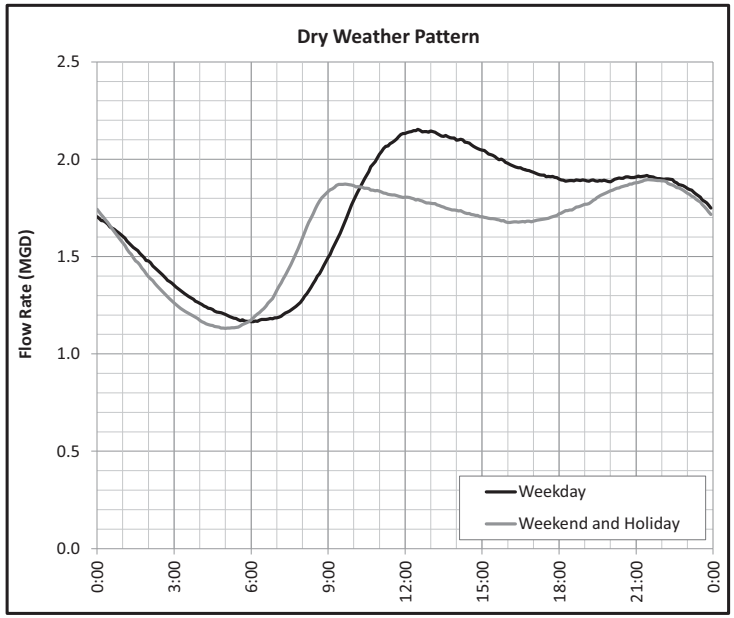
Annual Meter Report

Meter: P-28
Interceptor Manhole ID:

Location: Inkster Road south of Rougeway Street
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	2.2	69.4	2.2	68.2	10	6
Apr-15	2.4	73.2	2.3	68.4	22	8
May-15	2.2	67.0	1.9	60.1	20	11
Jun-15	3.2	96.9	2.7	81.0	7	23
Jul-15	1.8	56.1	1.7	53.0	22	9
Aug-15	1.4	44.3	1.4	43.1	18	13
Sep-15	1.3	39.6	1.3	38.4	17	13
Oct-15	1.2	38.1	1.2	37.5	27	4
Nov-15	1.4	41.7	1.4	40.5	21	9
Dec-15	1.7	51.5	1.5	46.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	6.07	4/9/15 20:35	2.25	4/9/15 21:50
2	1.81	5/5/2015	5/11/2015	3.05	5/8/15 21:30	1.57	5/10/15 18:50
3	2.49	5/30/2015	5/31/2015	6.17	5/31/15 15:40	7.16	5/31/15 16:55
4	1.96	6/12/2015	6/18/2015	6.17	6/14/15 14:55	3.26	6/15/15 20:10
5	1.10	6/22/2015	6/23/2015	4.75	6/23/15 2:10	1.68	6/23/15 3:55
6	1.06	8/2/2015	8/3/2015	3.09	8/3/15 0:10	1.17	8/3/15 2:10
7	1.00	8/19/2015	8/20/2015	2.01	8/20/15 1:30	1.01	8/20/15 11:10
8	1.24	10/27/2015	10/29/2015	2.21	10/28/15 8:30	1.14	10/28/15 9:00
9	1.22	12/26/2015	12/29/2015	3.18	12/29/15 11:55	1.37	12/29/15 11:55

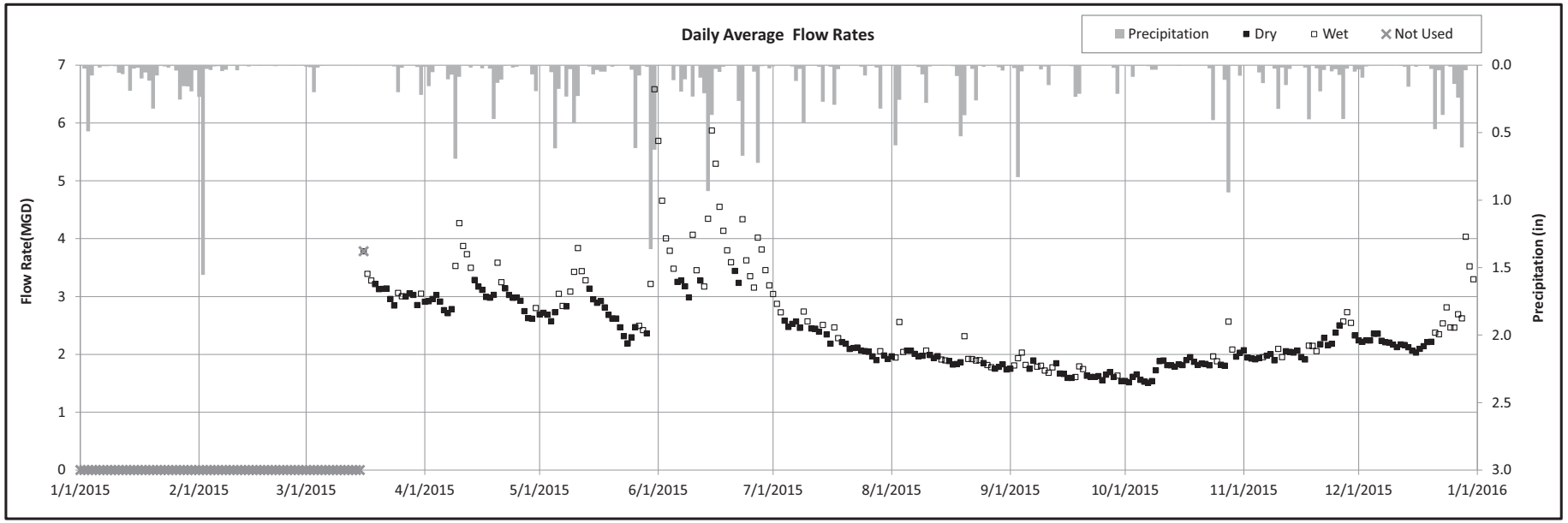
Rouge Valley Sewage Disposal System

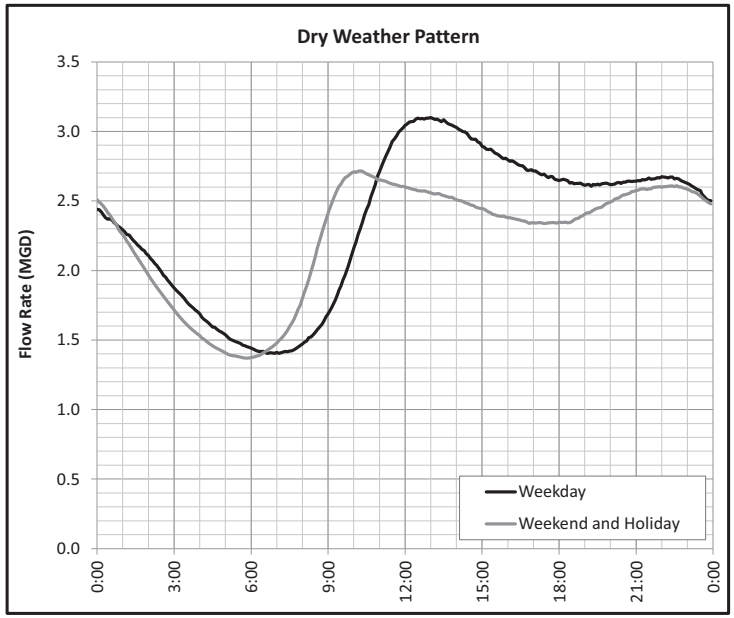
Annual Meter Report

Meter: P-29
Interceptor Manhole ID:

Location: Along Rouge River, Inkster Road south of Rougeway Street
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	3.1	95.8	3.0	94.2	10	6
Apr-15	3.1	93.0	2.9	88.2	22	8
May-15	2.9	90.5	2.7	82.2	20	11
Jun-15	3.9	115.5	3.2	97.2	7	23
Jul-15	2.3	72.2	2.2	69.1	22	9
Aug-15	1.9	60.1	1.9	59.2	18	13
Sep-15	1.7	51.3	1.7	49.8	17	13
Oct-15	1.8	56.1	1.8	54.9	27	4
Nov-15	2.1	63.9	2.1	62.4	21	9
Dec-15	2.4	75.0	2.2	67.9	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	6.61	4/9/15 21:45	2.38	4/9/15 22:05
2	1.81	5/5/2015	5/11/2015	6.29	5/10/15 17:55	1.84	5/10/15 18:45
3	2.49	5/30/2015	5/31/2015	8.96	5/31/15 9:55	3.82	5/31/15 11:45
4	1.96	6/12/2015	6/18/2015	7.43	6/15/15 20:55	3.43	6/15/15 20:05
5	1.10	6/22/2015	6/23/2015	5.42	6/23/15 3:25	1.93	6/23/15 3:50
6	1.06	8/2/2015	8/3/2015	3.40	8/3/15 1:50	1.40	8/3/15 2:10
7	1.00	8/19/2015	8/20/2015	2.69	8/20/15 9:45	1.24	8/20/15 11:05
8	1.24	10/27/2015	10/29/2015	3.64	10/28/15 8:30	1.40	10/28/15 9:00
9	1.22	12/26/2015	12/29/2015	4.57	12/29/15 11:55	1.56	12/29/15 11:55

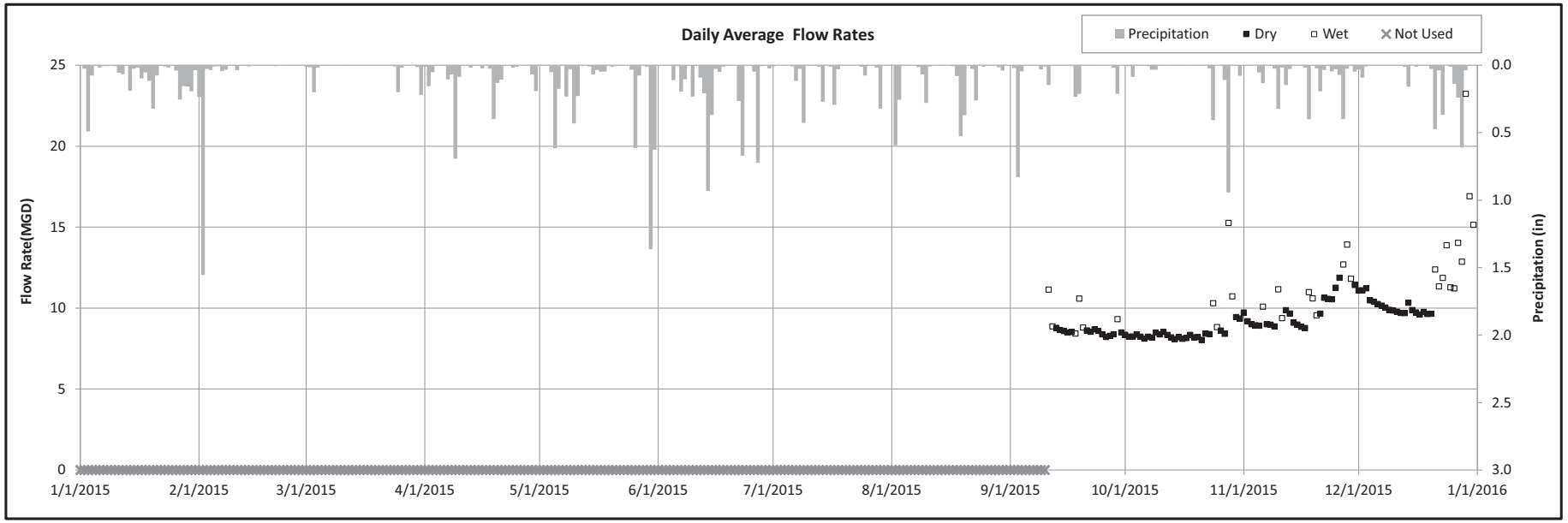
Rouge Valley Sewage Disposal System

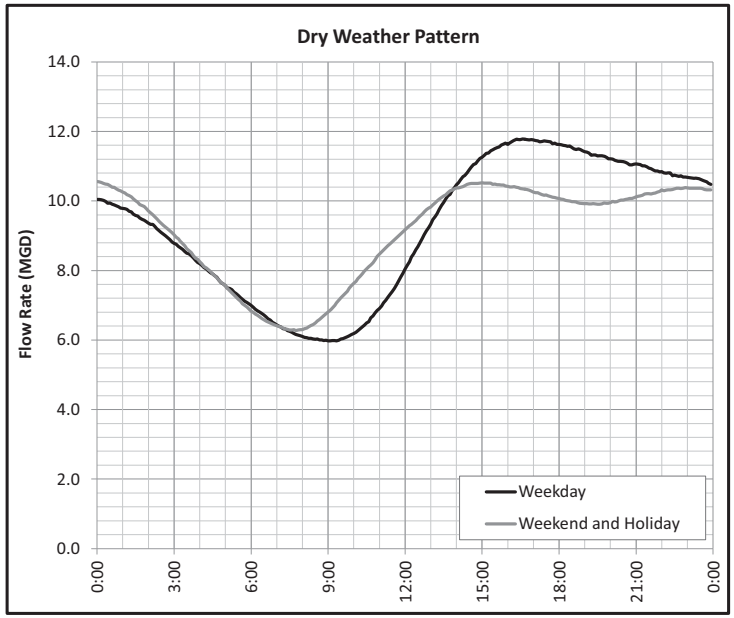
Annual Meter Report

Meter: P-30
Interceptor Manhole ID: MR 1-11

Location: Hines Drive and Outer Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	-	-	-	-	-	-
May-15	-	-	-	-	-	-
Jun-15	-	-	-	-	-	-
Jul-15	-	-	-	-	-	-
Aug-15	-	-	-	-	-	-
Sep-15	8.8	262.8	8.5	255.6	14	6
Oct-15	8.7	270.9	8.4	259.5	27	4
Nov-15	10.1	303.9	9.7	291.3	21	9
Dec-15	11.5	356.5	10.1	313.4	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	-	-	-	-
3	2.49	5/30/2015	5/31/2015	-	-	-	-
4	1.96	6/12/2015	6/18/2015	-	-	-	-
5	1.10	6/22/2015	6/23/2015	-	-	-	-
6	1.06	8/2/2015	8/3/2015	-	-	-	-
7	1.00	8/19/2015	8/20/2015	-	-	-	-
8	1.24	10/27/2015	10/29/2015	19.91	10/28/15 10:30	2.87	10/28/15 11:05
9	1.22	12/26/2015	12/29/2015	28.24	12/29/15 2:15	3.70	12/29/15 3:10

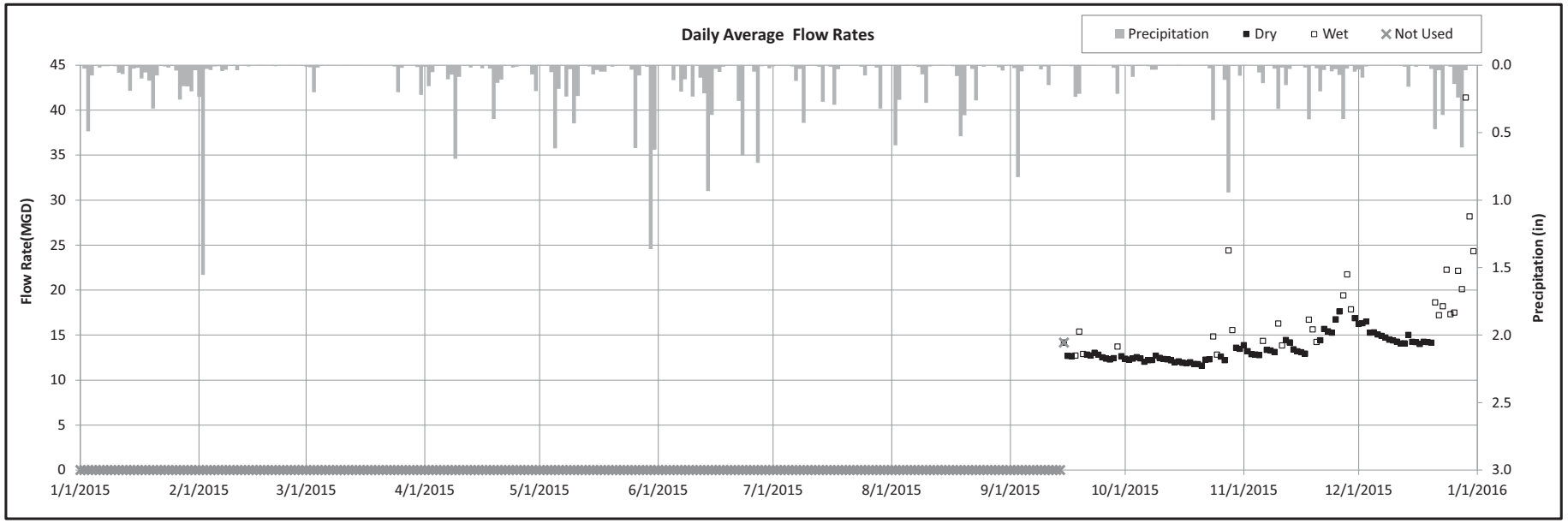
Rouge Valley Sewage Disposal System

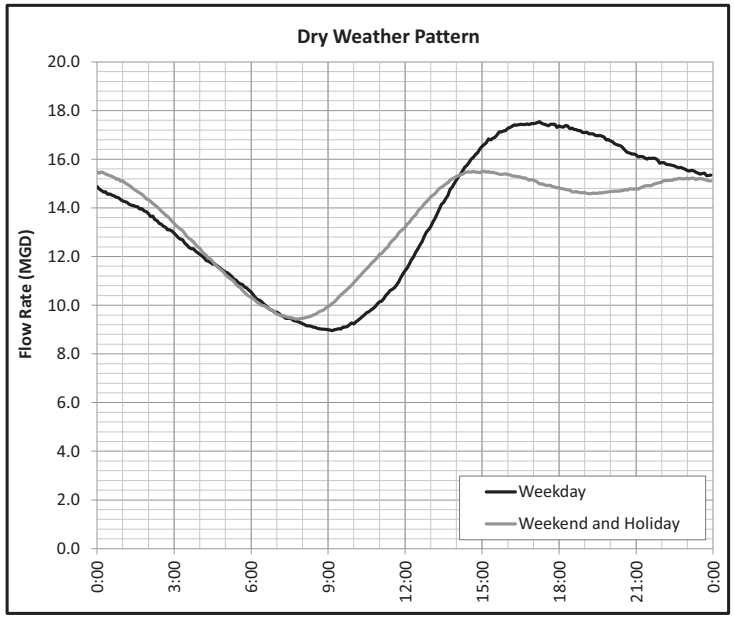
Annual Meter Report

Meter: P-31
Interceptor Manhole ID: RVI 6-12

Location: Hines Drive and Outer Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	-	-	-	-	-	-
May-15	-	-	-	-	-	-
Jun-15	-	-	-	-	-	-
Jul-15	-	-	-	-	-	-
Aug-15	-	-	-	-	-	-
Sep-15	13.0	388.8	12.7	381.3	12	4
Oct-15	12.9	399.6	12.3	381.3	27	4
Nov-15	15.0	448.8	14.2	426.9	21	9
Dec-15	17.5	543.1	14.8	458.5	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	-	-	-	-
3	2.49	5/30/2015	5/31/2015	-	-	-	-
4	1.96	6/12/2015	6/18/2015	-	-	-	-
5	1.10	6/22/2015	6/23/2015	-	-	-	-
6	1.06	8/2/2015	8/3/2015	-	-	-	-
7	1.00	8/19/2015	8/20/2015	-	-	-	-
8	1.24	10/27/2015	10/29/2015	34.12	10/28/15 10:45	3.50	10/28/15 11:15
9	1.22	12/26/2015	12/29/2015	52.15	12/29/15 2:35	5.01	12/29/15 3:10

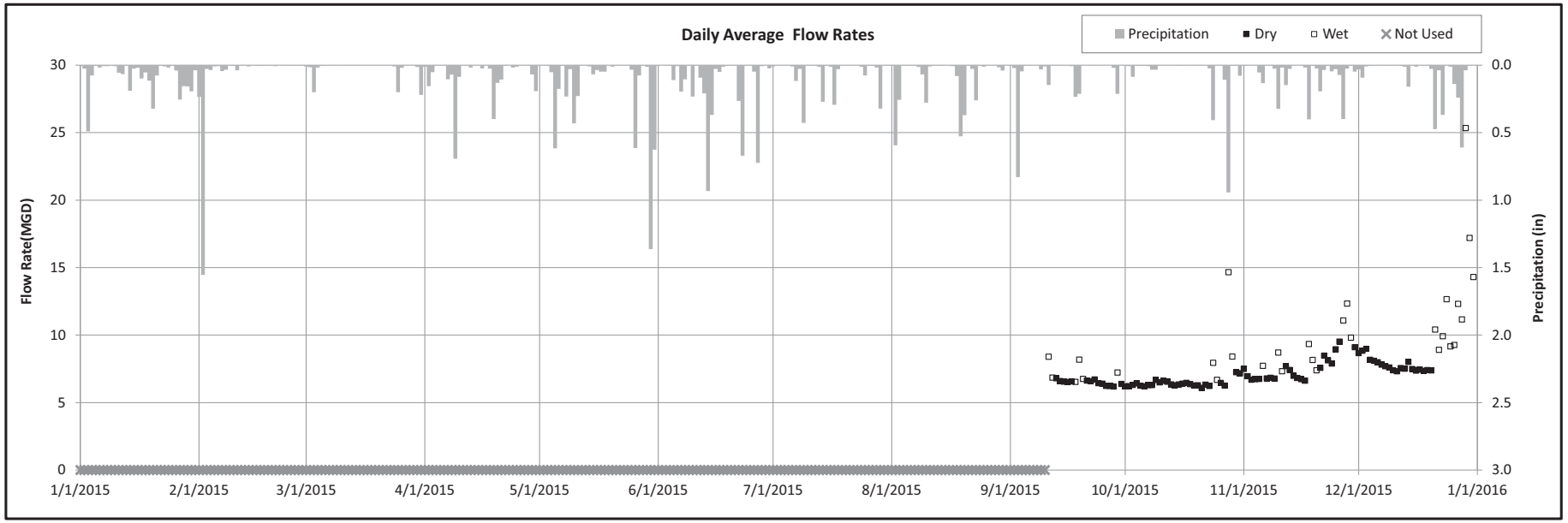
Rouge Valley Sewage Disposal System

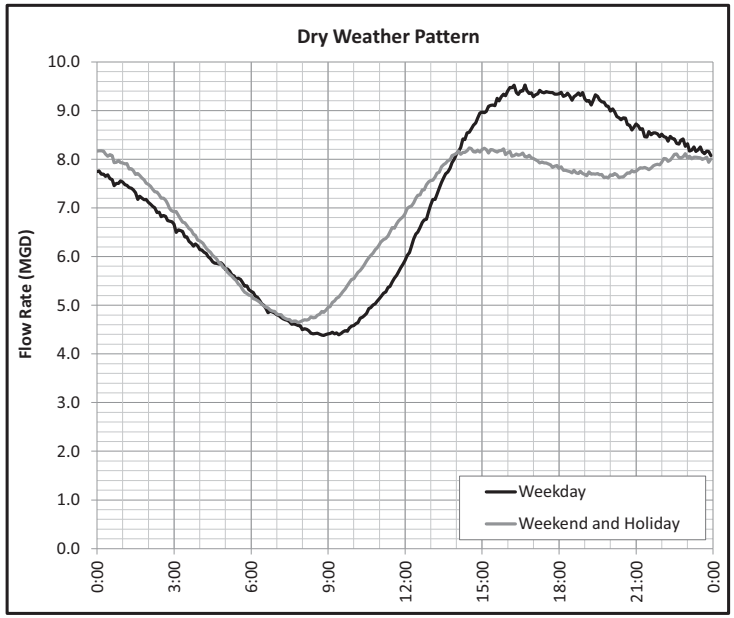
Annual Meter Report

Meter: P-32
Interceptor Manhole ID: MRIR 2-21

Location: Hines Drive and Outer Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	-	-	-	-	-	-
May-15	-	-	-	-	-	-
Jun-15	-	-	-	-	-	-
Jul-15	-	-	-	-	-	-
Aug-15	-	-	-	-	-	-
Sep-15	6.7	201.0	6.5	194.7	14	6
Oct-15	6.8	210.8	6.4	198.7	27	4
Nov-15	8.0	238.8	7.5	224.1	21	9
Dec-15	9.6	296.7	7.8	241.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	-	-	-	-
3	2.49	5/30/2015	5/31/2015	-	-	-	-
4	1.96	6/12/2015	6/18/2015	-	-	-	-
5	1.10	6/22/2015	6/23/2015	-	-	-	-
6	1.06	8/2/2015	8/3/2015	-	-	-	-
7	1.00	8/19/2015	8/20/2015	-	-	-	-
8	1.24	10/27/2015	10/29/2015	21.71	10/28/15 10:35	3.00	10/28/15 11:15
9	1.22	12/26/2015	12/29/2015	29.84	12/29/15 3:10	4.68	12/29/15 3:05

