Wayne County Rouge Valley Sewage Disposal System

Annual System Monitoring Report for 2017

Report to Wayne County and Communities

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Table of Contents

Section		Page
1)	Noteworthy Items	1
2)	Monitoring Network	10
3)	Per-Capita Flow Rate at Key Locations	16
4)	Customer Flow Summaries	18
5)	Maximum Hourly Flow Rates for Significant Storm Events by Customer	21
6)	Summary of Rainfall Events	31
7)	Peak Hydraulic Gradeline Summary	33
8)	Rainfall Event Summary Tables	43
9)	Dry/Wet Weather Day Count by Month	53
10)	Flow Rate Data Flags	55
11)	Data Edits	57
12)	System Flow Rate Checks	59
13)	Annual Meter Reports	63
Appendix A - System Reach Maps		110

List of Tables

Table 1-1	Dye-Dilution Test Summary
Table 1-2	Maximum Allowable Flow Limit Exceedences for Significant Storm Events in 2017
Table 1-3	Rouge River Flood Frequency in the 2017 Monitoring Period
Table 1-4	Monthly Volume Comparison
Table 1-5	Average Annual Flow Rate and Volume by Customer for 2017
Table 2-1	Flow Monitoring Meters
Table 2-2	Rain Gages
Table 3-1	Average Per-Capita Flow Rate at Key Locations
Table 3-2	Average Per-Capita Dry Weather Flow Rate at Key Locations
Table 4-1	Monthly Average Flow Rate by Customer Using Incremental Sewage Flow Meter Math
Table 4-2	Monthly Average Dry Weather Flow Rate by Customer Using Incremental Sewage Flow Meter Math
Table 5-1	Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017 Using Incremental Sewage Flow Meter Math
Table 6-1	Summary of Rainfall Events
Table 7-1	Peak Hydraulic Gradeline Summary
Table 8-1	Rainfall Event Summary Table
Table 9-1	Dry/Wet Weather Day Count by Month
Table 11-1	Notable Data Edits
Table 12-1	Flow Rate Continuity Check
Table 12-2	Monthly Average Dry Weather Flow Rate Versus Residential Population Check

List of Figures

Figure 2-1	Interceptor Schematic
Figure 2-2	Meter District and Line Connection Areas
Figure 2-3	Rain Gage Location Map
Figure 10-1	2017 Flow Rate Flags
Figure 12-1	End of System Monthly Flow Rate Comparison
Figure 13	Annual Meter Report
Figure A1	Lower Rouge Interceptor Schematic Hannon to Venoy
Figure A2	Lower Rouge Interceptor Schematic Venoy to Telegraph
Figure A3	Middle Rouge Interceptor Schematic Northville to 5 Mile Road
Figure A4	Middle Rouge Interceptor Schematic 5 Mile Road to Newburgh
Figure A5	Middle Rouge Interceptor Schematic Newburgh to Middlebelt
Figure A6	Middle Rouge Interceptor Schematic Middlebelt to Outer Drive
Figure A7	Middle Rouge Interceptor Schematic Inkster and Redford Arms
Figure A8	Interceptor System Schematic Downstream End of System

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 2017. This report supersedes and consolidates the information in the four (4) quarterly reports previously issued for 2017. It 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 2017. 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 2017 system monitoring are presented below.

1. In 2017, dye-dilution testing was 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 results of all applicable dye-dilution tests of RVSDS flow meters for year 2017 data have been updated to include the results of these tests and are shown in Table 1-1 for reference. The data presented in this annual report reflects the results of these dye-dilution tests. 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.
2. Over the year, the flow meters and level sensors in the RVSDS operated and provided useful data for 94.6% of the period.
3. The total precipitation at the Detroit Metropolitan Wayne County Airport (DTW) for the year was 35.46 inches, which is 1.99 inches above normal.
4. There were nine significant storm events during the year. A summary of these events is presented in Table 6-1. Total rainfall values for each rain gage and each event are presented in Table 8-1.
5. A summary of maximum allowable flow limit exceedences by community during significant storm events for 2017 are listed in Table 1-2. Plymouth City, Garden City and Dearborn Heights exceeded the maximum allowable flow limits for at least one significant storm event in 2017. Oakland County (