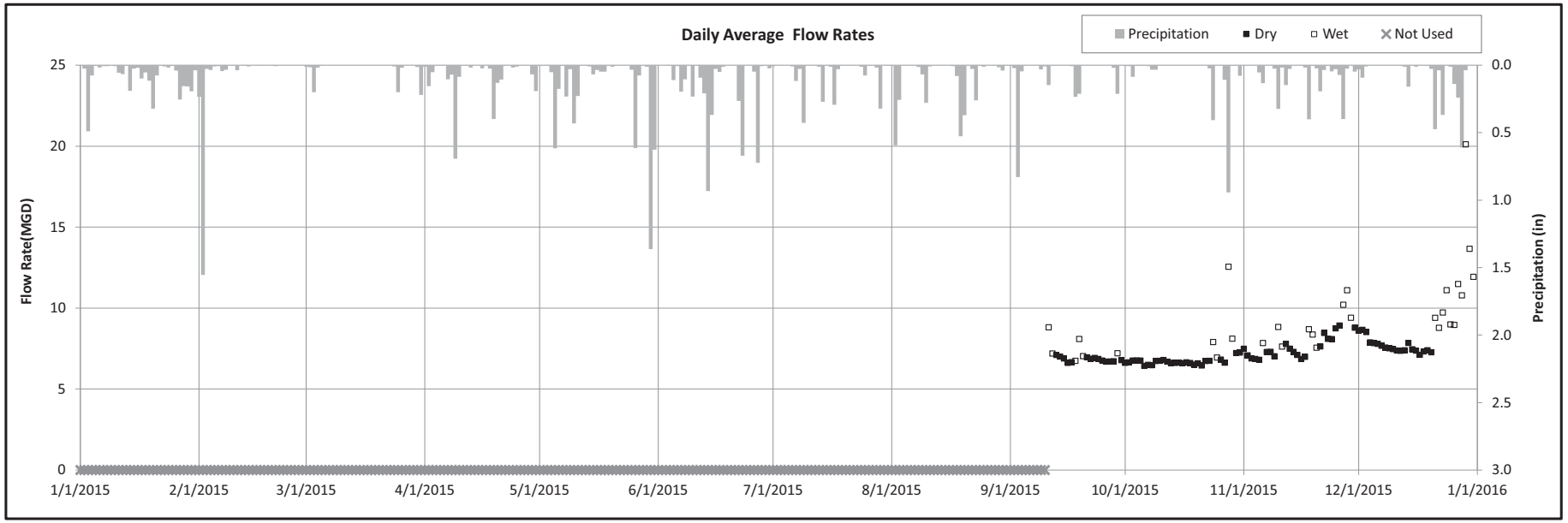
Rouge Valley Sewage Disposal System

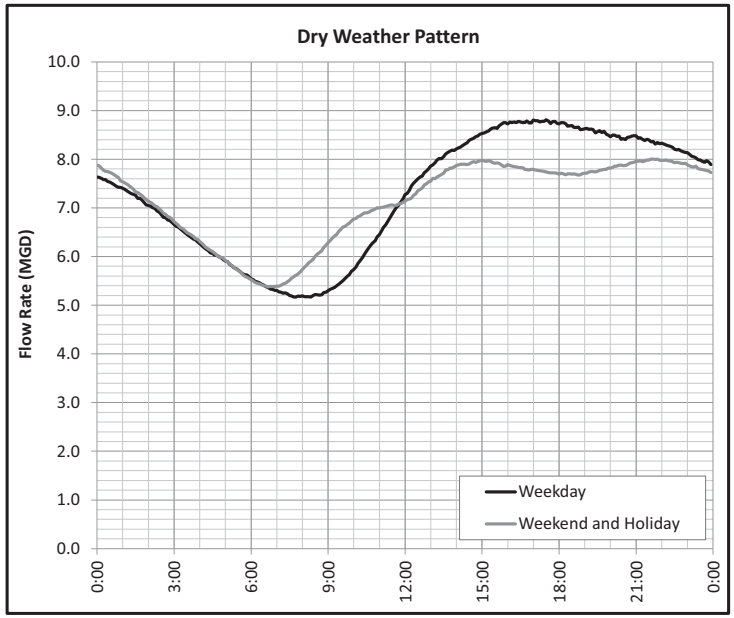
Annual Meter Report

Meter: P-33
Interceptor Manhole ID: MR 2-1

Location: Hines Drive West of Telegraph Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	-	-	-	-	-	-
May-15	-	-	-	-	-	-
Jun-15	-	-	-	-	-	-
Jul-15	-	-	-	-	-	-
Aug-15	-	-	-	-	-	-
Sep-15	7.0	209.4	6.8	204.9	14	6
Oct-15	7.0	216.1	6.7	207.4	27	4
Nov-15	8.0	238.8	7.6	227.1	21	9
Dec-15	9.0	278.4	7.7	237.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	-	-	-	-
3	2.49	5/30/2015	5/31/2015	-	-	-	-
4	1.96	6/12/2015	6/18/2015	-	-	-	-
5	1.10	6/22/2015	6/23/2015	-	-	-	-
6	1.06	8/2/2015	8/3/2015	-	-	-	-
7	1.00	8/19/2015	8/20/2015	-	-	-	-
8	1.24	10/27/2015	10/29/2015	16.09	10/28/15 10:20	1.89	10/28/15 10:45
9	1.22	12/26/2015	12/29/2015	24.58	12/29/15 1:45	2.63	12/29/15 2:25

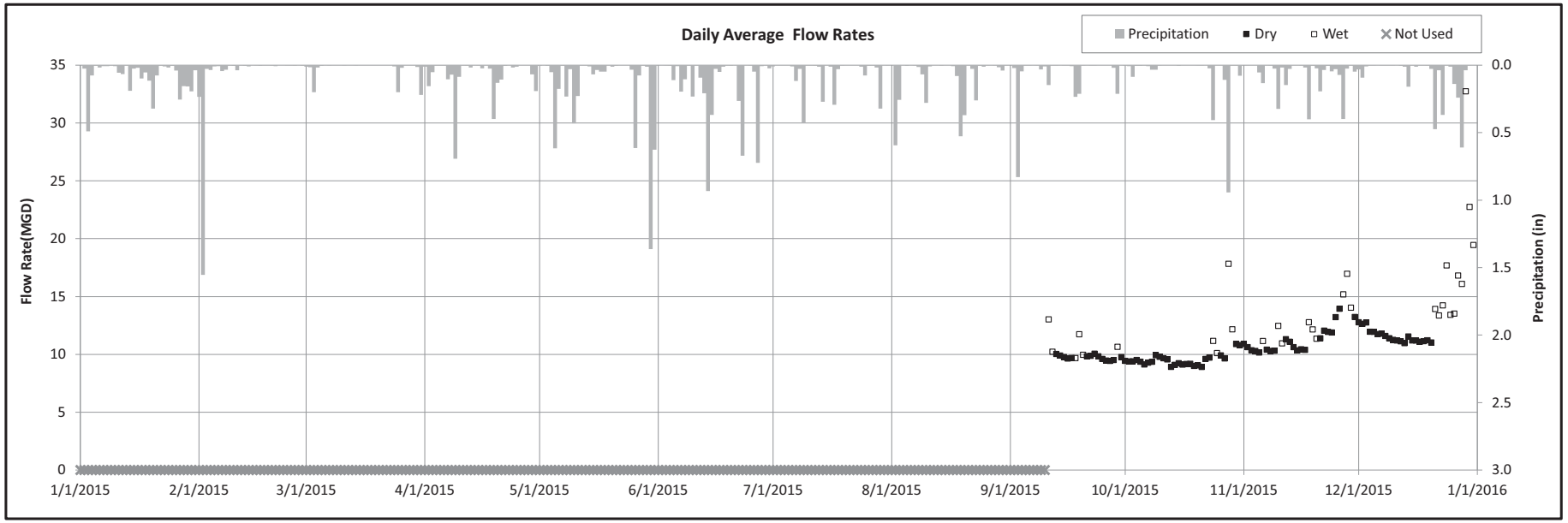
Rouge Valley Sewage Disposal System

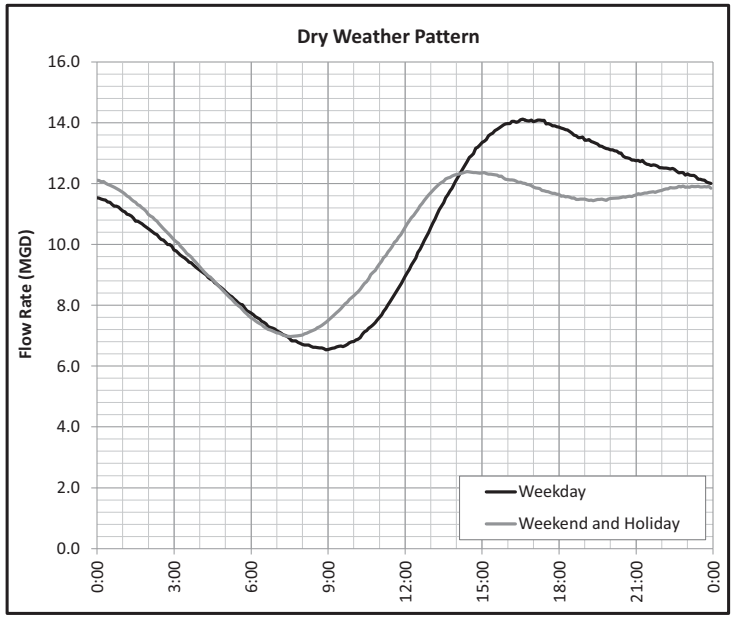
Annual Meter Report

Meter: P-34
Interceptor Manhole ID: RVI 6-28

Location: Hines Drive West of Telegraph Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	-	-	-	-	-	-
May-15	-	-	-	-	-	-
Jun-15	-	-	-	-	-	-
Jul-15	-	-	-	-	-	-
Aug-15	-	-	-	-	-	-
Sep-15	10.0	300.3	9.7	292.2	14	6
Oct-15	9.9	307.2	9.5	293.9	27	4
Nov-15	11.7	352.2	11.2	336.0	21	9
Dec-15	13.7	425.6	11.6	359.0	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	-	-	-	-
3	2.49	5/30/2015	5/31/2015	-	-	-	-
4	1.96	6/12/2015	6/18/2015	-	-	-	-
5	1.10	6/22/2015	6/23/2015	-	-	-	-
6	1.06	8/2/2015	8/3/2015	-	-	-	-
7	1.00	8/19/2015	8/20/2015	-	-	-	-
8	1.24	10/27/2015	10/29/2015	24.78	10/28/15 10:55	3.21	10/28/15 11:25
9	1.22	12/26/2015	12/29/2015	38.65	12/29/15 1:50	4.24	12/29/15 2:30

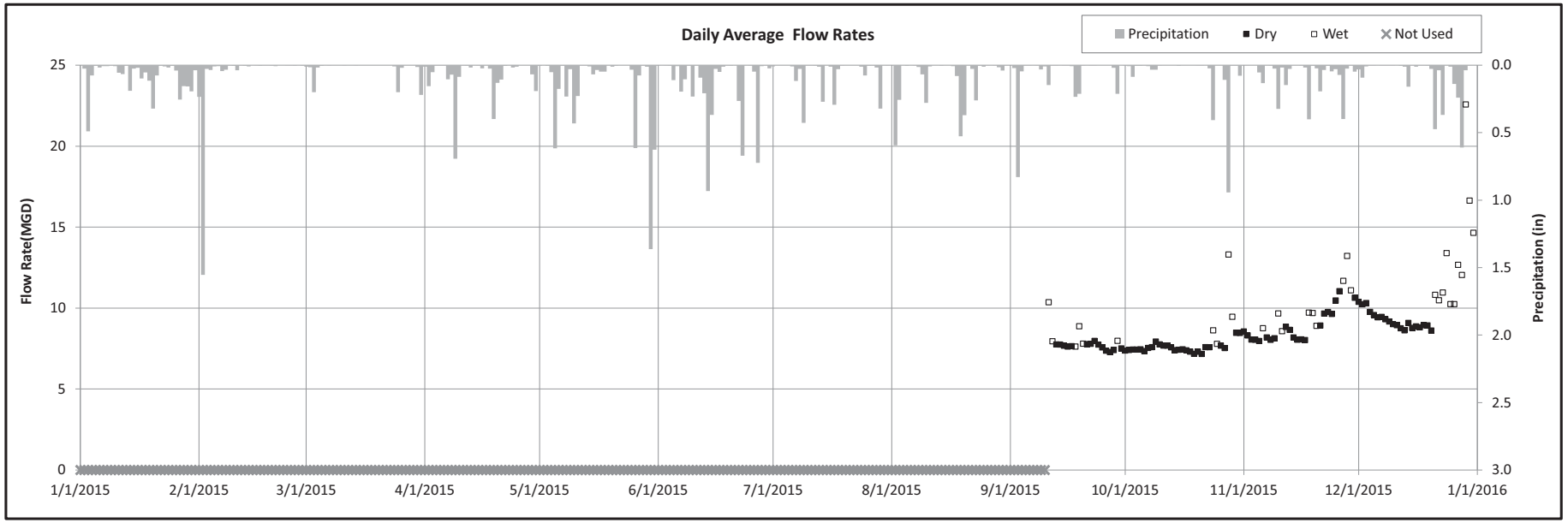
Rouge Valley Sewage Disposal System

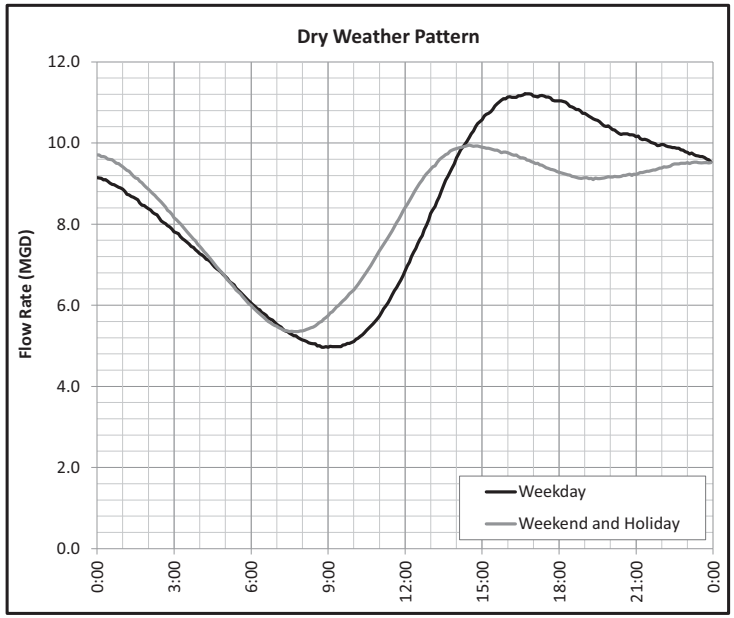
Annual Meter Report

Meter: P-35
Interceptor Manhole ID: MRIR 3-1

Location: Hines Drive West of Telegraph Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	-	-	-	-	-	-
May-15	-	-	-	-	-	-
Jun-15	-	-	-	-	-	-
Jul-15	-	-	-	-	-	-
Aug-15	-	-	-	-	-	-
Sep-15	7.8	234.3	7.6	229.2	14	6
Oct-15	7.9	243.4	7.6	234.4	27	4
Nov-15	9.2	276.6	8.8	264.6	21	9
Dec-15	10.6	329.8	9.3	286.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	-	-	-	-
3	2.49	5/30/2015	5/31/2015	-	-	-	-
4	1.96	6/12/2015	6/18/2015	-	-	-	-
5	1.10	6/22/2015	6/23/2015	-	-	-	-
6	1.06	8/2/2015	8/3/2015	-	-	-	-
7	1.00	8/19/2015	8/20/2015	-	-	-	-
8	1.24	10/27/2015	10/29/2015	18.27	10/28/15 11:05	2.79	10/28/15 11:20
9	1.22	12/26/2015	12/29/2015	26.51	12/29/15 1:40	3.64	12/29/15 2:35

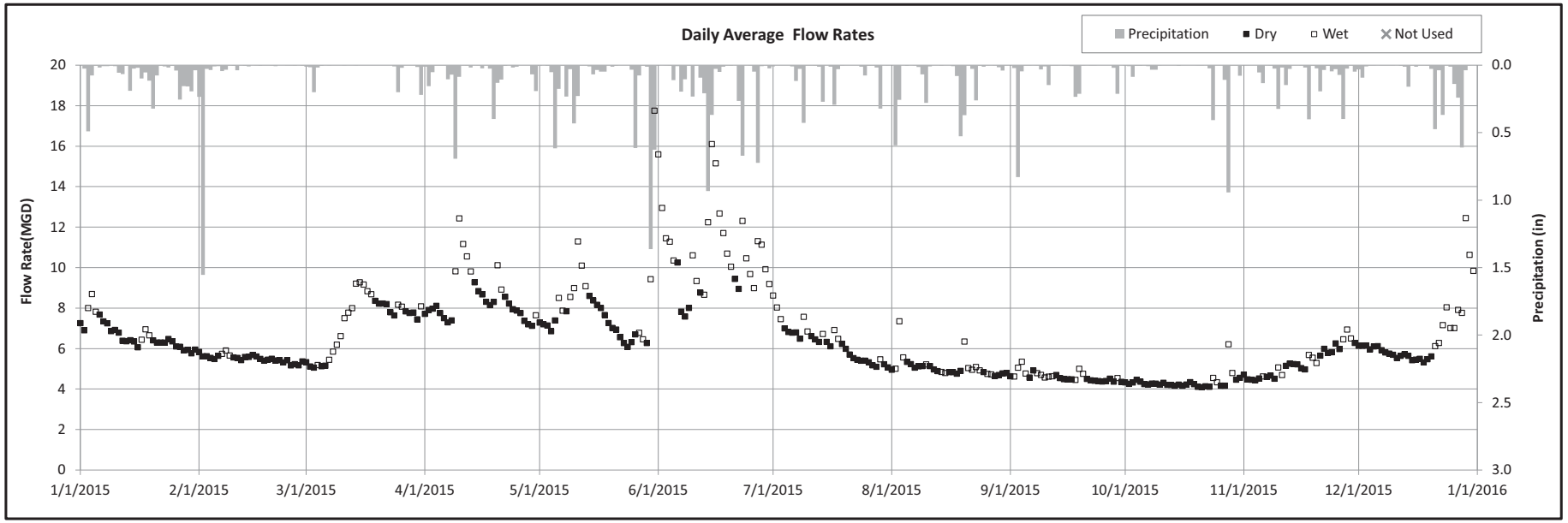
Rouge Valley Sewage Disposal System

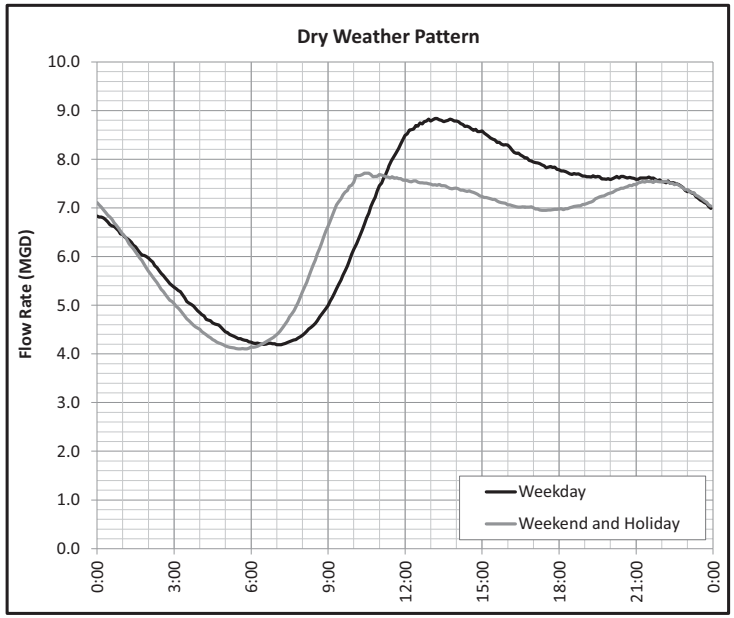
Annual Meter Report

Meter: LV-Basin
Interceptor Manhole ID: RVI 12-12

Location: Inkster Road and Oakley Street
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	6.7	207.1	6.5	201.5	25	6
Feb-15	5.5	154.3	5.5	153.4	25	3
Mar-15	7.3	227.2	7.0	217.0	15	16
Apr-15	8.5	255.6	8.0	239.1	22	8
May-15	8.0	248.6	7.2	223.2	20	11
Jun-15	10.8	322.5	8.7	260.7	7	23
Jul-15	6.3	195.3	6.0	185.1	22	9
Aug-15	5.1	157.5	4.9	153.1	18	13
Sep-15	4.6	138.3	4.5	135.0	17	13
Oct-15	4.4	134.9	4.3	131.8	27	4
Nov-15	5.3	159.9	5.2	155.7	21	9
Dec-15	6.6	205.2	5.8	178.6	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	17.34	4/9/15 21:10	4.85	4/9/15 22:45
2	1.81	5/5/2015	5/11/2015	12.89	5/10/15 18:40	3.48	5/10/15 19:15
3	2.49	5/30/2015	5/31/2015	19.80	5/31/15 5:10	10.17	5/31/15 16:45
4	1.96	6/12/2015	6/18/2015	19.69	6/15/15 20:40	6.68	6/15/15 19:15
5	1.10	6/22/2015	6/23/2015	14.53	6/23/15 3:05	4.12	6/23/15 4:15
6	1.06	8/2/2015	8/3/2015	11.00	8/3/15 1:40	3.10	8/3/15 2:15
7	1.00	8/19/2015	8/20/2015	7.04	8/20/15 9:25	2.55	8/20/15 9:45
8	1.24	10/27/2015	10/29/2015	8.89	10/28/15 9:20	2.96	10/28/15 9:25
9	1.22	12/26/2015	12/29/2015	13.72	12/29/15 11:55	3.41	12/29/15 2:20

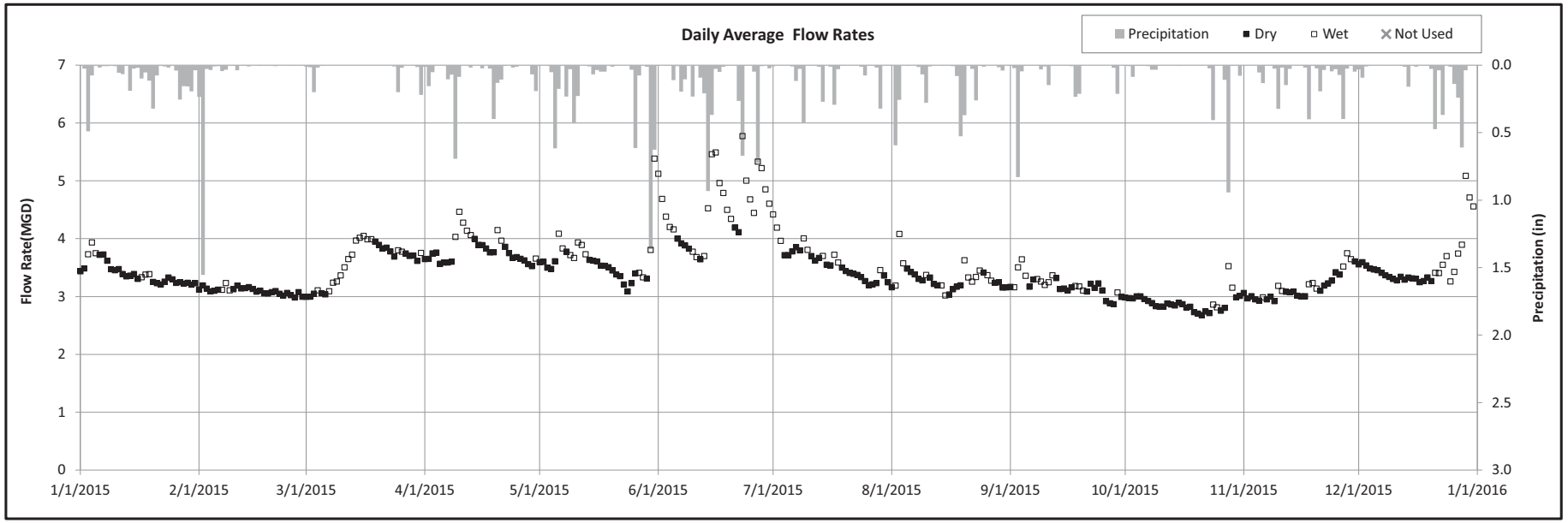
Rouge Valley Sewage Disposal System

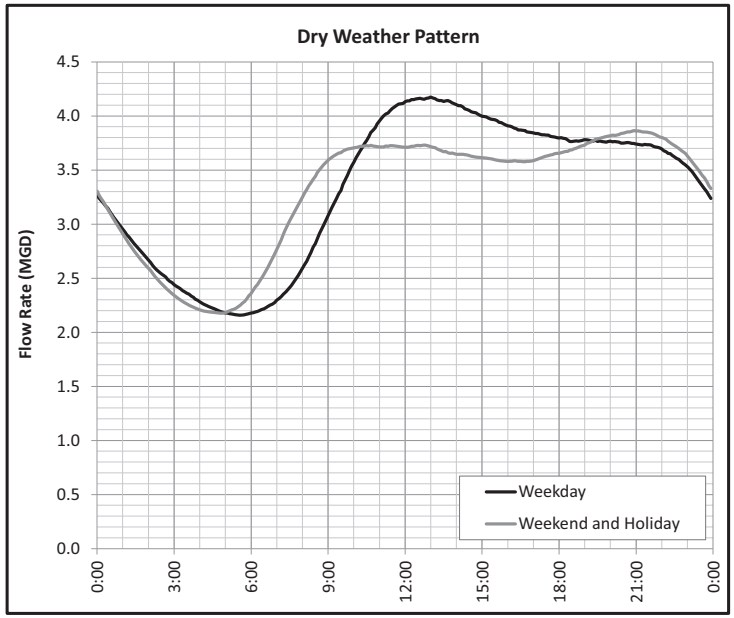
Annual Meter Report

Meter: WE-14
Interceptor Manhole ID: --

Location: Hines Drive West of Merriman
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	3.4	105.7	3.4	104.5	25	6
Feb-15	3.1	86.8	3.1	86.5	25	3
Mar-15	3.6	111.3	3.5	109.4	15	16
Apr-15	3.8	114.3	3.7	111.3	22	8
May-15	3.6	112.2	3.5	107.6	20	11
Jun-15	4.5	135.3	3.9	118.2	7	23
Jul-15	3.6	111.9	3.5	108.5	22	9
Aug-15	3.3	102.6	3.3	100.8	18	13
Sep-15	3.2	95.4	3.1	93.3	17	13
Oct-15	2.9	89.6	2.9	88.7	27	4
Nov-15	3.2	95.1	3.1	93.3	21	9
Dec-15	3.6	110.4	3.4	104.5	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	6.02	4/9/15 20:15	1.68	4/9/15 20:40
2	1.81	5/5/2015	5/11/2015	4.59	5/11/15 17:55	1.39	5/11/15 18:30
3	2.49	5/30/2015	5/31/2015	6.92	5/31/15 11:00	4.55	5/31/15 16:50
4	1.96	6/12/2015	6/18/2015	7.49	6/15/15 15:35	2.62	6/15/15 18:35
5	1.10	6/22/2015	6/23/2015	7.00	6/23/15 2:00	1.88	6/23/15 2:45
6	1.06	8/2/2015	8/3/2015	5.12	8/2/15 23:45	1.50	8/3/15 0:00
7	1.00	8/19/2015	8/20/2015	4.08	8/20/15 10:55	1.28	8/20/15 11:45
8	1.24	10/27/2015	10/29/2015	4.41	10/28/15 8:55	1.37	10/28/15 9:15
9	1.22	12/26/2015	12/29/2015	5.78	12/28/15 23:55	1.62	12/29/15 0:25

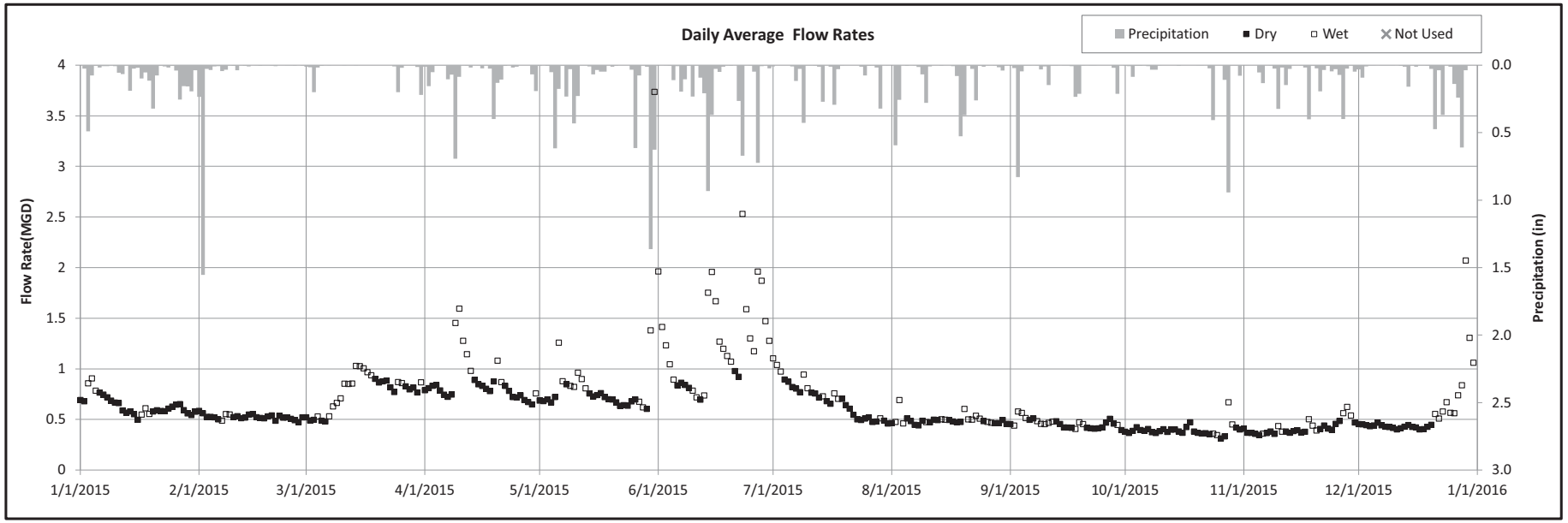
Rouge Valley Sewage Disposal System

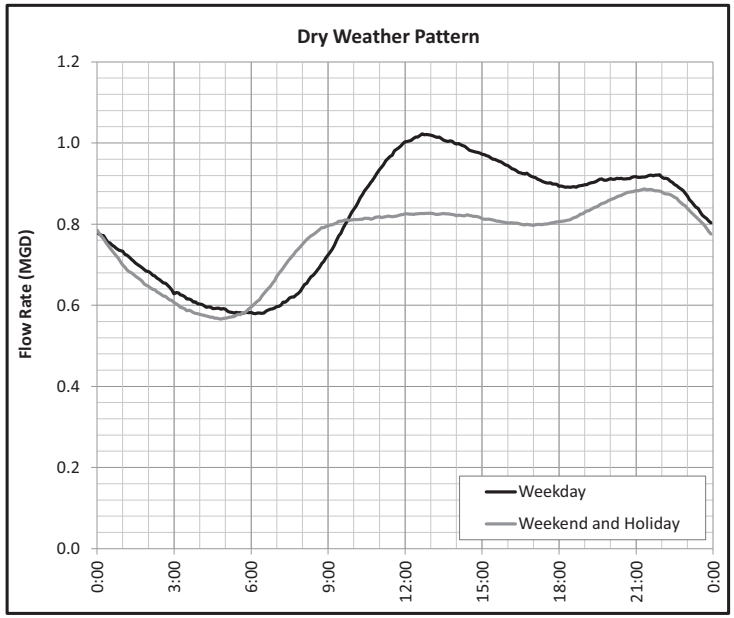
Annual Meter Report

Meter: WE-28
Interceptor Manhole ID: --

Location: Merriman Road and Lower Rouge River
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.6	19.8	0.6	19.2	25	6
Feb-15	0.5	14.6	0.5	14.6	25	3
Mar-15	0.8	23.9	0.7	22.3	15	16
Apr-15	0.9	26.4	0.8	23.4	22	8
May-15	0.9	27.0	0.7	21.7	20	11
Jun-15	1.3	37.8	0.9	25.5	7	23
Jul-15	0.7	21.7	0.6	19.8	22	9
Aug-15	0.5	15.2	0.5	14.9	18	13
Sep-15	0.5	13.8	0.4	13.2	17	13
Oct-15	0.4	12.1	0.4	11.8	27	4
Nov-15	0.4	12.6	0.4	12.0	21	9
Dec-15	0.6	18.0	0.4	13.3	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	4.04	4/9/15 20:20	1.28	4/9/15 20:55
2	1.81	5/5/2015	5/11/2015	2.03	5/6/15 1:15	0.81	5/6/15 1:35
3	2.49	5/30/2015	5/31/2015	4.85	5/31/15 9:25	1.36	5/31/15 11:00
4	1.96	6/12/2015	6/18/2015	3.74	6/14/15 20:35	1.24	6/14/15 21:00
5	1.10	6/22/2015	6/23/2015	4.74	6/23/15 2:10	1.41	6/23/15 2:15
6	1.06	8/2/2015	8/3/2015	1.35	8/3/15 1:45	0.61	8/3/15 2:05
7	1.00	8/19/2015	8/20/2015	0.89	8/20/15 1:15	0.48	8/20/15 1:40
8	1.24	10/27/2015	10/29/2015	1.00	10/28/15 7:50	0.49	10/28/15 10:30
9	1.22	12/26/2015	12/29/2015	3.29	12/29/15 0:35	1.07	12/29/15 0:55

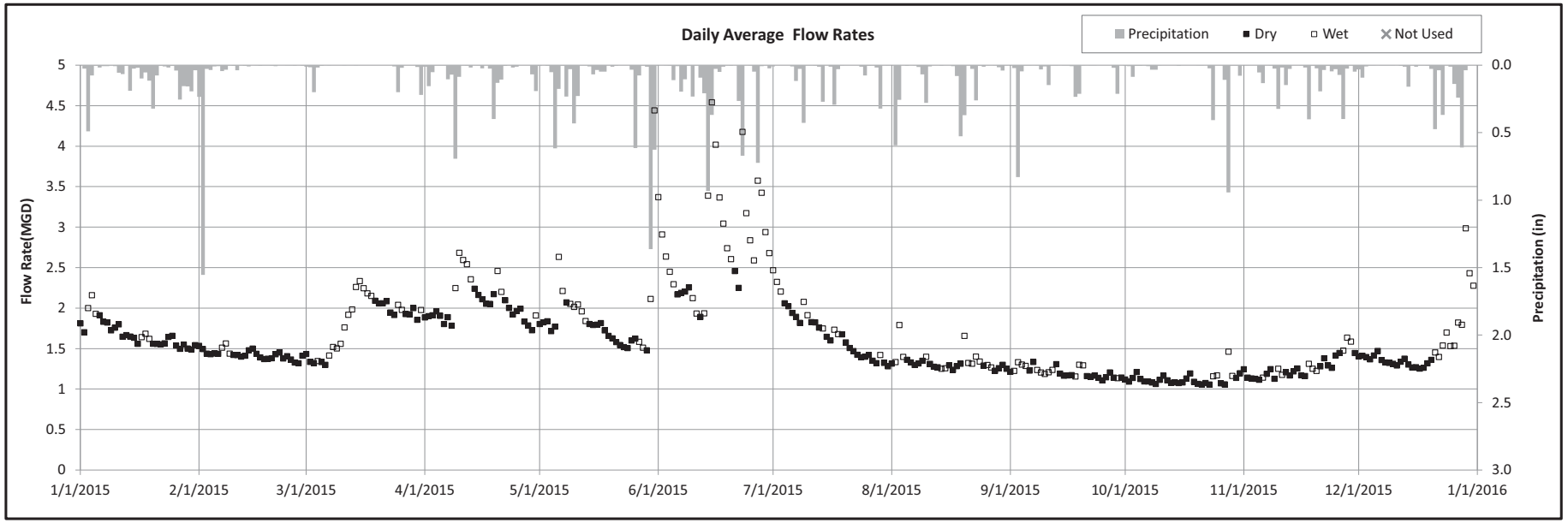
Rouge Valley Sewage Disposal System

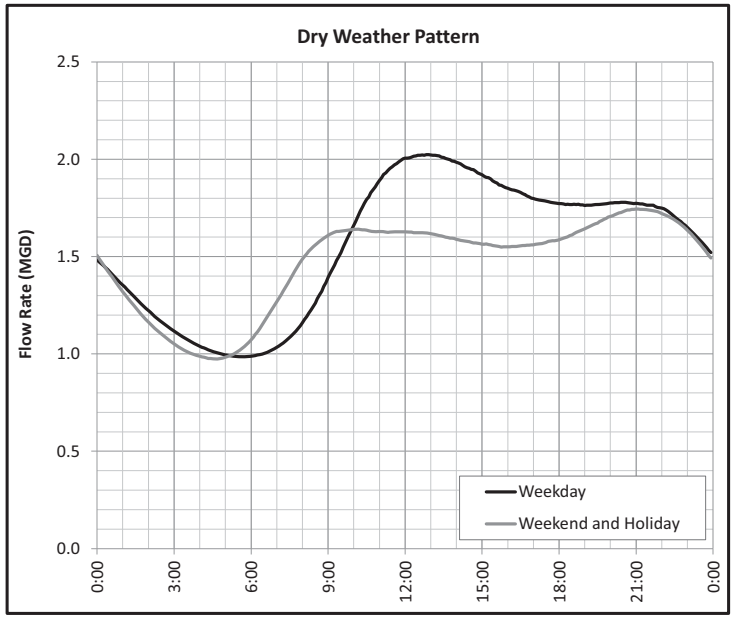
Annual Meter Report

Meter: WE-25
Interceptor Manhole ID: --

Location: Thinbark Road at Lower Rouge River
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.7	52.1	1.7	51.2	25	6
Feb-15	1.4	40.0	1.4	39.8	25	3
Mar-15	1.8	56.7	1.8	54.9	15	16
Apr-15	2.1	62.1	2.0	58.8	22	8
May-15	1.9	58.6	1.7	52.7	20	11
Jun-15	2.8	84.3	2.2	66.0	7	23
Jul-15	1.7	53.0	1.6	49.9	22	9
Aug-15	1.3	41.2	1.3	40.0	18	13
Sep-15	1.2	36.3	1.2	35.4	17	13
Oct-15	1.1	34.7	1.1	34.4	27	4
Nov-15	1.3	38.1	1.2	37.2	21	9
Dec-15	1.5	47.4	1.3	41.5	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	4.04	4/9/15 21:10	1.22	4/9/15 21:40
2	1.81	5/5/2015	5/11/2015	3.32	5/6/15 1:50	1.08	5/6/15 2:25
3	2.49	5/30/2015	5/31/2015	5.55	5/31/15 13:05	1.61	5/31/15 11:00
4	1.96	6/12/2015	6/18/2015	5.76	6/14/15 20:05	1.62	6/14/15 21:25
5	1.10	6/22/2015	6/23/2015	5.50	6/23/15 3:20	1.54	6/23/15 3:30
6	1.06	8/2/2015	8/3/2015	2.86	8/3/15 0:40	0.99	8/3/15 1:00
7	1.00	8/19/2015	8/20/2015	2.18	8/20/15 1:10	0.89	8/20/15 1:35
8	1.24	10/27/2015	10/29/2015	2.17	10/28/15 8:15	0.87	10/28/15 8:45
9	1.22	12/26/2015	12/29/2015	3.44	12/29/15 1:20	1.10	12/29/15 1:30

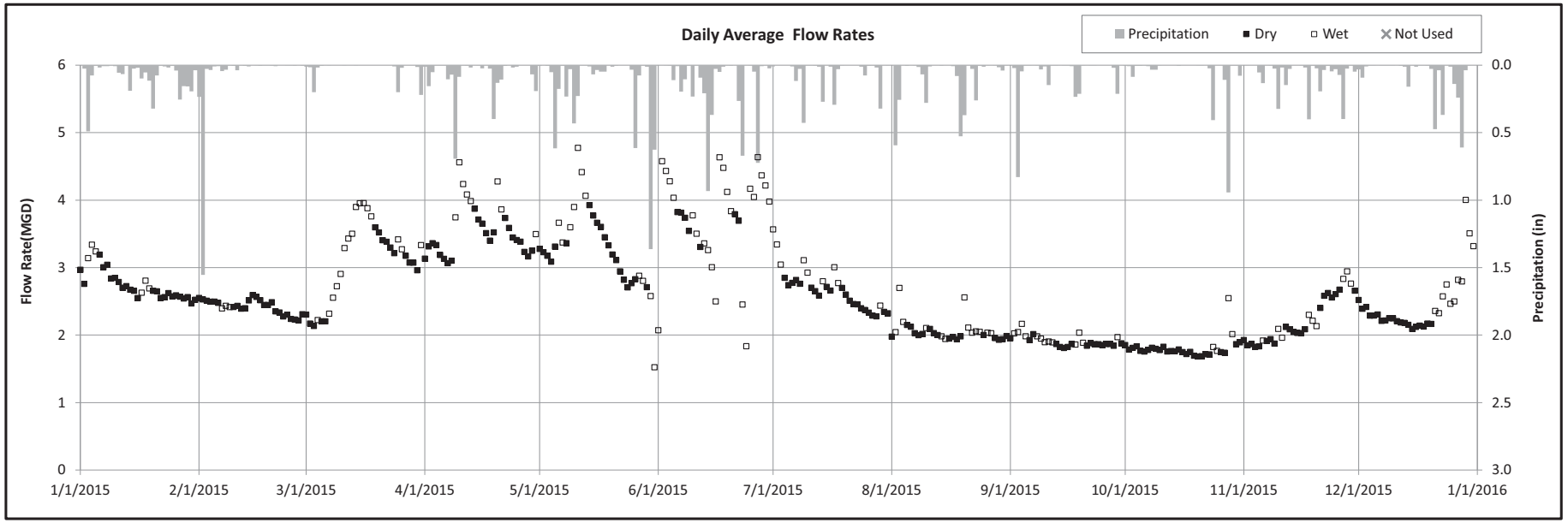
Rouge Valley Sewage Disposal System

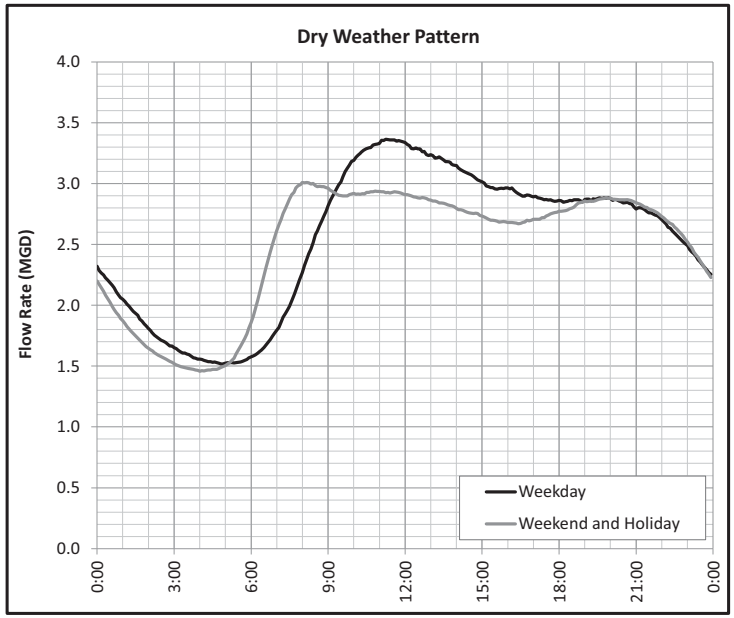
Annual Meter Report

Meter: LV-4
Interceptor Manhole ID: --

Location: Alpine Road and 5 Mile Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	2.8	85.6	2.7	83.7	25	6
Feb-15	2.4	67.8	2.4	67.8	25	3
Mar-15	3.1	96.1	2.9	90.2	15	16
Apr-15	3.6	106.8	3.4	101.7	22	8
May-15	3.3	102.0	3.2	99.5	20	11
Jun-15	3.7	111.3	3.7	110.1	7	23
Jul-15	2.7	83.4	2.6	79.4	22	9
Aug-15	2.1	63.9	2.0	62.0	18	13
Sep-15	1.9	57.3	1.9	56.1	17	13
Oct-15	1.8	56.1	1.8	54.9	27	4
Nov-15	2.2	66.6	2.2	65.1	21	9
Dec-15	2.5	76.0	2.2	69.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	5.20	4/9/15 19:30	2.34	4/9/15 20:15
2	1.81	5/5/2015	5/11/2015	5.48	5/10/15 16:00	2.06	5/10/15 16:45
3	2.49	5/30/2015	5/31/2015	4.28	5/30/15 16:30	2.44	5/31/15 9:35
4	1.96	6/12/2015	6/18/2015	5.04	6/17/15 7:35	2.38	6/15/15 15:40
5	1.10	6/22/2015	6/23/2015	5.58	6/23/15 1:20	2.37	6/23/15 1:50
6	1.06	8/2/2015	8/3/2015	3.53	8/3/15 1:10	1.60	8/3/15 0:00
7	1.00	8/19/2015	8/20/2015	2.99	8/20/15 7:35	1.44	8/20/15 0:45
8	1.24	10/27/2015	10/29/2015	3.49	10/28/15 7:10	1.52	10/28/15 7:50
9	1.22	12/26/2015	12/29/2015	4.62	12/29/15 11:55	1.75	12/29/15 11:45

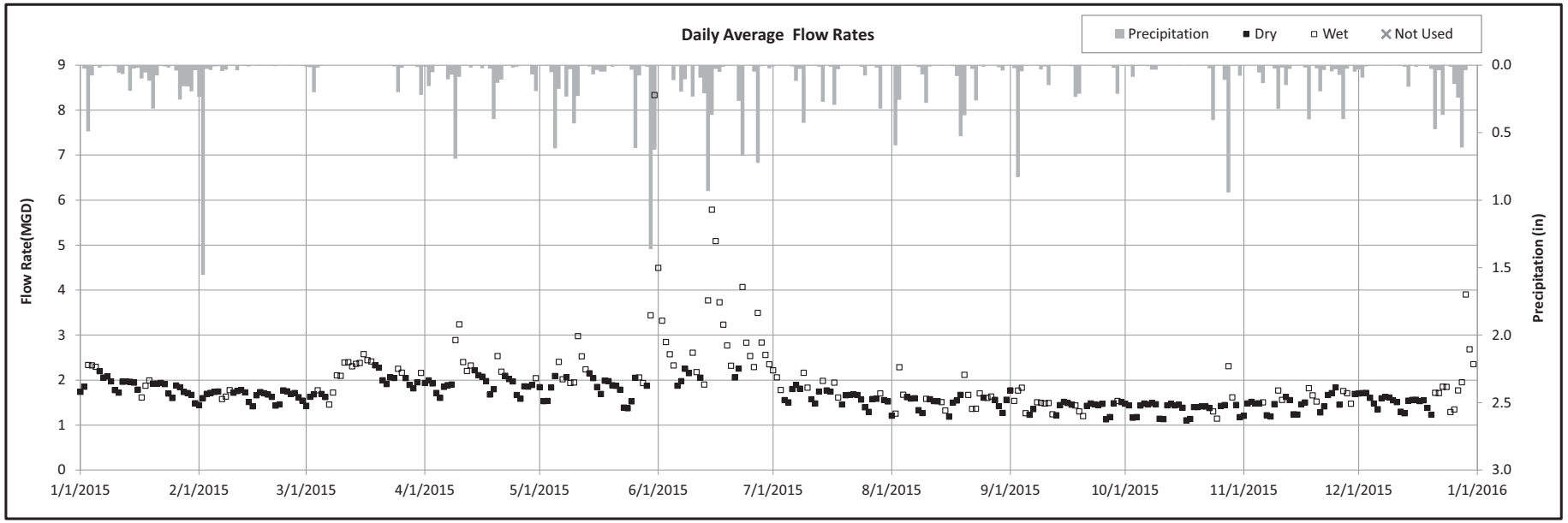
Rouge Valley Sewage Disposal System

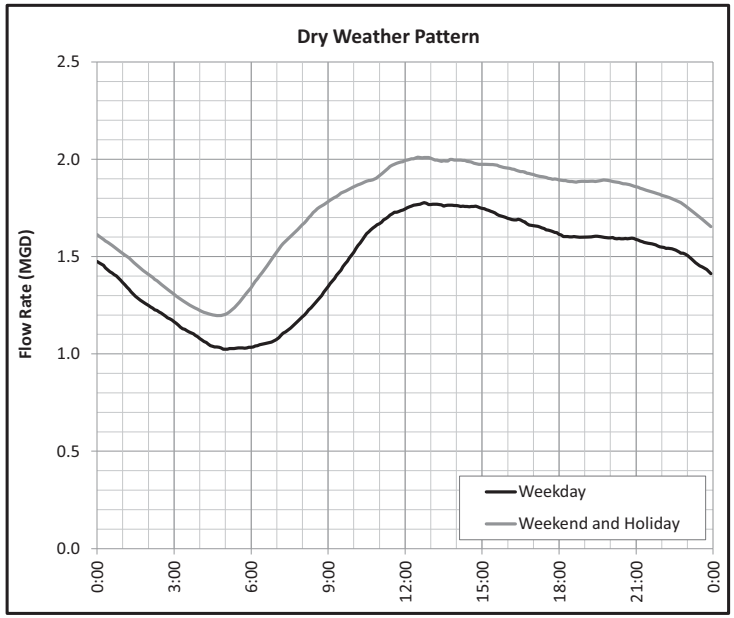
Annual Meter Report

Meter: LV-11
Interceptor Manhole ID: --

Location: Lyndon Road and Inkster Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.9	58.9	1.9	57.4	25	6
Feb-15	1.7	46.2	1.7	46.2	25	3
Mar-15	2.0	63.2	1.9	58.6	15	16
Apr-15	2.1	61.5	1.9	56.7	22	8
May-15	2.2	68.2	1.8	56.4	20	11
Jun-15	2.9	86.4	2.1	62.7	7	23
Jul-15	1.7	52.7	1.6	49.9	22	9
Aug-15	1.5	47.7	1.5	45.9	18	13
Sep-15	1.4	43.2	1.4	42.6	17	13
Oct-15	1.4	43.1	1.4	42.2	27	4
Nov-15	1.5	45.6	1.5	43.8	21	9
Dec-15	1.7	52.7	1.5	47.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	6.78	4/9/15 22:00	1.27	4/9/15 22:30
2	1.81	5/5/2015	5/11/2015	3.66	5/11/15 0:00	0.94	5/11/15 0:25
3	2.49	5/30/2015	5/31/2015	10.90	5/31/15 10:20	5.73	5/31/15 16:55
4	1.96	6/12/2015	6/18/2015	10.16	6/15/15 17:00	2.17	6/15/15 19:10
5	1.10	6/22/2015	6/23/2015	6.63	6/23/15 2:10	1.28	6/23/15 2:30
6	1.06	8/2/2015	8/3/2015	4.07	8/3/15 1:30	0.98	8/3/15 2:00
7	1.00	8/19/2015	8/20/2015	2.80	8/20/15 1:15	0.84	8/20/15 1:35
8	1.24	10/27/2015	10/29/2015	3.19	10/28/15 8:35	0.87	10/28/15 8:40
9	1.22	12/26/2015	12/29/2015	4.41	12/29/15 0:50	1.01	12/29/15 1:00

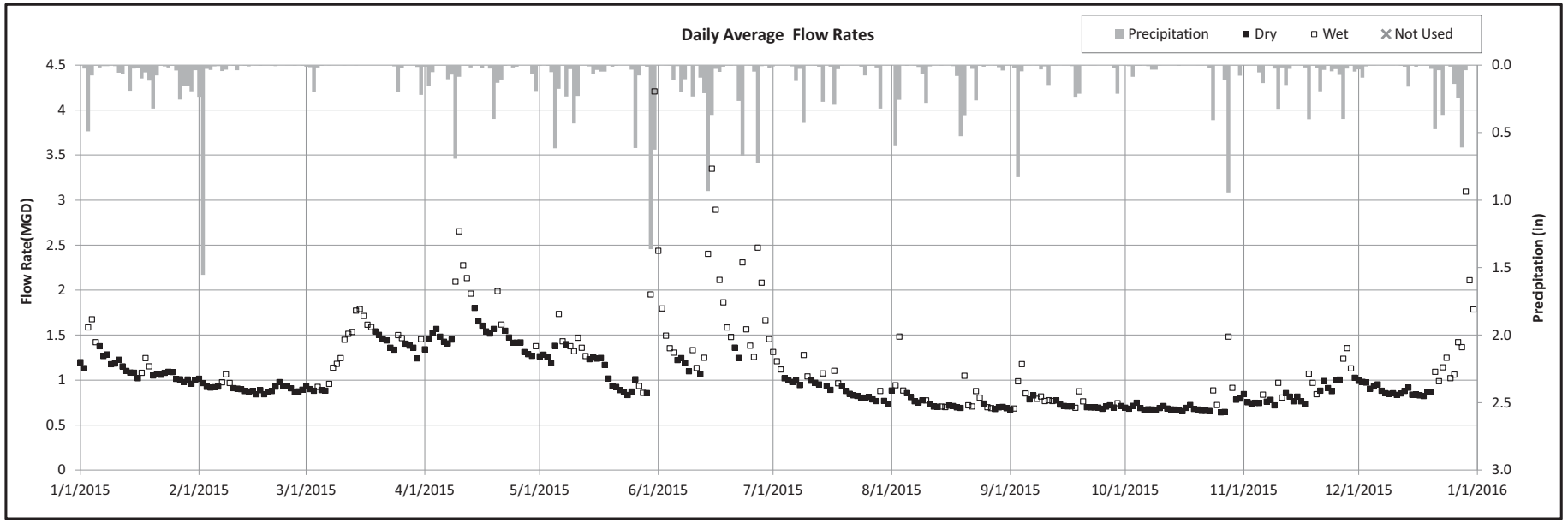
Rouge Valley Sewage Disposal System

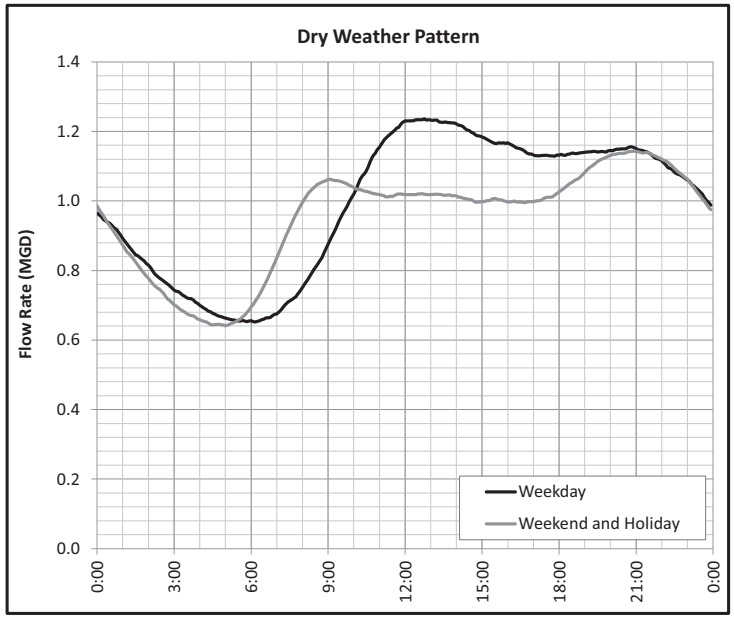
Annual Meter Report

Meter: LV-14
Interceptor Manhole ID: --

Location: West of Cavell South of Ann Arbor Trail
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.2	36.0	1.1	34.4	25	6
Feb-15	0.9	25.8	0.9	25.5	25	3
Mar-15	1.3	41.2	1.2	38.1	15	16
Apr-15	1.6	48.6	1.5	44.4	22	8
May-15	1.3	40.0	1.1	34.4	20	11
Jun-15	1.7	50.4	1.2	36.0	7	23
Jul-15	1.0	29.5	0.9	27.6	22	9
Aug-15	0.8	24.5	0.7	22.9	18	13
Sep-15	0.8	22.8	0.7	21.6	17	13
Oct-15	0.7	22.6	0.7	21.4	27	4
Nov-15	0.9	26.7	0.8	25.2	21	9
Dec-15	1.1	34.1	0.9	27.6	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	5.51	4/9/15 21:25	1.33	4/9/15 21:45
2	1.81	5/5/2015	5/11/2015	2.50	5/6/15 1:30	0.90	5/6/15 1:55
3	2.49	5/30/2015	5/31/2015	7.22	5/30/15 17:25	2.34	5/31/15 16:15
4	1.96	6/12/2015	6/18/2015	8.05	6/15/15 15:50	1.44	6/15/15 16:25
5	1.10	6/22/2015	6/23/2015	6.11	6/23/15 1:50	1.22	6/23/15 2:20
6	1.06	8/2/2015	8/3/2015	3.65	8/2/15 23:45	0.92	8/3/15 0:10
7	1.00	8/19/2015	8/20/2015	2.19	8/20/15 1:05	0.71	8/20/15 1:40
8	1.24	10/27/2015	10/29/2015	2.51	10/28/15 5:55	0.74	10/28/15 6:20
9	1.22	12/26/2015	12/29/2015	4.16	12/29/15 0:30	0.97	12/29/15 0:50

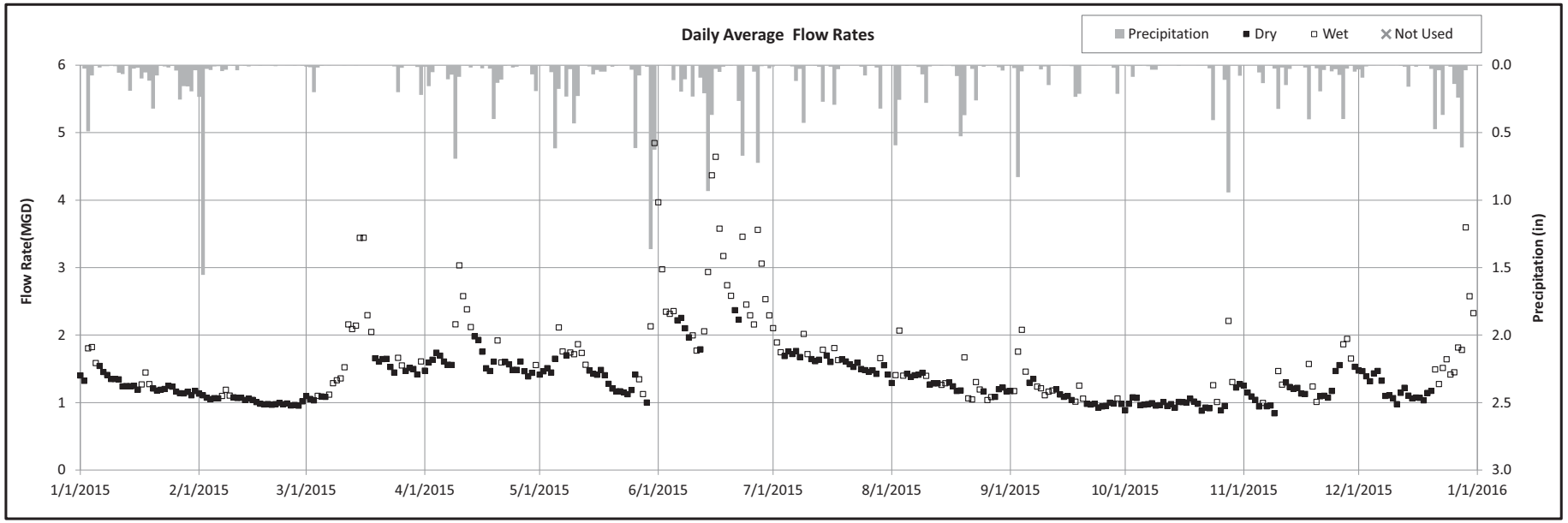
Rouge Valley Sewage Disposal System

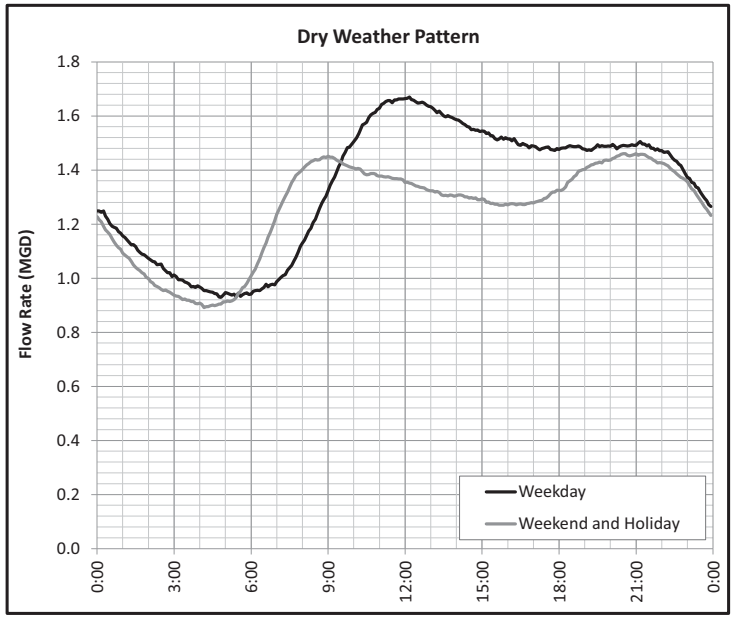
Annual Meter Report

Meter: LV-15
Interceptor Manhole ID: --

Location: Merriman Road at Geraldine Street
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.3	40.6	1.3	39.1	25	6
Feb-15	1.0	28.8	1.0	28.6	25	3
Mar-15	1.6	50.8	1.4	43.1	15	16
Apr-15	1.8	52.5	1.6	48.0	22	8
May-15	1.6	49.0	1.4	41.9	20	11
Jun-15	2.7	80.4	2.1	63.9	7	23
Jul-15	1.7	51.5	1.6	49.3	22	9
Aug-15	1.3	40.0	1.3	39.4	18	13
Sep-15	1.2	34.8	1.1	31.8	17	13
Oct-15	1.1	32.6	1.0	30.7	27	4
Nov-15	1.3	37.5	1.2	34.8	21	9
Dec-15	1.5	45.0	1.2	37.5	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	4.39	4/9/15 19:30	3.53	4/10/15 1:00
2	1.81	5/5/2015	5/11/2015	2.71	5/6/15 0:35	1.95	5/6/15 2:05
3	2.49	5/30/2015	5/31/2015	7.16	5/30/15 16:40	6.14	5/31/15 16:55
4	1.96	6/12/2015	6/18/2015	8.84	6/15/15 20:15	5.56	6/15/15 20:00
5	1.10	6/22/2015	6/23/2015	7.18	6/23/15 1:15	2.25	6/23/15 2:35
6	1.06	8/2/2015	8/3/2015	4.54	8/2/15 23:25	1.74	8/2/15 23:50
7	1.00	8/19/2015	8/20/2015	2.73	8/20/15 0:35	1.39	8/20/15 1:05
8	1.24	10/27/2015	10/29/2015	3.52	10/28/15 7:30	1.56	10/28/15 7:55
9	1.22	12/26/2015	12/29/2015	4.65	12/28/15 23:45	1.80	12/29/15 1:15

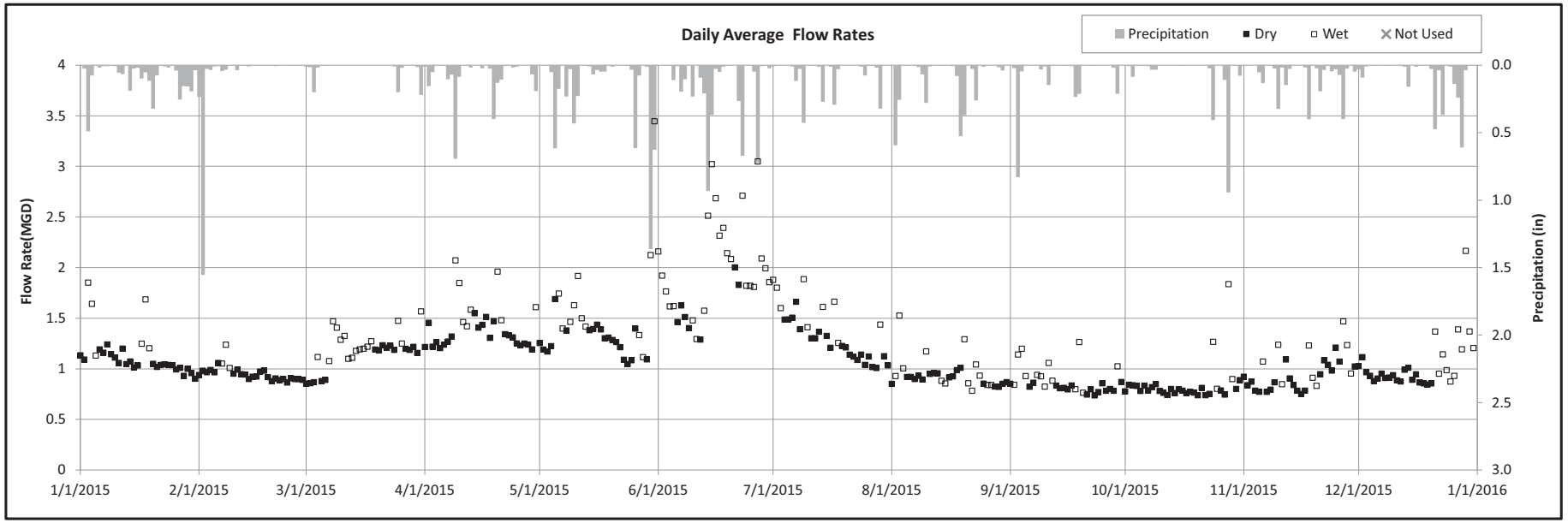
Rouge Valley Sewage Disposal System

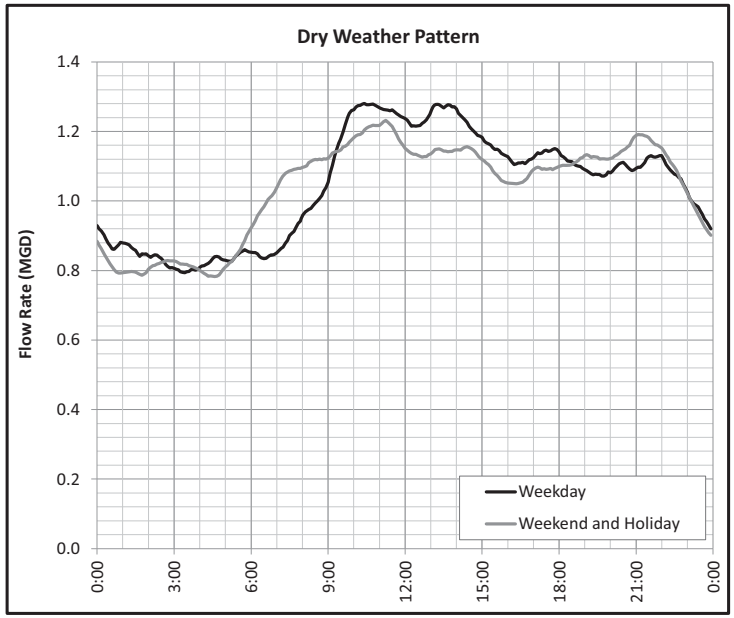
Annual Meter Report

Meter: LV-16
Interceptor Manhole ID: --

Location: 8914 Farmington Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.1	35.3	1.1	32.9	25	6
Feb-15	1.0	26.6	0.9	26.3	25	3
Mar-15	1.2	36.6	1.1	33.8	15	16
Apr-15	1.4	42.6	1.3	39.6	22	8
May-15	1.4	44.6	1.3	39.7	20	11
Jun-15	2.0	58.8	1.6	47.7	7	23
Jul-15	1.4	41.9	1.2	38.4	22	9
Aug-15	1.0	29.5	0.9	28.2	18	13
Sep-15	0.9	26.4	0.8	24.3	17	13
Oct-15	0.8	26.0	0.8	24.5	27	4
Nov-15	1.0	28.8	0.9	27.3	21	9
Dec-15	1.0	32.2	0.9	28.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	4.59	4/9/15 19:35	1.23	4/9/15 20:00
2	1.81	5/5/2015	5/11/2015	3.62	5/11/15 16:50	1.05	5/11/15 17:20
3	2.49	5/30/2015	5/31/2015	6.90	5/30/15 16:40	2.17	5/30/15 17:05
4	1.96	6/12/2015	6/18/2015	6.18	6/15/15 15:10	2.13	6/15/15 16:15
5	1.10	6/22/2015	6/23/2015	5.35	6/23/15 1:20	1.46	6/23/15 1:55
6	1.06	8/2/2015	8/3/2015	3.00	8/2/15 23:15	1.03	8/2/15 23:45
7	1.00	8/19/2015	8/20/2015	2.47	8/20/15 2:45	0.96	8/20/15 3:10
8	1.24	10/27/2015	10/29/2015	2.59	10/28/15 9:15	0.97	10/28/15 9:40
9	1.22	12/26/2015	12/29/2015	3.07	12/28/15 22:50	1.04	12/28/15 23:10

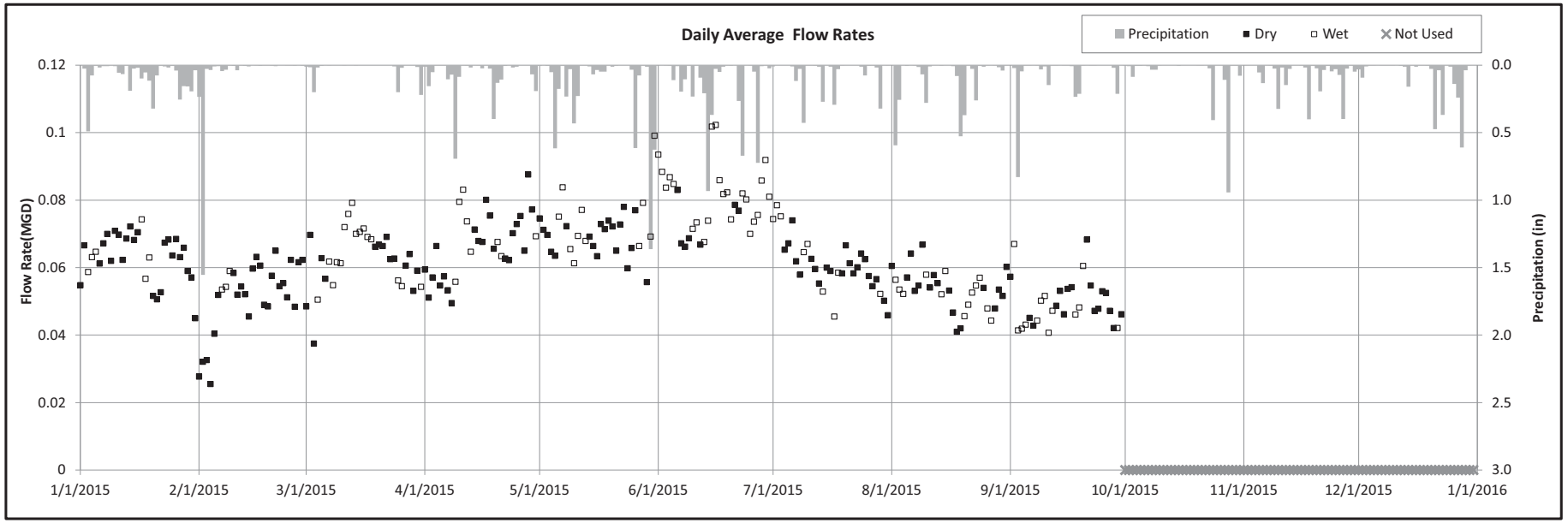
Rouge Valley Sewage Disposal System

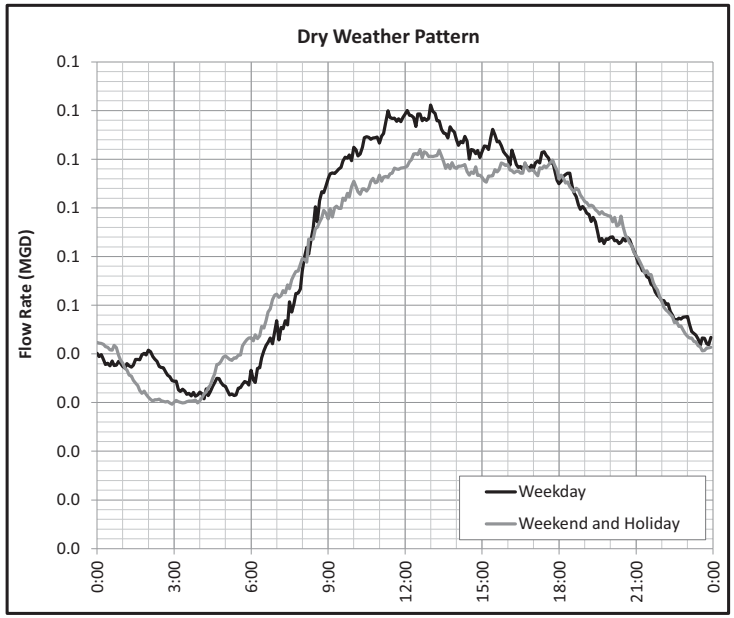
Annual Meter Report

Meter: LV-20
Interceptor Manhole ID: --

Location: Middlebelt Road & Roycroft Street
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.1	1.9	0.1	1.9	25	6
Feb-15	0.1	1.4	0.1	1.4	25	3
Mar-15	0.1	1.9	0.1	1.9	15	16
Apr-15	0.1	2.1	0.1	2.1	22	8
May-15	0.1	2.2	0.1	2.2	20	11
Jun-15	0.1	2.4	0.1	2.1	7	23
Jul-15	0.1	1.9	0.1	1.9	22	9
Aug-15	0.1	1.6	0.1	1.6	18	13
Sep-15	0.1	1.5	0.1	1.5	17	13
Oct-15	-	-	-	-	0	0
Nov-15	-	-	-	-	0	0
Dec-15	-	-	-	-	0	0

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	0.11	4/10/15 15:55	0.22	4/10/15 8:05
2	1.81	5/5/2015	5/11/2015	0.11	5/7/15 9:35	0.23	5/8/15 14:50
3	2.49	5/30/2015	5/31/2015	0.13	5/31/15 9:50	0.26	5/30/15 16:30
4	1.96	6/12/2015	6/18/2015	0.14	6/15/15 15:25	0.26	6/14/15 13:55
5	1.10	6/22/2015	6/23/2015	0.11	6/23/15 11:35	0.25	6/23/15 1:10
6	1.06	8/2/2015	8/3/2015	0.07	8/3/15 12:35	0.24	8/2/15 23:10
7	1.00	8/19/2015	8/20/2015	0.06	8/19/15 17:55	0.18	8/20/15 10:10
8	1.24	10/27/2015	10/29/2015	-	-	0.23	10/28/15 8:40
9	1.22	12/26/2015	12/29/2015	-	-	0.29	12/27/15 10:35

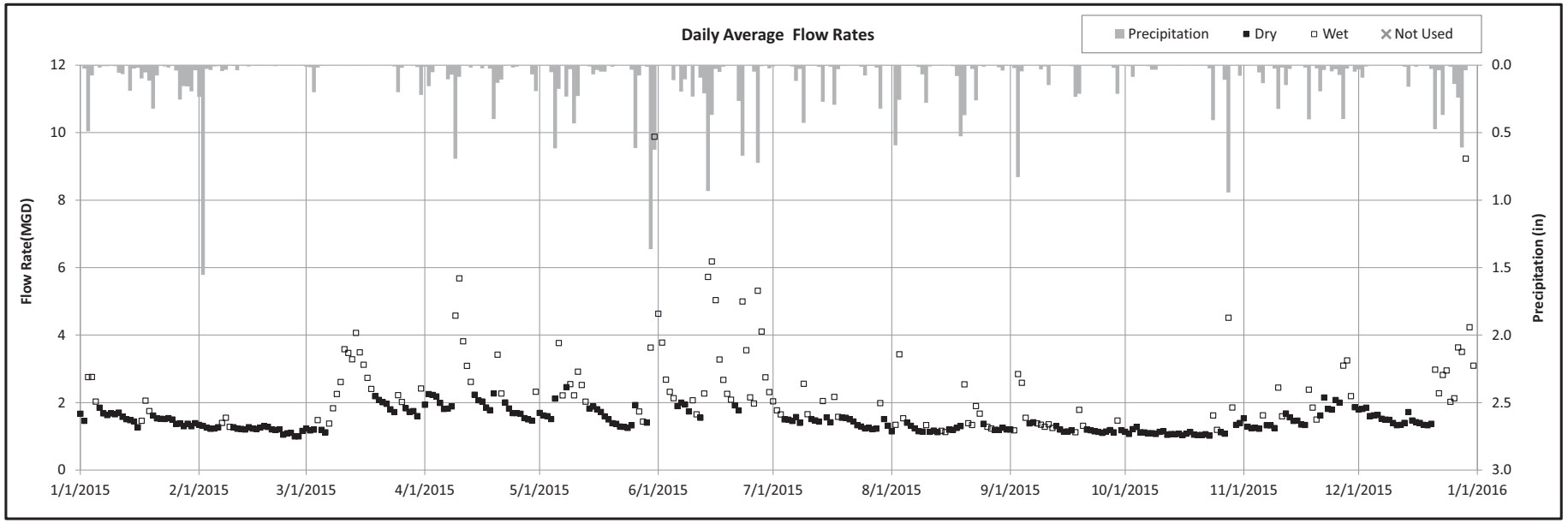
Rouge Valley Sewage Disposal System

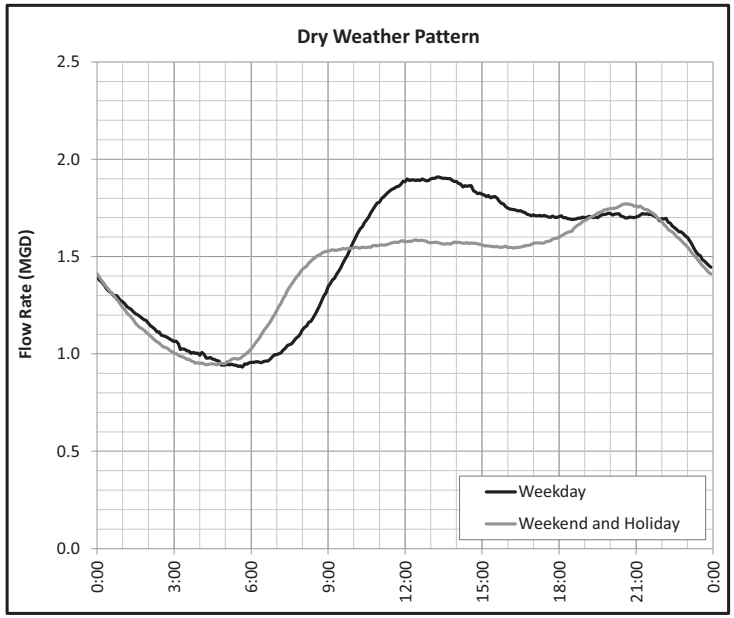
Annual Meter Report

Meter: M-1
Interceptor Manhole ID: --

Location: Middlebelt Road North of Rush
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	1.6	50.8	1.5	47.1	25	6
Feb-15	1.2	34.4	1.2	33.6	25	3
Mar-15	2.2	67.0	1.6	50.8	15	16
Apr-15	2.3	69.6	1.9	57.0	22	8
May-15	2.2	67.6	1.6	50.5	20	11
Jun-15	3.0	88.8	1.8	54.9	7	23
Jul-15	1.6	48.7	1.4	44.0	22	9
Aug-15	1.4	43.1	1.2	37.8	18	13
Sep-15	1.4	40.8	1.2	36.0	17	13
Oct-15	1.3	39.4	1.1	34.4	27	4
Nov-15	1.8	52.5	1.6	46.5	21	9
Dec-15	2.2	69.1	1.5	47.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	9.26	4/9/15 19:50	6.16	4/9/15 22:55
2	1.81	5/5/2015	5/11/2015	7.00	5/6/15 1:05	2.90	5/6/15 2:20
3	2.49	5/30/2015	5/31/2015	16.35	5/31/15 8:30	8.60	5/31/15 16:50
4	1.96	6/12/2015	6/18/2015	12.50	6/15/15 15:40	8.78	6/16/15 0:00
5	1.10	6/22/2015	6/23/2015	9.51	6/23/15 1:10	7.78	6/23/15 3:00
6	1.06	8/2/2015	8/3/2015	8.50	8/3/15 0:45	4.23	8/3/15 2:35
7	1.00	8/19/2015	8/20/2015	5.64	8/20/15 1:05	1.62	8/20/15 1:35
8	1.24	10/27/2015	10/29/2015	7.52	10/28/15 5:30	2.49	10/28/15 8:45
9	1.22	12/26/2015	12/29/2015	13.33	12/29/15 3:00	6.87	12/29/15 2:05

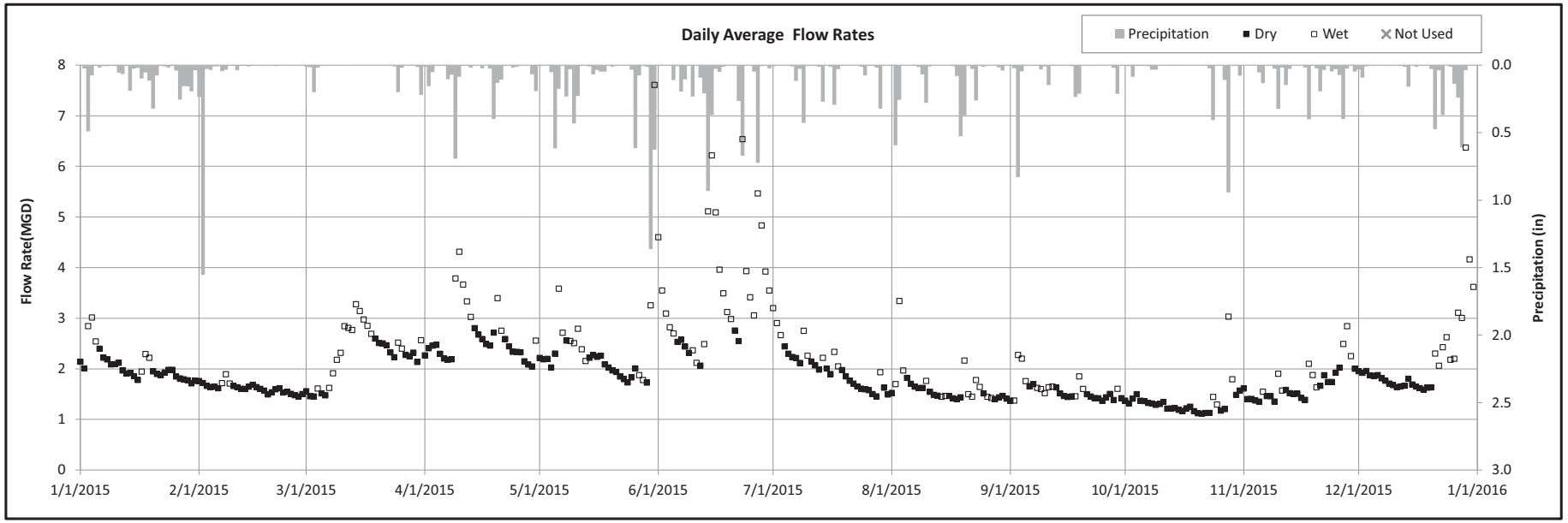
Rouge Valley Sewage Disposal System

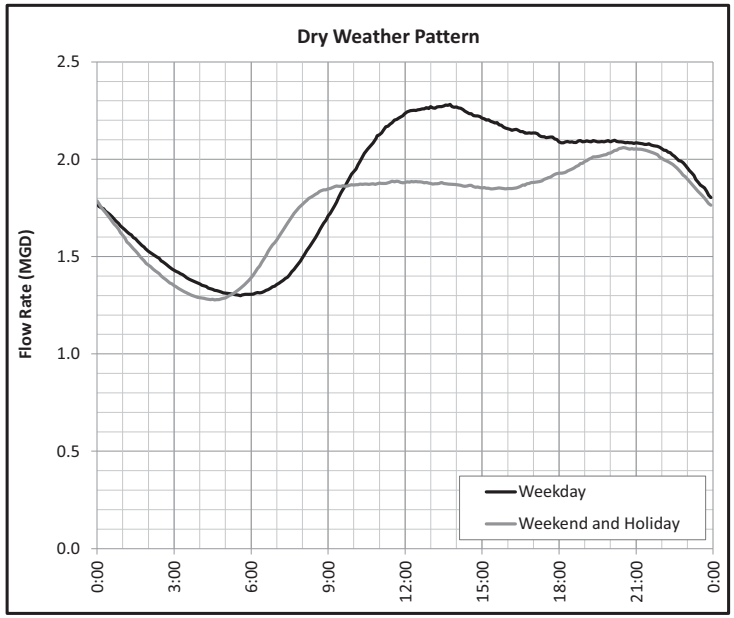
Annual Meter Report

Meter: M-2
Interceptor Manhole ID: --

Location: Merriman Road South of Hines Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	2.1	63.9	2.0	60.8	25	6
Feb-15	1.6	45.4	1.6	44.8	25	3
Mar-15	2.3	71.6	2.1	64.2	15	16
Apr-15	2.7	79.5	2.4	71.7	22	8
May-15	2.4	74.7	2.1	64.2	20	11
Jun-15	3.5	105.6	2.5	73.8	7	23
Jul-15	2.1	63.6	1.9	58.0	22	9
Aug-15	1.6	50.5	1.5	47.1	18	13
Sep-15	1.6	47.4	1.5	44.4	17	13
Oct-15	1.4	42.2	1.3	39.7	27	4
Nov-15	1.7	51.6	1.6	47.7	21	9
Dec-15	2.2	69.1	1.8	54.3	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	7.43	4/9/15 20:20	1.89	4/9/15 20:35
2	1.81	5/5/2015	5/11/2015	5.25	5/6/15 1:15	1.53	5/6/15 1:45
3	2.49	5/30/2015	5/31/2015	9.25	5/31/15 9:05	5.47	5/31/15 15:30
4	1.96	6/12/2015	6/18/2015	9.95	6/14/15 15:15	2.92	6/15/15 18:20
5	1.10	6/22/2015	6/23/2015	10.33	6/23/15 3:00	2.36	6/23/15 3:40
6	1.06	8/2/2015	8/3/2015	7.12	8/3/15 1:20	1.81	8/3/15 1:35
7	1.00	8/19/2015	8/20/2015	3.63	8/20/15 0:50	1.15	8/20/15 1:10
8	1.24	10/27/2015	10/29/2015	4.58	10/28/15 7:40	1.29	10/28/15 8:00
9	1.22	12/26/2015	12/29/2015	8.45	12/29/15 0:20	1.92	12/29/15 0:30

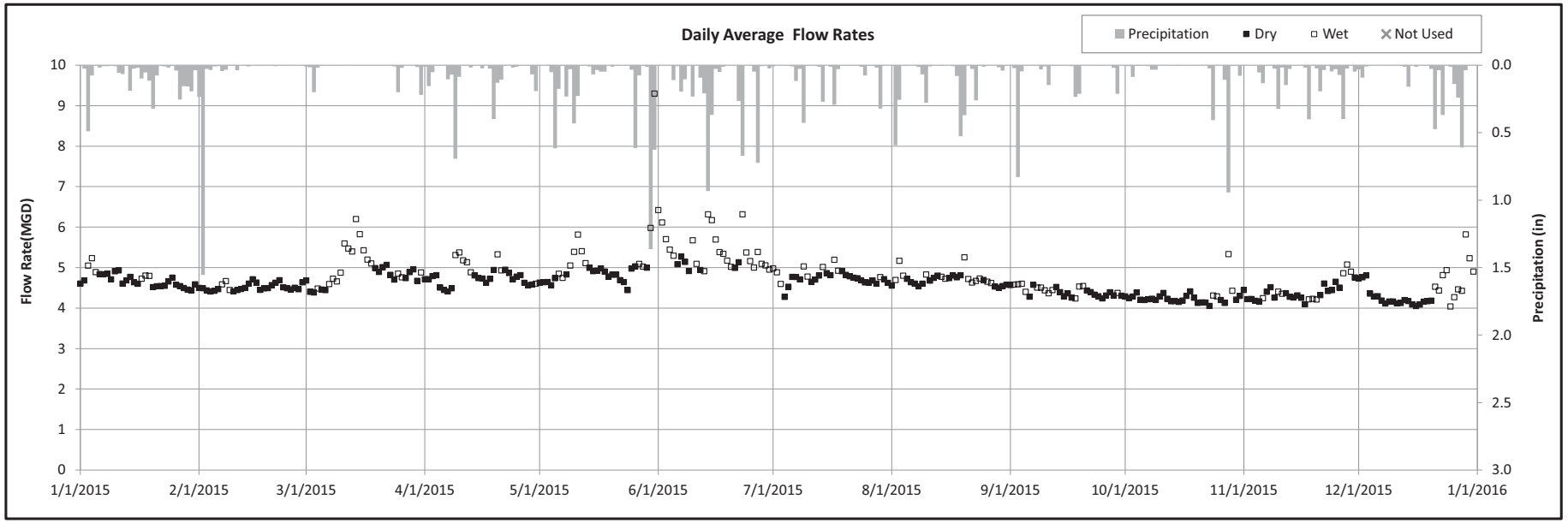
Rouge Valley Sewage Disposal System

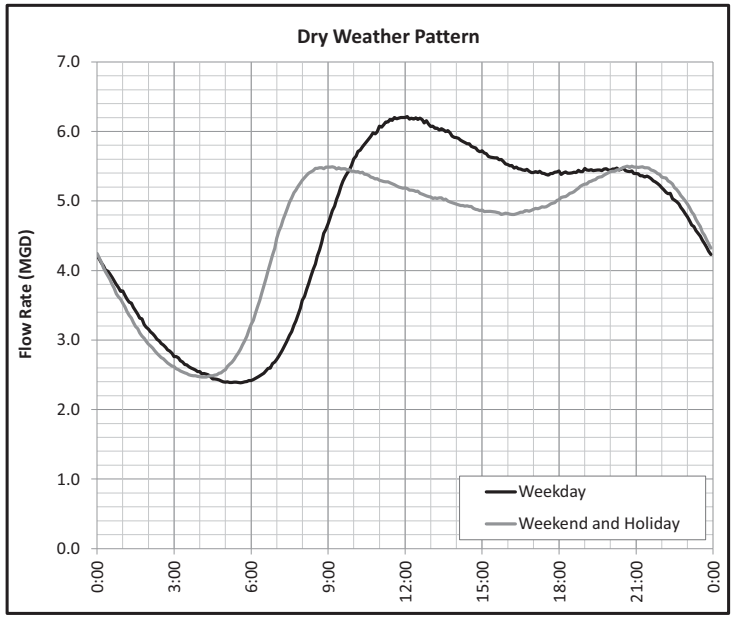
Annual Meter Report

Meter: BG-1
Interceptor Manhole ID: NT 25

Location: 8 Mile Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	4.7	145.7	4.7	144.2	25	6
Feb-15	4.5	126.6	4.5	126.6	25	3
Mar-15	4.9	153.1	4.7	146.9	15	16
Apr-15	4.8	144.0	4.7	141.0	22	8
May-15	5.1	157.8	4.8	148.8	20	11
Jun-15	5.4	161.7	5.1	152.1	7	23
Jul-15	4.8	147.6	4.7	145.7	22	9
Aug-15	4.7	146.0	4.7	144.5	18	13
Sep-15	4.4	132.3	4.4	131.1	17	13
Oct-15	4.3	132.4	4.2	131.1	27	4
Nov-15	4.4	132.3	4.4	131.1	21	9
Dec-15	4.4	137.0	4.3	132.1	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	8.90	4/9/15 20:05	-	-
2	1.81	5/5/2015	5/11/2015	7.45	5/10/15 16:05	-	-
3	2.49	5/30/2015	5/31/2015	11.50	5/31/15 11:05	-	-
4	1.96	6/12/2015	6/18/2015	9.49	6/14/15 14:10	-	-
5	1.10	6/22/2015	6/23/2015	7.16	6/23/15 1:25	-	-
6	1.06	8/2/2015	8/3/2015	5.97	8/3/15 10:10	-	-
7	1.00	8/19/2015	8/20/2015	6.19	8/20/15 8:10	-	-
8	1.24	10/27/2015	10/29/2015	7.63	10/28/15 6:50	-	-
9	1.22	12/26/2015	12/29/2015	7.51	12/29/15 11:15	-	-

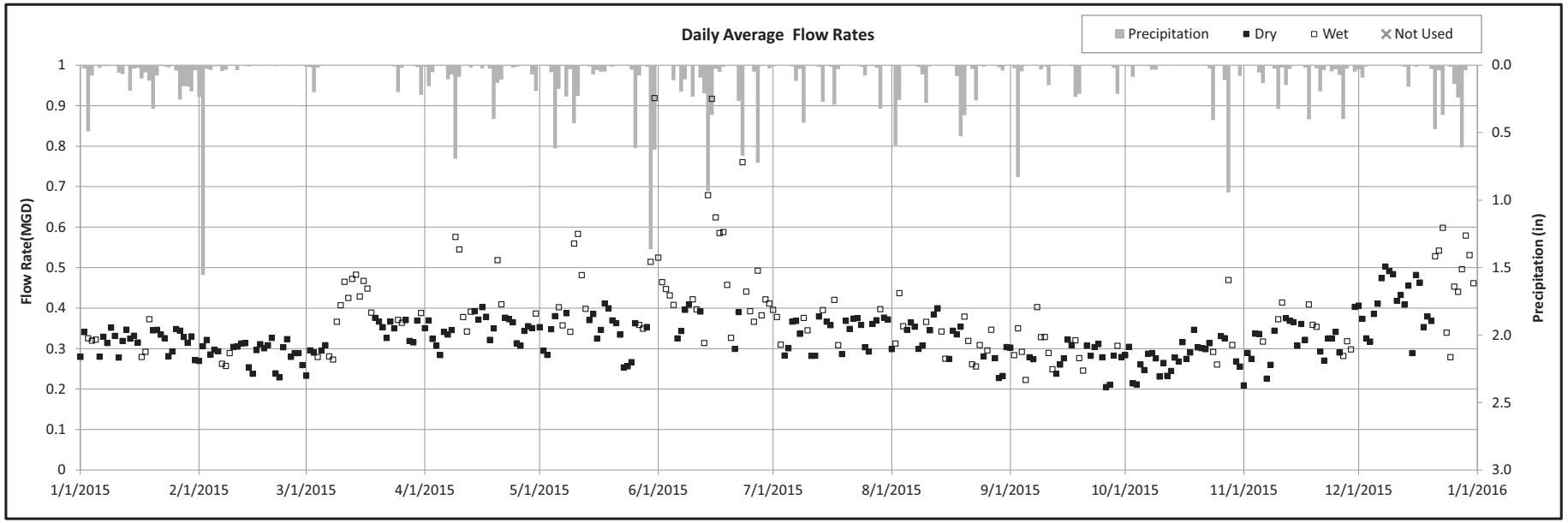
Rouge Valley Sewage Disposal System

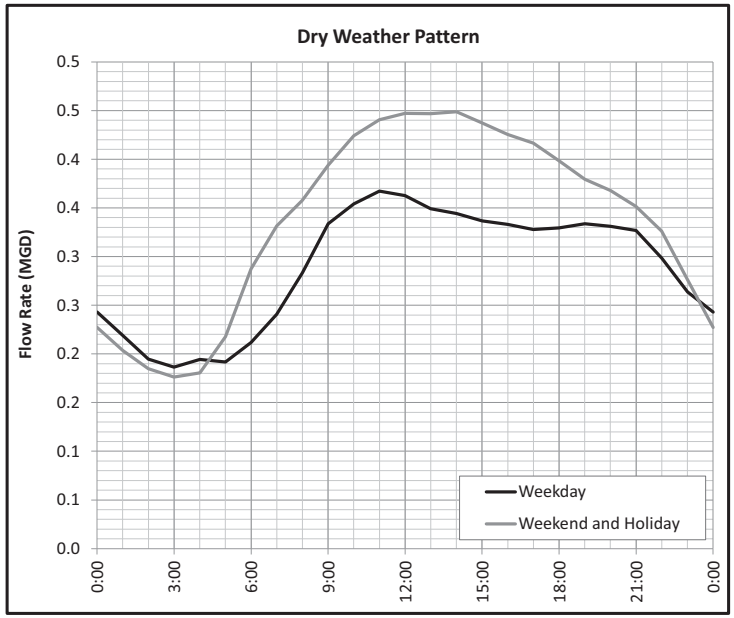
Annual Meter Report

Meter: A
Interceptor Manhole ID: --

Location: Sheldon Road South of North Territorial
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.3	9.9	0.3	9.9	25	6
Feb-15	0.3	8.1	0.3	8.1	25	3
Mar-15	0.4	11.2	0.3	10.2	15	16
Apr-15	0.4	11.1	0.4	10.5	22	8
May-15	0.4	12.1	0.3	10.5	20	11
Jun-15	0.5	13.8	0.4	10.8	7	23
Jul-15	0.4	10.9	0.3	10.5	22	9
Aug-15	0.3	9.9	0.3	9.9	18	13
Sep-15	0.3	8.7	0.3	8.4	17	13
Oct-15	0.3	9.0	0.3	8.7	27	4
Nov-15	0.3	9.6	0.3	9.6	21	9
Dec-15	0.4	13.3	0.4	12.7	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	1.49	4/9/15 18:05	0.69	4/9/15 19:00
2	1.81	5/5/2015	5/11/2015	1.85	5/10/15 14:05	0.76	5/10/15 15:00
3	2.49	5/30/2015	5/31/2015	1.37	5/31/15 7:05	0.67	5/31/15 9:00
4	1.96	6/12/2015	6/18/2015	2.78	6/15/15 14:05	0.97	6/15/15 15:00
5	1.10	6/22/2015	6/23/2015	2.17	6/23/15 0:05	0.85	6/23/15 1:00
6	1.06	8/2/2015	8/3/2015	0.69	8/2/15 23:05	0.49	8/3/15 0:00
7	1.00	8/19/2015	8/20/2015	0.56	8/20/15 0:05	0.44	8/19/15 14:00
8	1.24	10/27/2015	10/29/2015	0.72	10/28/15 8:05	0.50	10/28/15 9:00
9	1.22	12/26/2015	12/29/2015	0.75	12/28/15 23:05	0.56	12/27/15 0:00

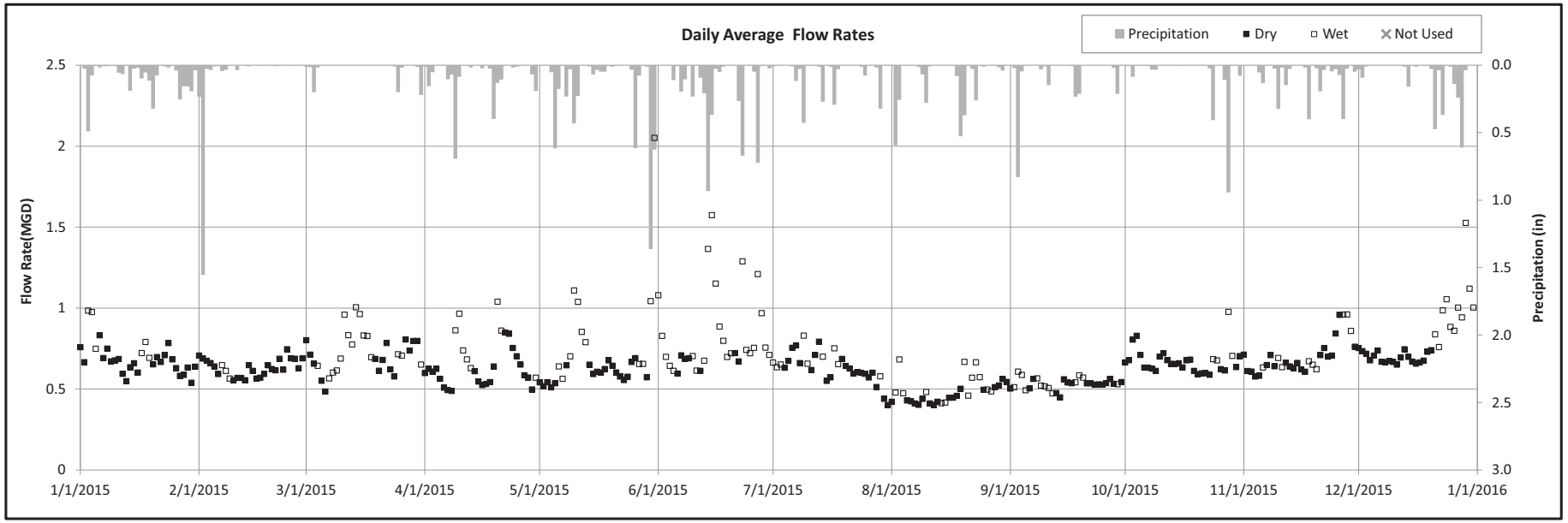
Rouge Valley Sewage Disposal System

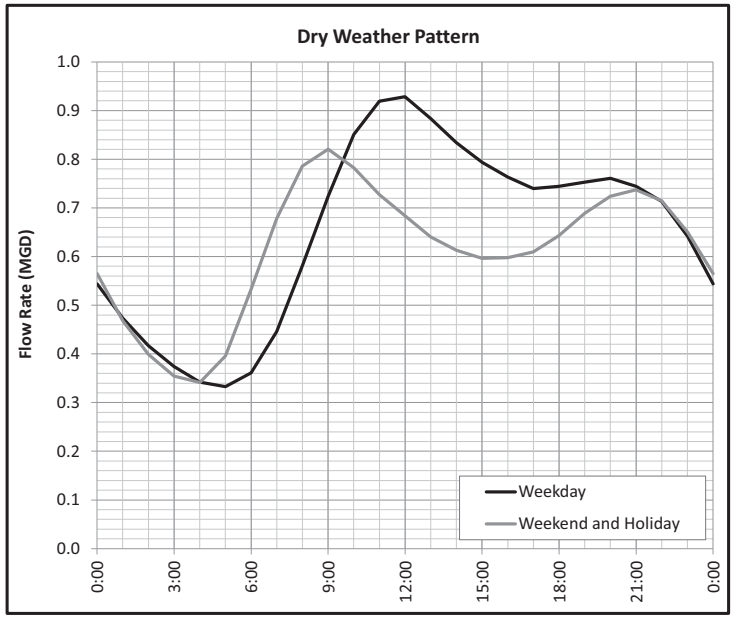
Annual Meter Report

Meter: B
Interceptor Manhole ID: --

Location: Sheldon Road North of Ann Arbor Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.7	21.4	0.7	20.5	25	6
Feb-15	0.6	17.6	0.6	17.6	25	3
Mar-15	0.7	22.3	0.7	21.4	15	16
Apr-15	0.7	19.8	0.6	18.3	22	8
May-15	0.7	22.0	0.6	18.6	20	11
Jun-15	0.8	24.9	0.7	20.1	7	23
Jul-15	0.6	19.8	0.6	19.2	22	9
Aug-15	0.5	15.2	0.5	14.3	18	13
Sep-15	0.5	15.9	0.5	15.9	17	13
Oct-15	0.7	20.8	0.7	20.5	27	4
Nov-15	0.7	21.0	0.7	20.4	21	9
Dec-15	0.8	24.8	0.7	21.7	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	2.02	4/9/15 19:05	0.64	4/9/15 20:00
2	1.81	5/5/2015	5/11/2015	2.91	5/10/15 15:05	0.80	5/10/15 16:00
3	2.49	5/30/2015	5/31/2015	2.75	5/31/15 8:05	0.78	5/31/15 9:00
4	1.96	6/12/2015	6/18/2015	3.14	6/15/15 14:05	0.81	6/15/15 15:00
5	1.10	6/22/2015	6/23/2015	3.56	6/23/15 0:05	0.82	6/23/15 1:00
6	1.06	8/2/2015	8/3/2015	1.35	8/2/15 23:05	0.52	8/3/15 0:00
7	1.00	8/19/2015	8/20/2015	1.16	8/20/15 0:05	0.49	8/20/15 1:00
8	1.24	10/27/2015	10/29/2015	1.40	10/28/15 8:05	0.59	10/28/15 9:00
9	1.22	12/26/2015	12/29/2015	1.92	12/29/15 11:05	0.65	12/29/15 11:00

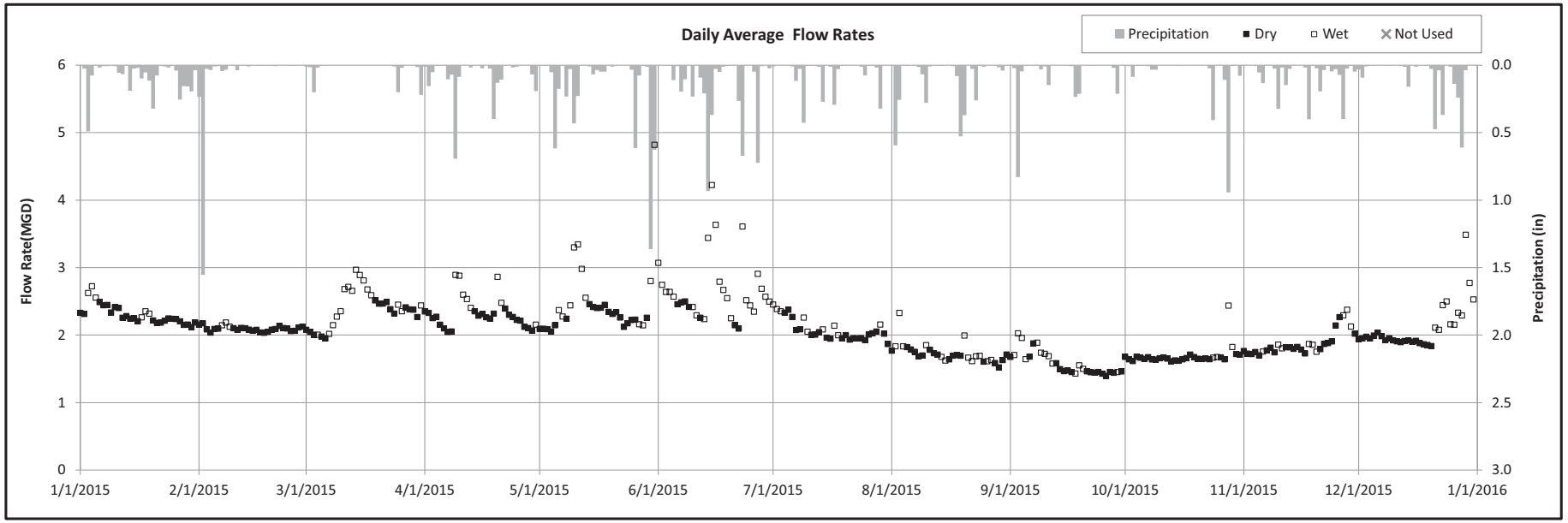
Rouge Valley Sewage Disposal System

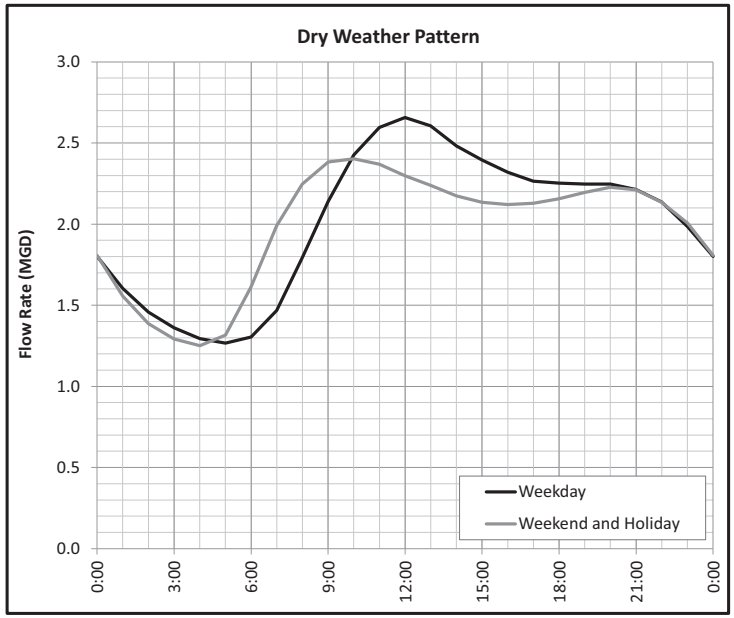
Annual Meter Report

Meter: C
Interceptor Manhole ID: --

Location: Ann Arbor Road West of Lilley Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	2.3	71.6	2.3	70.4	25	6
Feb-15	2.1	58.8	2.1	58.5	25	3
Mar-15	2.4	74.1	2.3	70.7	15	16
Apr-15	2.3	69.9	2.2	66.9	22	8
May-15	2.5	76.3	2.3	70.1	20	11
Jun-15	2.7	80.1	2.3	70.2	7	23
Jul-15	2.1	64.5	2.0	62.9	22	9
Aug-15	1.7	53.6	1.7	52.7	18	13
Sep-15	1.6	47.7	1.5	45.3	17	13
Oct-15	1.7	52.4	1.7	51.5	27	4
Nov-15	1.9	56.4	1.8	55.2	21	9
Dec-15	2.1	65.4	1.9	59.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	6.98	4/9/15 19:05	0.84	4/9/15 20:00
2	1.81	5/5/2015	5/11/2015	7.53	5/10/15 15:05	1.20	5/10/15 16:00
3	2.49	5/30/2015	5/31/2015	6.13	5/31/15 8:05	1.05	5/31/15 9:00
4	1.96	6/12/2015	6/18/2015	8.54	6/15/15 14:05	1.30	6/15/15 15:00
5	1.10	6/22/2015	6/23/2015	6.31	6/23/15 1:05	1.06	6/23/15 2:00
6	1.06	8/2/2015	8/3/2015	3.15	8/2/15 23:05	0.76	8/3/15 0:00
7	1.00	8/19/2015	8/20/2015	2.46	8/20/15 1:05	0.67	8/20/15 2:00
8	1.24	10/27/2015	10/29/2015	3.71	10/28/15 9:05	0.69	10/28/15 10:00
9	1.22	12/26/2015	12/29/2015	5.14	12/29/15 11:05	0.79	12/29/15 11:00

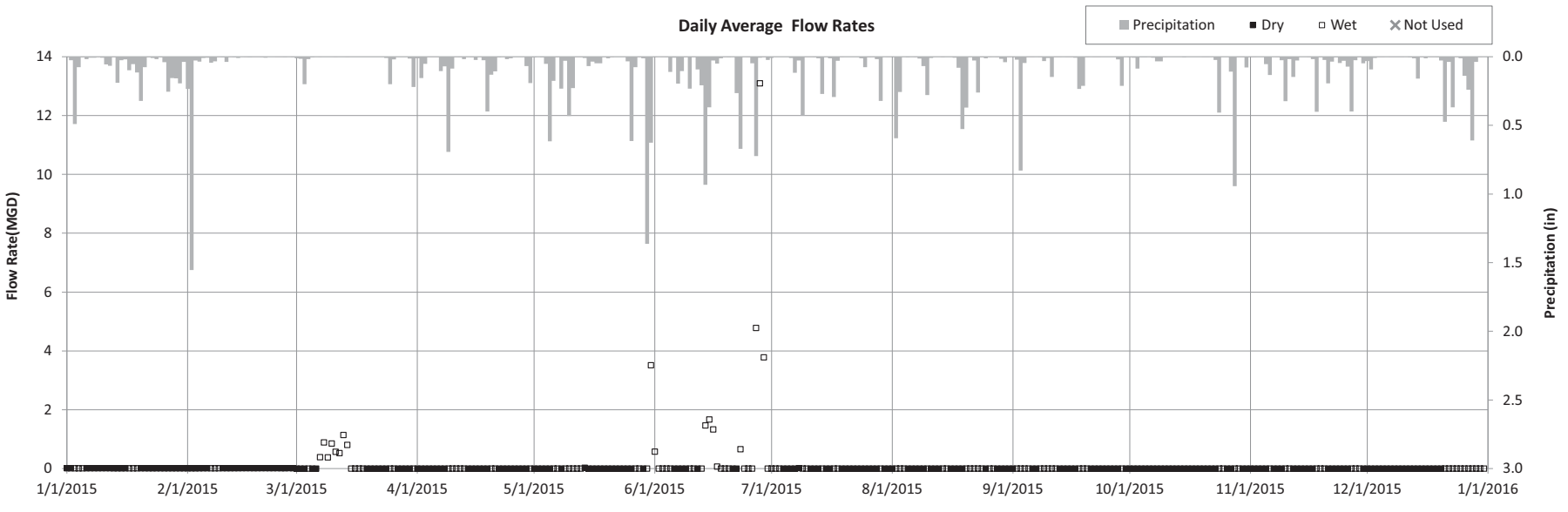
Rouge Valley Sewage Disposal System

Annual Meter Report

Meter: FE-19
Interceptor Manhole ID: --

Location: Haggerty Road North of Michigan Avenue
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015



Dry weather pattern not applicable to this meter

Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	0.0	0.3	0.0	0.3	25	6
Feb-15	0.0	0.3	0.0	0.3	25	3
Mar-15	0.2	5.6	0.0	0.0	15	16
Apr-15	0.0	0.0	0.0	0.0	22	8
May-15	0.1	3.4	0.0	0.0	20	11
Jun-15	0.9	27.3	0.0	0.0	7	23
Jul-15	0.0	0.0	0.0	0.0	22	9
Aug-15	0.0	0.0	0.0	0.0	18	13
Sep-15	0.0	0.0	0.0	0.0	17	13
Oct-15	0.0	0.0	0.0	0.0	27	4
Nov-15	0.0	0.0	0.0	0.0	21	9
Dec-15	0.0	0.0	0.0	0.0	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	0.00	-	-	-
2	1.81	5/5/2015	5/11/2015	0.00	-	-	-
3	2.49	5/30/2015	5/31/2015	4.42	5/31/15 13:05	-	-
4	1.96	6/12/2015	6/18/2015	4.42	6/14/15 20:05	-	-
5	1.10	6/22/2015	6/23/2015	2.10	6/23/15 7:05	-	-
6	1.06	8/2/2015	8/3/2015	0.00	-	-	-
7	1.00	8/19/2015	8/20/2015	0.00	-	-	-
8	1.24	10/27/2015	10/29/2015	0.00	-	-	-
9	1.22	12/26/2015	12/29/2015	0.00	-	-	-

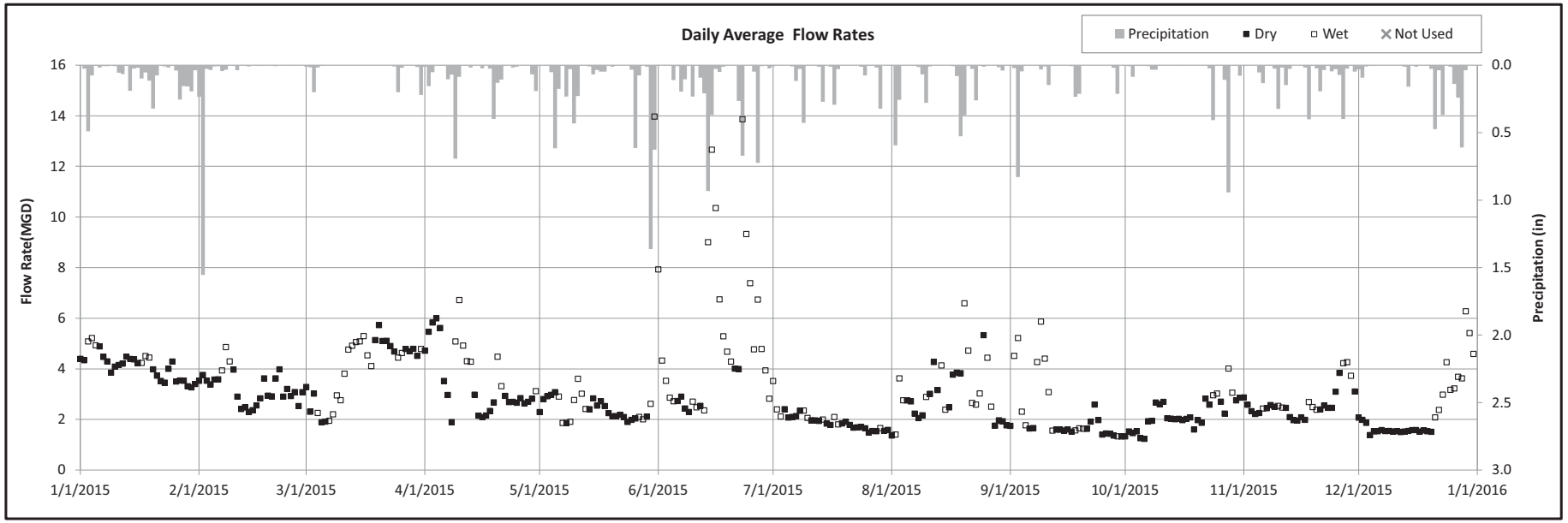
Rouge Valley Sewage Disposal System

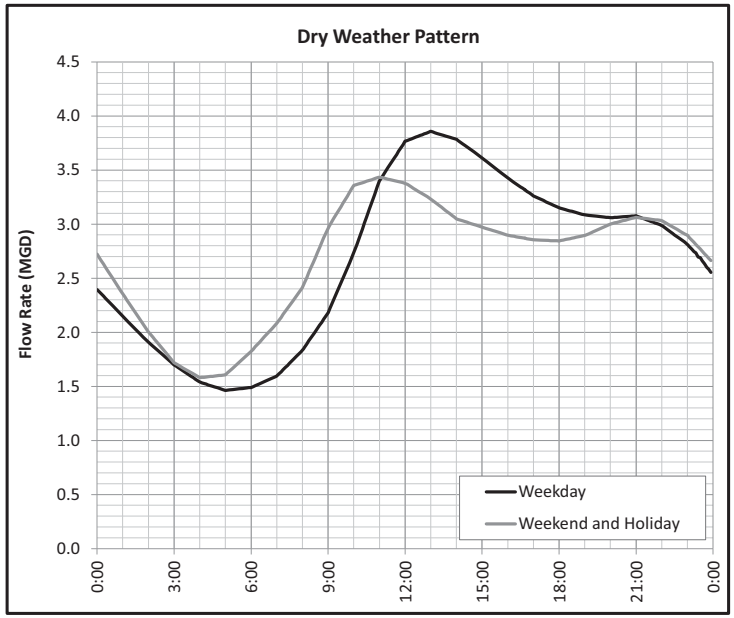
Annual Meter Report

Meter: FE-22
Interceptor Manhole ID: RVI 10-11

Location: Eckles Road and Joy Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	4.1	128.0	4.0	123.7	25	6
Feb-15	3.3	91.0	3.1	87.4	25	3
Mar-15	4.0	125.2	4.1	127.7	15	16
Apr-15	3.6	108.6	3.3	98.7	22	8
May-15	2.8	86.8	2.4	74.1	20	11
Jun-15	5.2	156.3	3.0	89.7	7	23
Jul-15	2.0	60.5	1.8	57.0	22	9
Aug-15	3.0	94.2	2.8	86.8	18	13
Sep-15	2.2	67.2	1.7	49.5	17	13
Oct-15	2.2	68.8	2.1	64.2	27	4
Nov-15	2.7	79.5	2.5	74.7	21	9
Dec-15	2.4	73.5	1.6	49.6	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	15.27	4/9/15 21:00	1.91	4/9/15 21:00
2	1.81	5/5/2015	5/11/2015	8.08	5/6/15 8:30	1.50	5/6/15 9:00
3	2.49	5/30/2015	5/31/2015	20.90	5/31/15 12:20	2.15	5/31/15 13:00
4	1.96	6/12/2015	6/18/2015	21.42	6/15/15 15:50	2.18	6/15/15 16:00
5	1.10	6/22/2015	6/23/2015	16.95	6/23/15 8:40	1.99	6/23/15 9:00
6	1.06	8/2/2015	8/3/2015	5.35	8/3/15 9:45	1.22	8/3/15 10:00
7	1.00	8/19/2015	8/20/2015	9.12	8/20/15 9:55	1.53	8/20/15 10:00
8	1.24	10/27/2015	10/29/2015	6.43	10/28/15 9:25	1.35	10/28/15 10:00
9	1.22	12/26/2015	12/29/2015	7.55	12/29/15 11:55	1.34	12/29/15 11:00

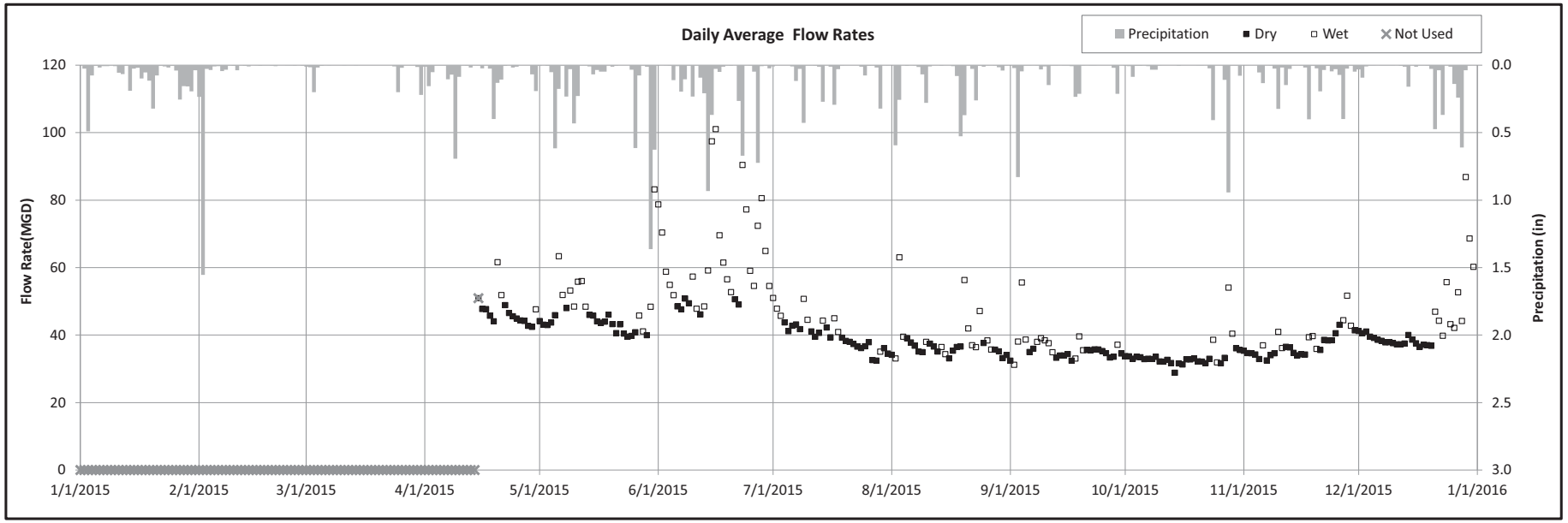
Rouge Valley Sewage Disposal System

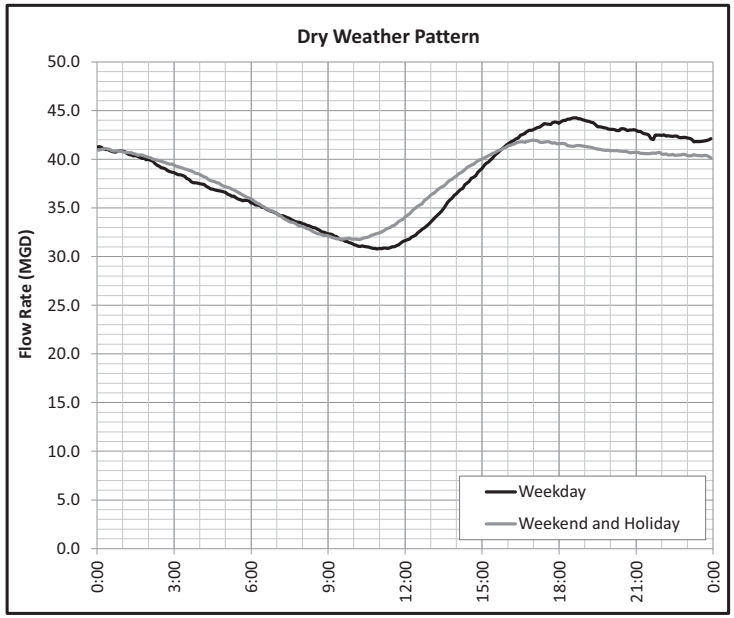
Annual Meter Report

Meter: WC-S-1A
Interceptor Manhole ID: RVI 2-02

Location: Oakwood Boulevard east of Dix Street
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-
Apr-15	47.2	1414.5	45.6	1366.5	13	3
May-15	47.1	1460.7	43.3	1340.8	20	11
Jun-15	62.1	1862.1	48.9	1466.7	7	23
Jul-15	40.5	1256.4	38.7	1199.7	22	9
Aug-15	38.1	1182.0	35.8	1110.1	18	13
Sep-15	36.1	1082.4	34.4	1032.9	17	13
Oct-15	33.9	1049.4	32.8	1015.6	27	4
Nov-15	37.6	1127.1	36.2	1084.5	21	9
Dec-15	43.6	1352.2	38.4	1189.8	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	-	-	-	-
2	1.81	5/5/2015	5/11/2015	80.10	5/6/15 7:10	8.62	5/6/15 5:20
3	2.49	5/30/2015	5/31/2015	92.19	5/31/15 16:40	20.55	5/31/15 5:40
4	1.96	6/12/2015	6/18/2015	112.47	6/16/15 0:20	19.65	6/14/15 17:10
5	1.10	6/22/2015	6/23/2015	104.82	6/23/15 10:15	17.89	6/23/15 4:45
6	1.06	8/2/2015	8/3/2015	79.17	8/3/15 11:15	18.46	8/3/15 2:15
7	1.00	8/19/2015	8/20/2015	71.06	8/20/15 14:55	19.24	8/20/15 4:05
8	1.24	10/27/2015	10/29/2015	73.78	10/28/15 15:25	10.84	10/28/15 8:00
9	1.22	12/26/2015	12/29/2015	95.64	12/29/15 11:55	20.13	12/29/15 2:45

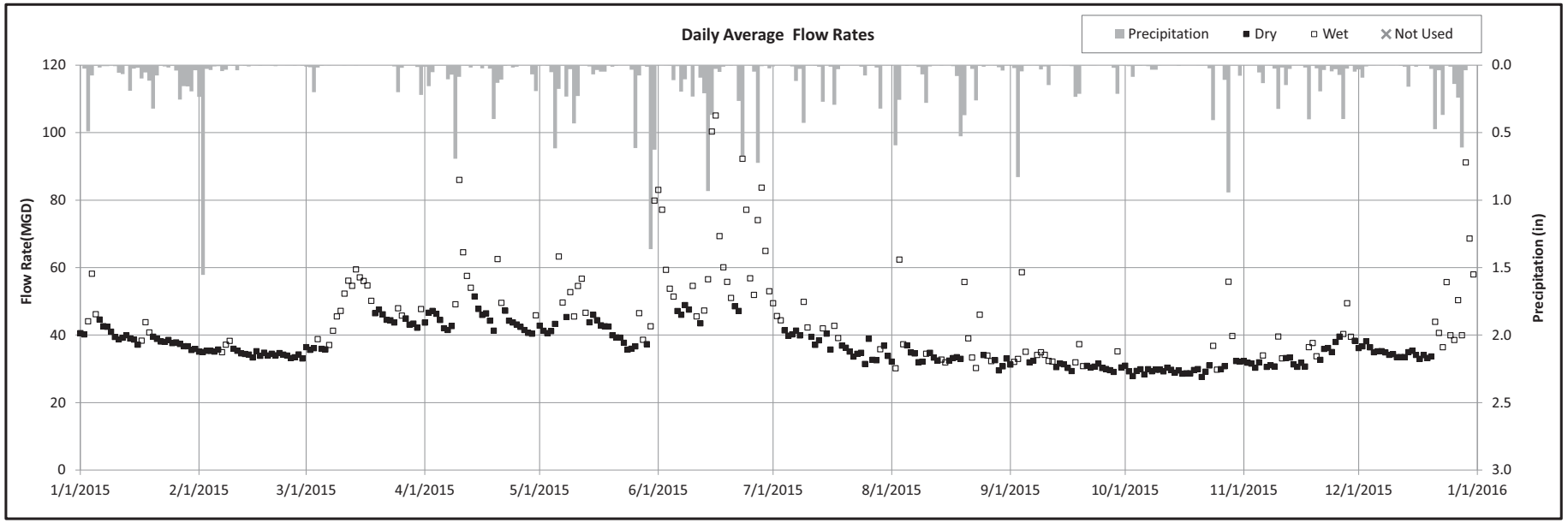
Rouge Valley Sewage Disposal System

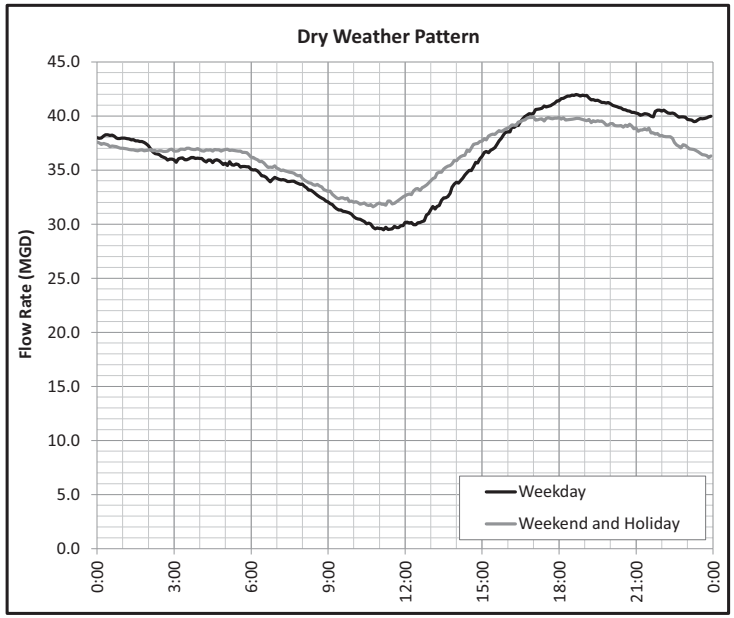
Annual Meter Report

Meter: WC-S-1
Interceptor Manhole ID: MR I 05B

Location: Fort Street and Bayside Street
Interceptor Branch: Lower Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	40.2	1245.9	39.0	1208.1	25	6
Feb-15	34.8	973.0	34.5	966.0	25	3
Mar-15	45.8	1418.3	41.8	1294.6	15	16
Apr-15	48.1	1444.2	44.3	1329.6	22	8
May-15	45.0	1395.3	40.9	1268.8	20	11
Jun-15	61.8	1852.8	47.0	1409.1	7	23
Jul-15	38.8	1202.5	36.9	1143.0	22	9
Aug-15	35.3	1094.6	33.1	1025.2	18	13
Sep-15	32.8	982.8	30.7	920.1	17	13
Oct-15	31.1	962.6	29.6	918.8	27	4
Nov-15	34.7	1040.4	33.2	995.4	21	9
Dec-15	40.6	1258.0	34.7	1076.9	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	97.72	4/10/15 2:20	-	-
2	1.81	5/5/2015	5/11/2015	83.67	5/6/15 7:20	-	-
3	2.49	5/30/2015	5/31/2015	87.40	5/30/15 20:40	-	-
4	1.96	6/12/2015	6/18/2015	117.45	6/16/15 1:55	-	-
5	1.10	6/22/2015	6/23/2015	109.55	6/23/15 9:45	-	-
6	1.06	8/2/2015	8/3/2015	84.94	8/3/15 11:55	-	-
7	1.00	8/19/2015	8/20/2015	80.25	8/20/15 14:55	-	-
8	1.24	10/27/2015	10/29/2015	93.20	10/28/15 12:15	-	-
9	1.22	12/26/2015	12/29/2015	97.51	12/29/15 11:55	-	-

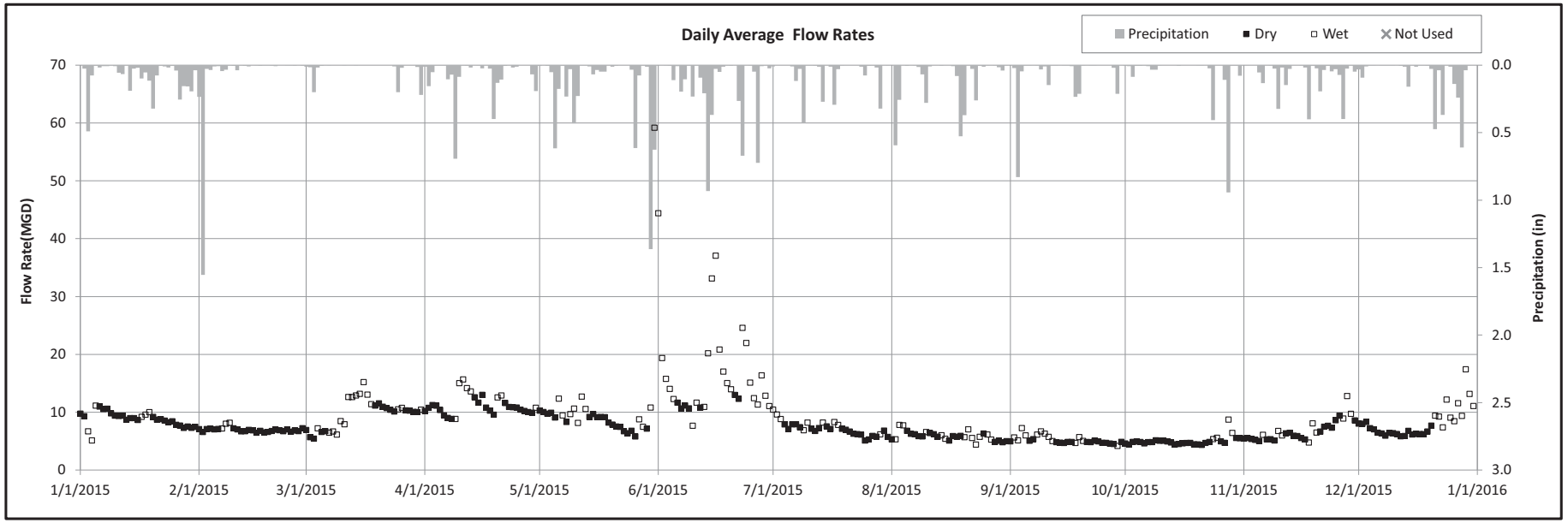
Rouge Valley Sewage Disposal System

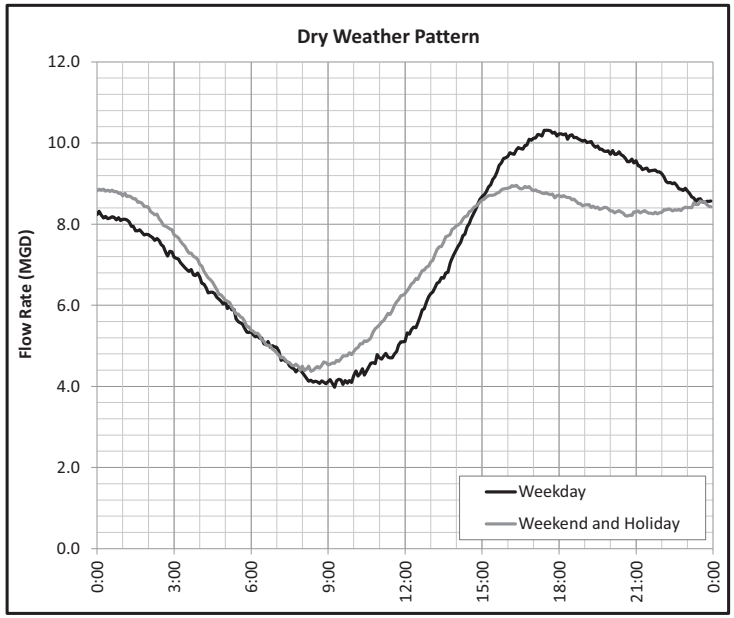
Annual Meter Report

Meter: WC-S-2
Interceptor Manhole ID: MR 1A-C2

Location: Ford Road West of Evergreen Road
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	8.8	273.1	8.9	274.7	25	6
Feb-15	7.0	194.9	6.9	192.1	25	3
Mar-15	9.8	302.3	9.1	283.0	15	16
Apr-15	11.2	337.2	10.6	318.6	22	8
May-15	10.6	327.4	8.4	259.8	20	11
Jun-15	16.6	499.2	11.5	343.8	7	23
Jul-15	7.2	222.6	6.7	208.6	22	9
Aug-15	5.9	182.0	5.7	177.9	18	13
Sep-15	5.2	156.0	4.9	145.5	17	13
Oct-15	5.0	155.3	4.8	148.5	27	4
Nov-15	6.8	203.1	6.4	190.8	21	9
Dec-15	8.1	252.3	6.7	207.7	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	33.11	4/9/15 23:20	-	-
2	1.81	5/5/2015	5/11/2015	17.22	5/6/15 12:45	-	-
3	2.49	5/30/2015	5/31/2015	69.10	5/31/15 10:15	-	-
4	1.96	6/12/2015	6/18/2015	51.95	6/15/15 18:45	-	-
5	1.10	6/22/2015	6/23/2015	39.31	6/23/15 4:55	-	-
6	1.06	8/2/2015	8/3/2015	15.35	8/3/15 4:30	-	-
7	1.00	8/19/2015	8/20/2015	10.41	8/20/15 14:55	-	-
8	1.24	10/27/2015	10/29/2015	13.10	10/28/15 13:35	-	-
9	1.22	12/26/2015	12/29/2015	19.49	12/29/15 4:15	-	-

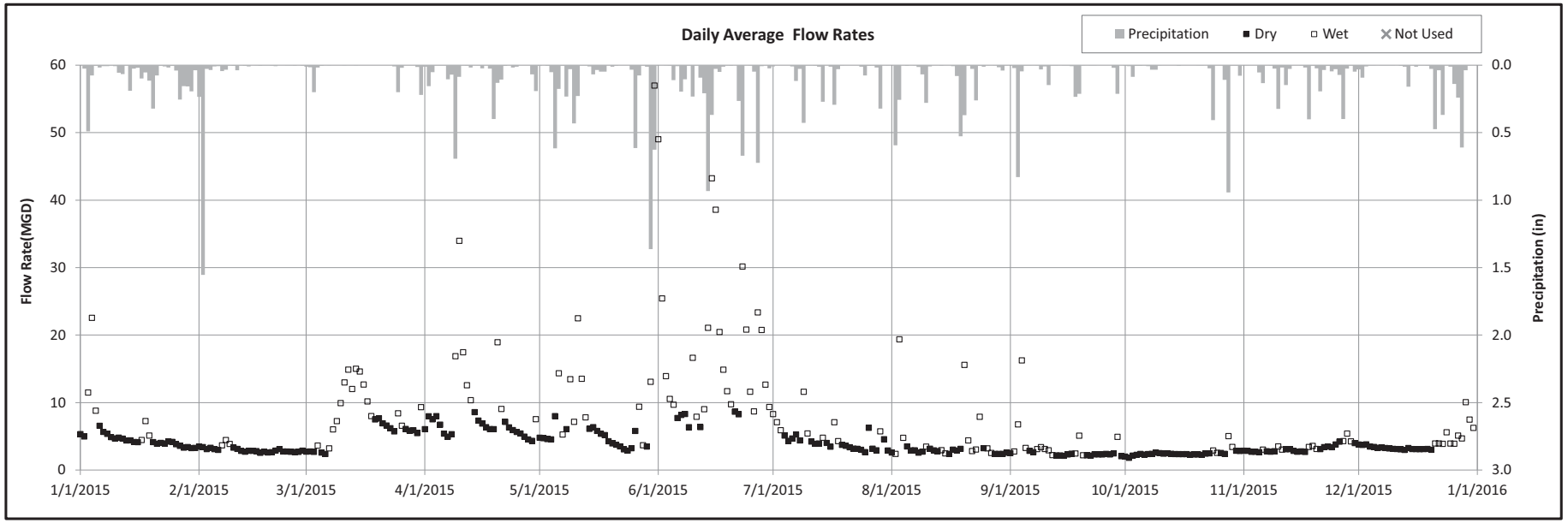
Rouge Valley Sewage Disposal System

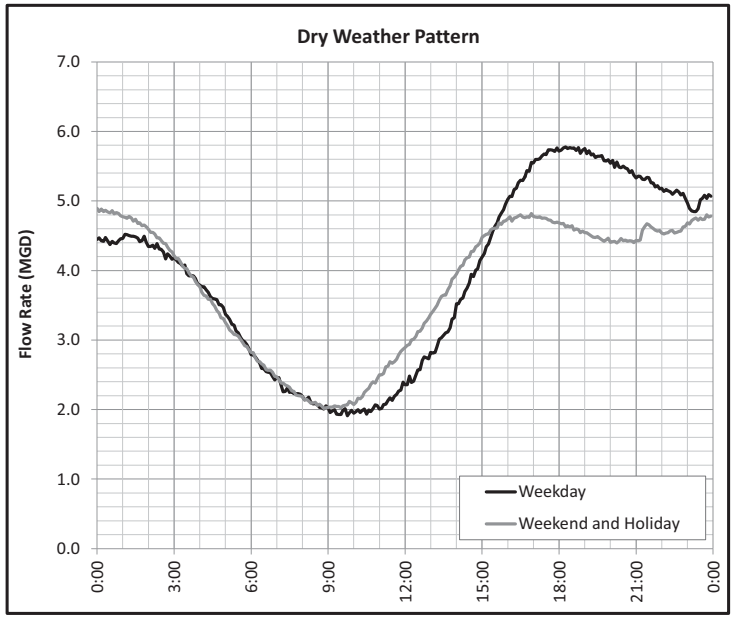
Annual Meter Report

Meter: WC-S-3
Interceptor Manhole ID: MRIR 1-01B

Location: Southfield Road and Mercury Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2015 through 12/31/2015





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (MGD)	Vol. (MG)	Avg. (MGD)	Vol. (MG)	# Dry Days	# Wet Days
Jan-15	5.4	168.6	4.4	135.2	25	6
Feb-15	3.0	84.8	2.9	81.8	25	3
Mar-15	7.5	231.6	5.1	159.3	15	16
Apr-15	8.8	264.3	6.3	187.5	22	8
May-15	8.5	262.6	4.8	147.9	20	11
Jun-15	16.4	492.9	7.7	230.7	7	23
Jul-15	4.7	146.0	3.9	120.9	22	9
Aug-15	4.1	125.6	2.8	87.1	18	13
Sep-15	3.3	98.1	2.3	70.2	17	13
Oct-15	2.5	78.1	2.4	73.8	27	4
Nov-15	3.3	98.4	3.1	92.4	21	9
Dec-15	4.0	124.3	3.3	101.4	20	11

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (MGD)	Date/Time	Max. (ft)	Date/Time
1	1.06	4/7/2015	4/10/2015	45.63	4/9/15 23:35	-	-
2	1.81	5/5/2015	5/11/2015	30.72	5/11/15 19:55	-	-
3	2.49	5/30/2015	5/31/2015	63.01	5/31/15 9:30	-	-
4	1.96	6/12/2015	6/18/2015	56.95	6/15/15 19:05	-	-
5	1.10	6/22/2015	6/23/2015	37.80	6/23/15 7:20	-	-
6	1.06	8/2/2015	8/3/2015	31.47	8/3/15 4:35	-	-
7	1.00	8/19/2015	8/20/2015	27.07	8/20/15 5:50	-	-
8	1.24	10/27/2015	10/29/2015	7.71	10/28/15 13:35	-	-
9	1.22	12/26/2015	12/29/2015	11.55	12/29/15 4:20	-	-

Appendix A

System Reach Maps

WESTLAND
WAYNE
ROMULUS
PALMER
GLENWOOD
MICHIGAN AVE
VAN BORN
ECORSE
ANNAPOLIS
HANNAN
NEWBURGH
HAGGERTY
4TH STREET
VENOY
HENRY RUFF
COGWELL
MATCH LINE - FIGURE A2

WTUA LOWER ROUGE EQUALIZATION BASIN
FE-19
TO RVSDS
TO YCUA
WTUA CONNECTION
WTUA-LR
WE-25
P-17
P-19
P-15
WAYNE EQUALIZATION BASIN
Reg 51 (L-37)
Reg 53 (L-35)
Reg 52 (L-34)
Reg 50 (L-36)
WAYNE COUNTY AIRPORT AUTHORITY (WCAA) CONNECTION
WCAA FORCEMAIN
24 INDIVIDUAL LEADS ON BOTH SIDES OF COGSWELL

GRAPHIC SCALE
1,000 0 1,000
1" = 1,000'

LEGEND

- REGULATOR
- FLOW METER
- JUNCTION
- (1) JUNCTION ID
- [X-XX] LINE CONNECTION ID
- COMMUNITY SEWER
- WAYNE-ROMULUS-VAN BUREN INTERCEPTOR (W-R-V I)
- WAYNE INTERCEPTOR (WI-1)
- WAYNE INTERCEPTOR EXTENSION (WIE)
- LOWER ROUGE INTERCEPTOR RELIEF (LRIR)
- ROUGE VALLEY INTERCEPTOR (RVI)
- WAYNE COUNTY SEWER
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY
- RETENTION TREATMENT BASIN (RTB)

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

LOWER ROUGE INTERCEPTOR SCHEMATIC HANNAN TO VENOY

SYSTEM MONITORING PLAN
FIGURE A1 OF 8

REVISION DATE: NOVEMBER 24, 2015

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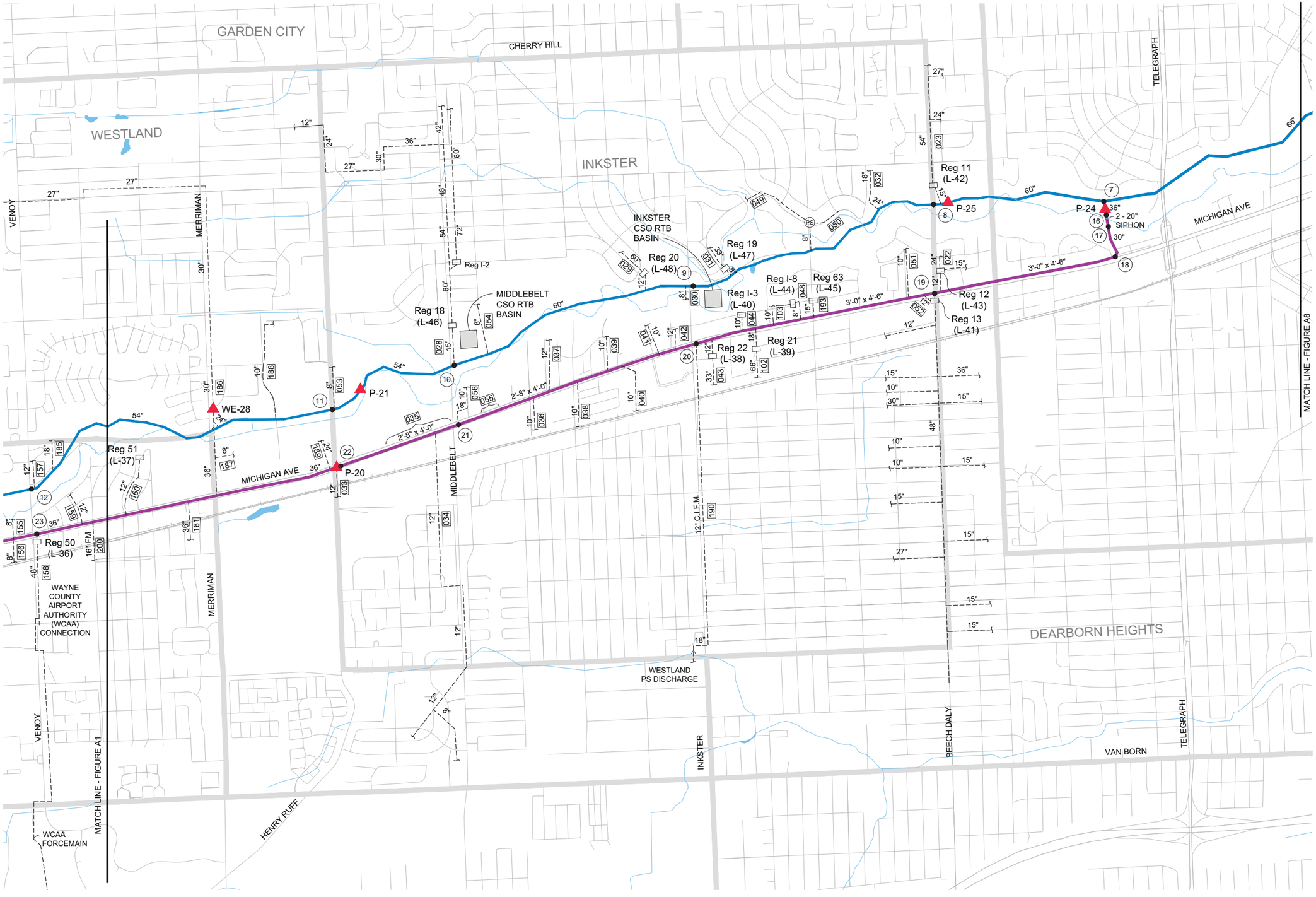

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GRAPHIC SCALE
1,000 0 1,000
1" = 1,000'

LEGEND

- REGULATOR
- FLOW METER
- JUNCTION
- (1) JUNCTION ID
- X-XX LINE CONNECTION ID
- COMMUNITY SEWER
- WAYNE-ROMULUS-VAN BUREN INTERCEPTOR (W-R-V I)
- WAYNE INTERCEPTOR (WI-1)
- WAYNE INTERCEPTOR EXTENSION (WIE)
- LOWER ROUGE INTERCEPTOR RELIEF (LRIR)
- ROUGE VALLEY INTERCEPTOR (RVI)
- WAYNE COUNTY SEWER
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY
- RETENTION TREATMENT BASIN (RTB)

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

LOWER ROUGE INTERCEPTOR SCHEMATIC VENOY TO TELEGRAPH

SYSTEM MONITORING PLAN
FIGURE A2 OF 8

REVISION DATE: NOVEMBER 24, 2015

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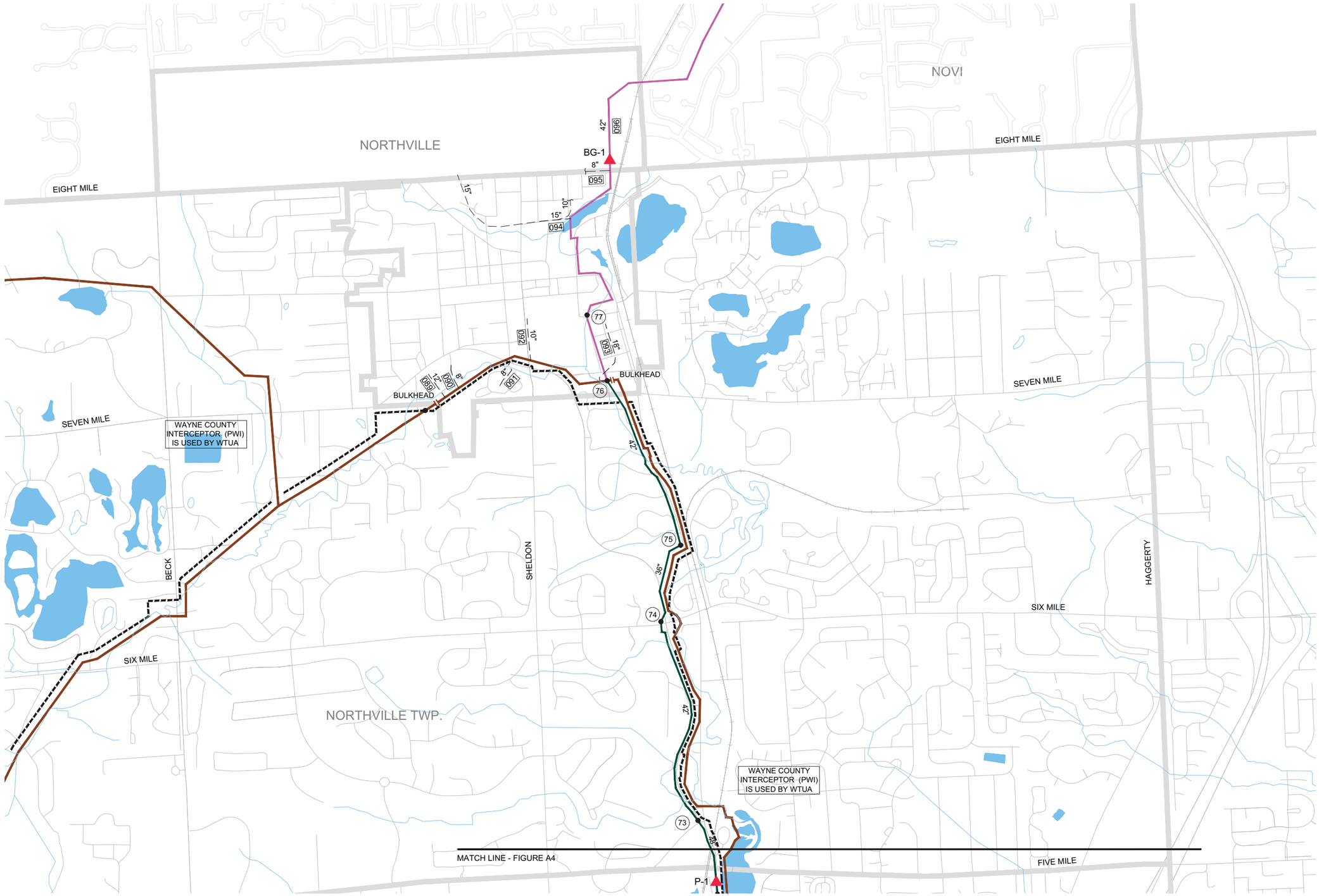

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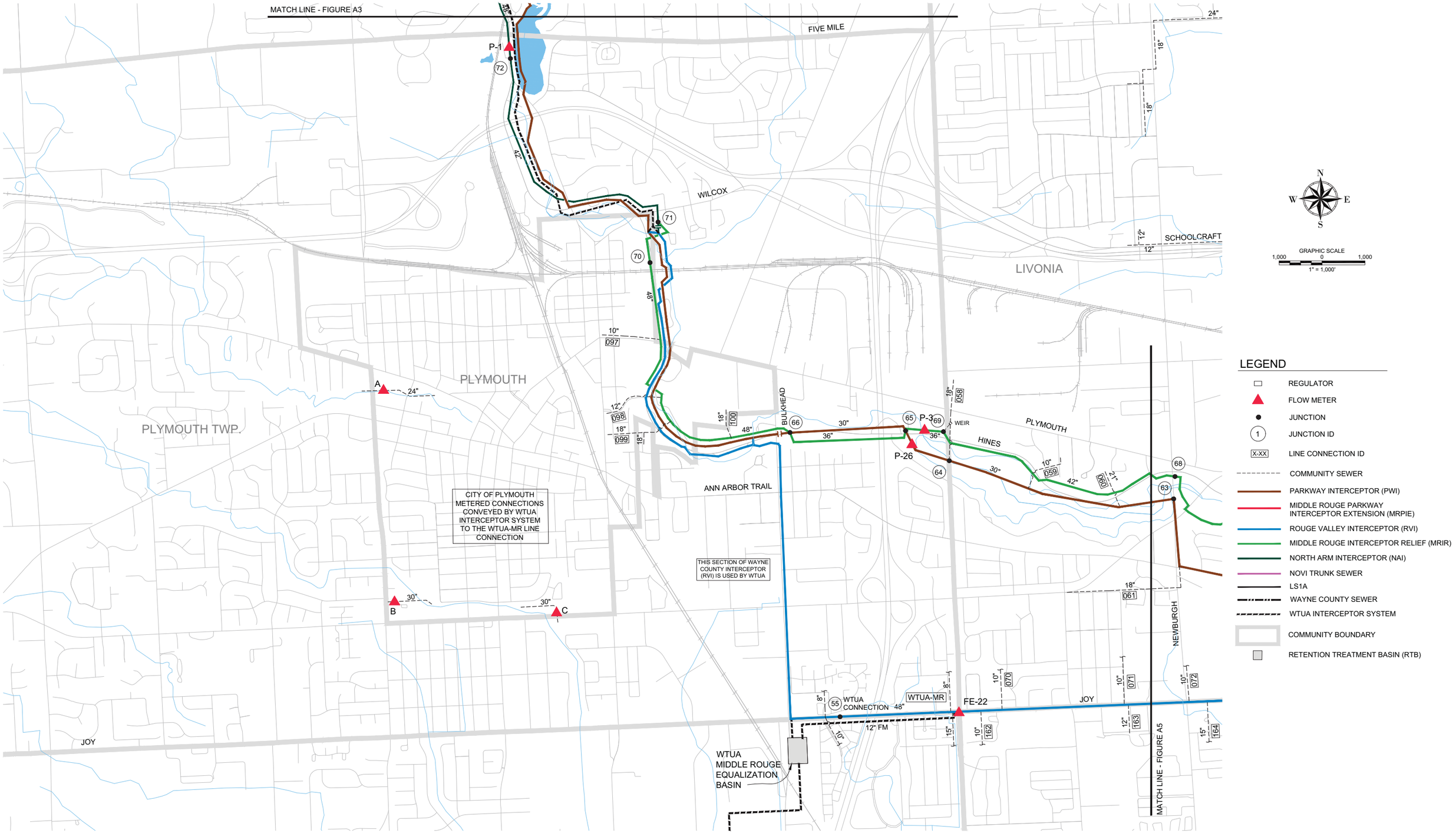
ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC NORTHVILLE TO 5 MILE ROAD

SYSTEM MONITORING PLAN

FIGURE A3 OF 8

REVISION DATE: NOVEMBER 24, 2015



ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC
5 MILE ROAD TO NEWBURGH

SYSTEM MONITORING PLAN

FIGURE A4 OF 8

REVISION DATE: NOVEMBER 24, 2015

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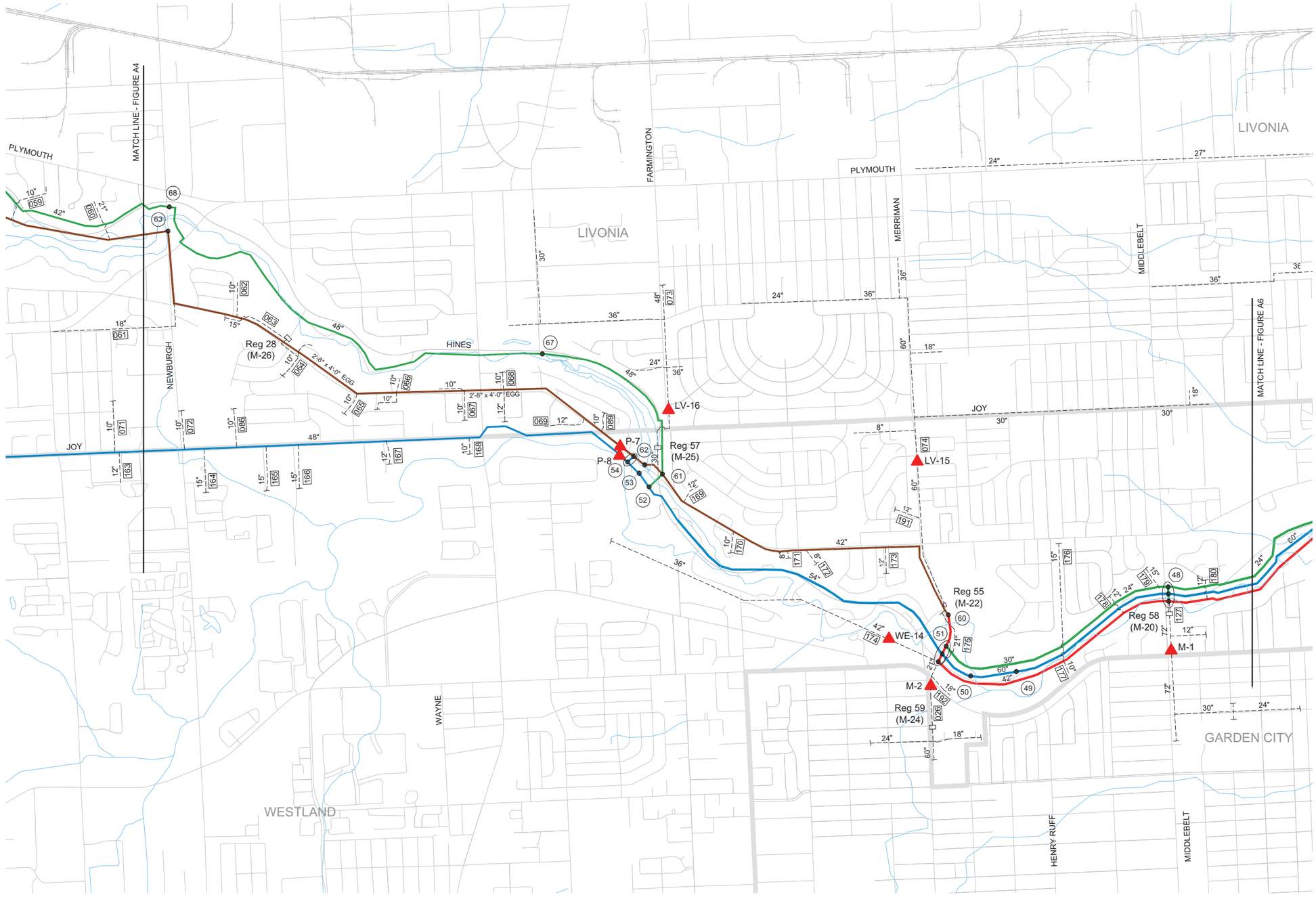

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC NEWBURGH TO MIDDLEBELT

SYSTEM MONITORING PLAN

FIGURE A5 OF 8

REVISION DATE: FEBRUARY 24, 2015

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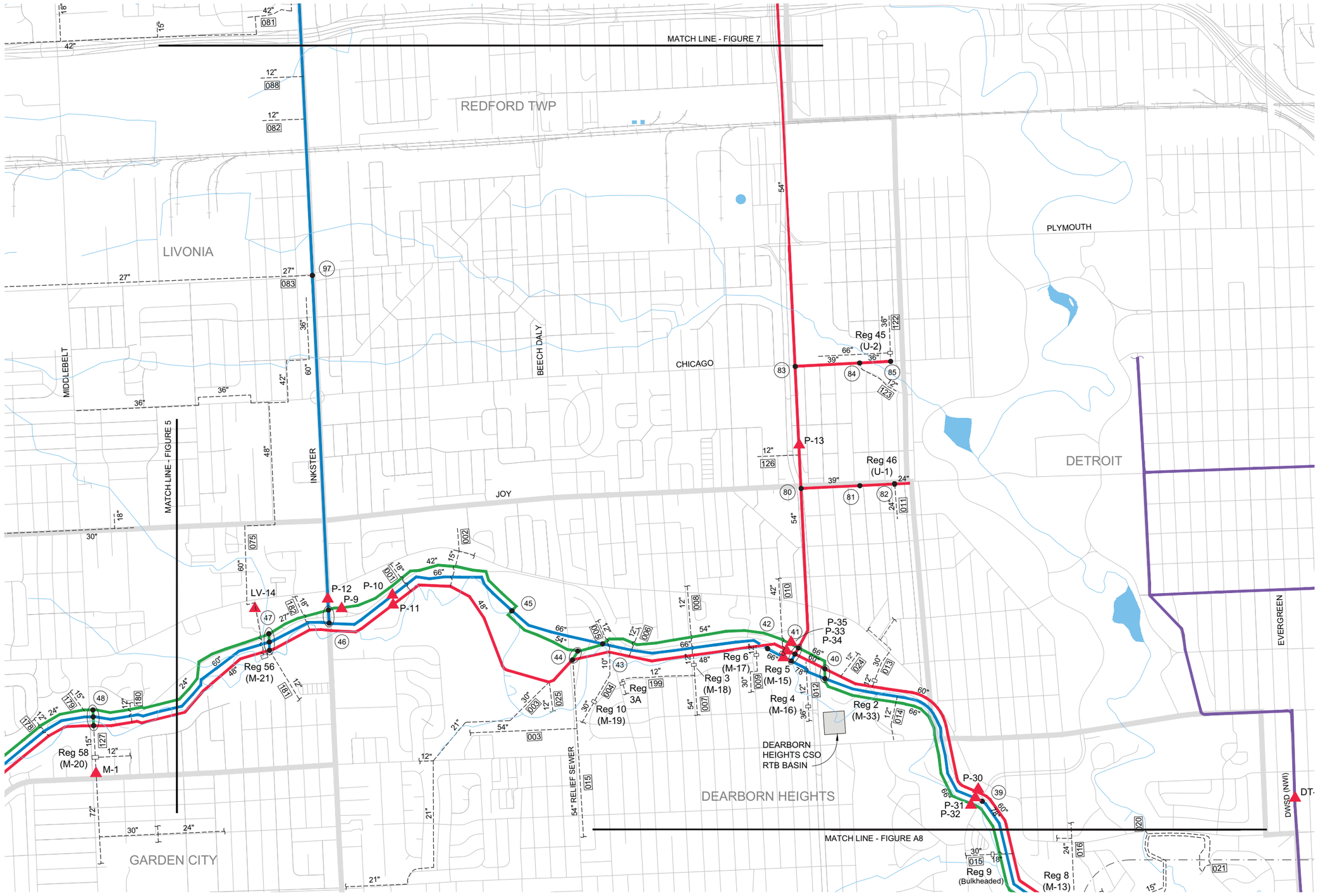

LEGEND

- REGULATOR
- FLOW METER
- JUNCTION
- (1) JUNCTION ID
- [X-XX] LINE CONNECTION ID
- COMMUNITY SEWER
- PARKWAY INTERCEPTOR (PWI)
- MIDDLE ROUGE PARKWAY INTERCEPTOR EXTENSION (MRPIE)
- ROUGE VALLEY INTERCEPTOR (RVI)
- MIDDLE ROUGE INTERCEPTOR RELIEF (MRIR)
- NORTH ARM INTERCEPTOR (NAI)
- NOVI TRUNK SEWER
- LS1A
- WAYNE COUNTY SEWER
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY
- RETENTION TREATMENT BASIN (RTB)

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC MIDDLEBELT TO OUTER DRIVE

SYSTEM MONITORING PLAN

FIGURE A6 OF 8

REVISION DATE: NOVEMBER 24, 2015

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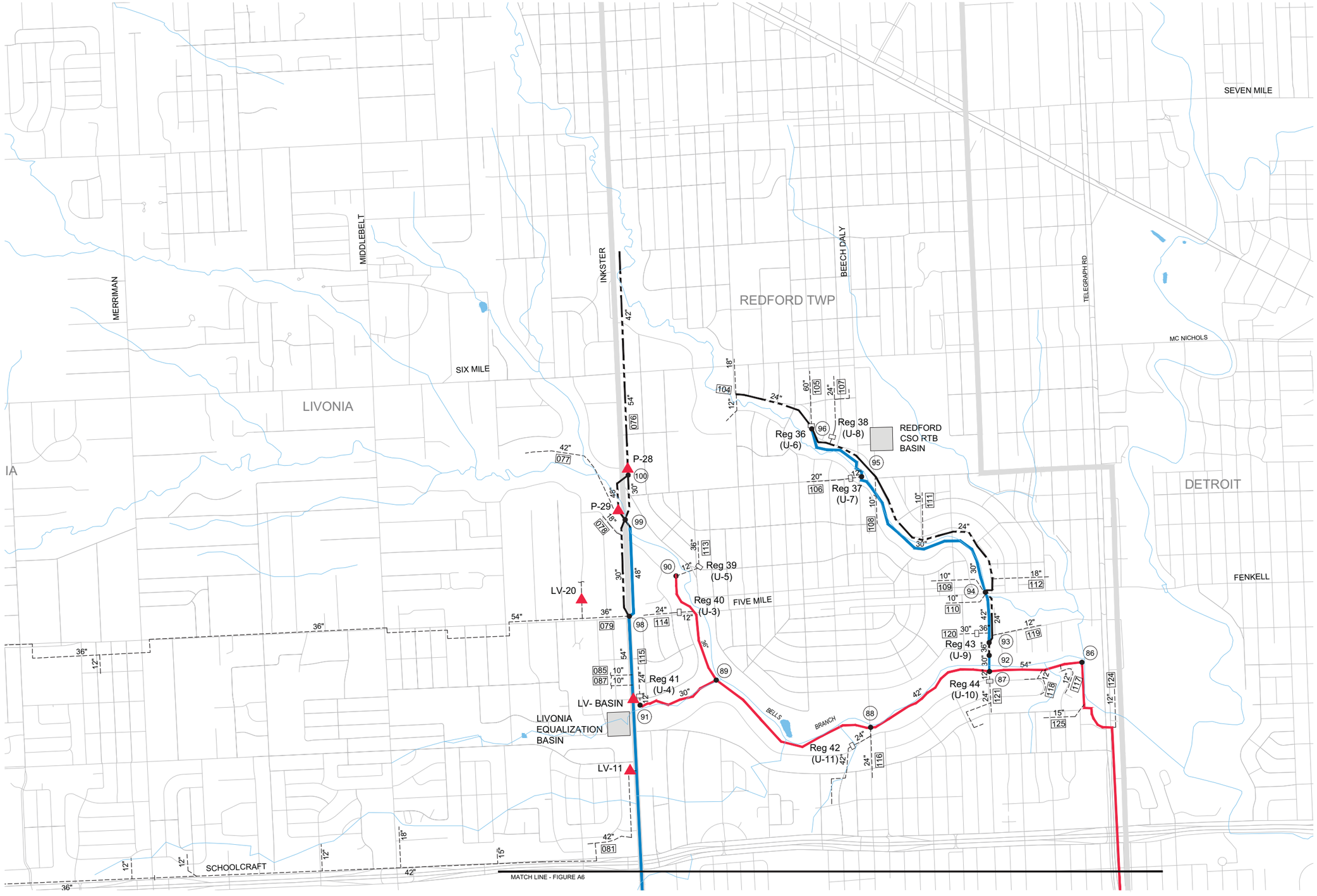

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GRAPHIC SCALE
1,000 0 1,000
1" = 1,000'

LEGEND

- REGULATOR
- FLOW METER
- JUNCTION
- (1) JUNCTION ID
- [X-XX] LINE CONNECTION ID
- COMMUNITY SEWER
- PARKWAY INTERCEPTOR (PWI)
- MIDDLE ROUGE PARKWAY INTERCEPTOR EXTENSION (MRPIE)
- ROUGE VALLEY INTERCEPTOR (RVI)
- MIDDLE ROUGE INTERCEPTOR RELIEF (MRIR)
- NORTH ARM INTERCEPTOR (NAI)
- NOVI TRUNK SEWER
- LS1A
- WAYNE COUNTY SEWER
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY
- RETENTION TREATMENT BASIN (RTB)

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC
INKSTER AND REDFORD ARMS

SYSTEM MONITORING PLAN
FIGURE A7 OF 8

REVISION DATE: NOVEMBER 24, 2015

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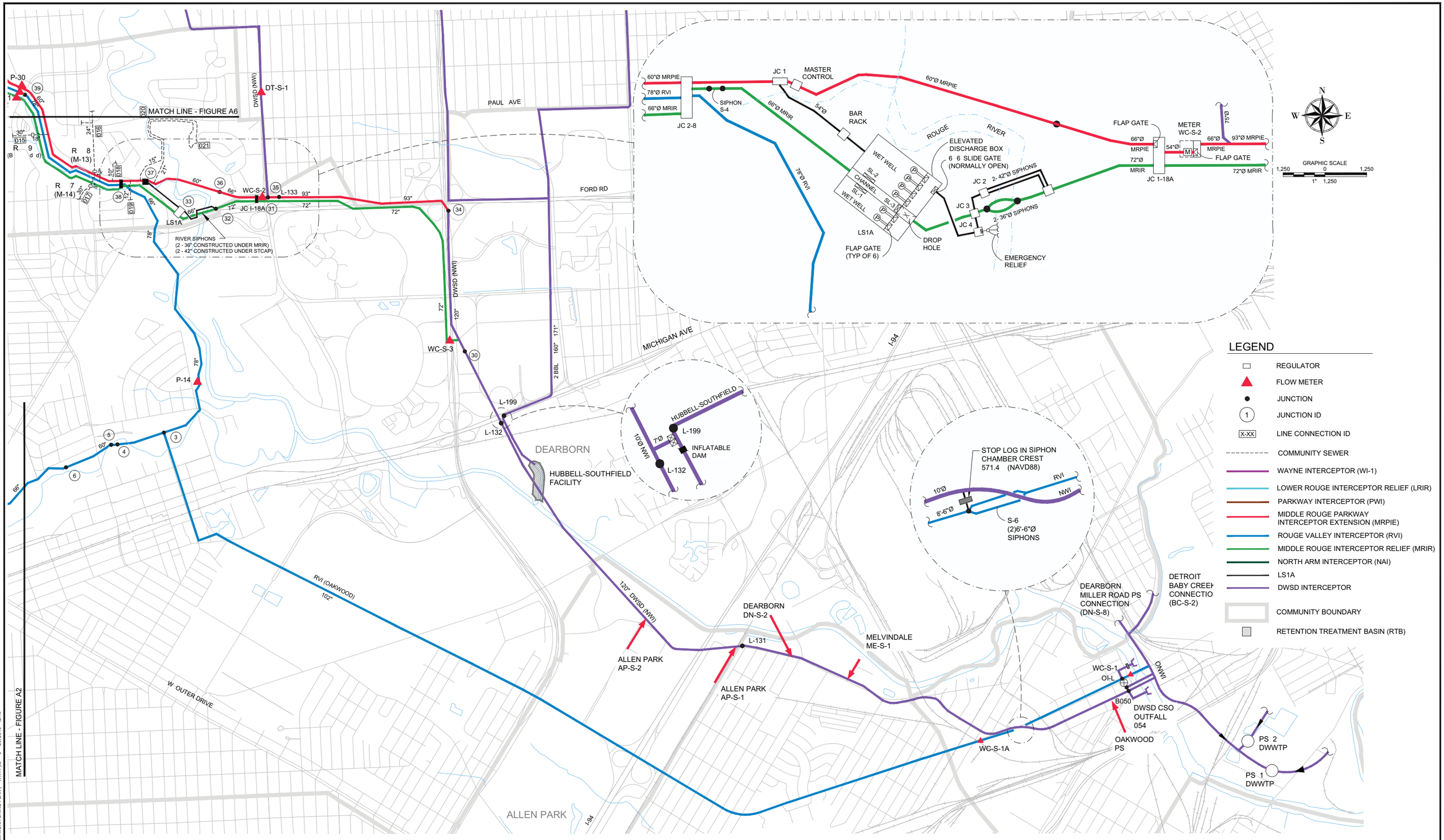

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM
INTERCEPTOR SYSTEM SCHEMATIC
DOWNSTREAM END OF SYSTEM

SYSTEM MONITORING PLAN
FIGURE A8 OF 8

REVISION DATE: JANUARY 20, 2016

K: DWGF 2014-1404 RVSDS SYSTEM MONITORING PLAN (WWTP).d J 20, 2016 - 12:49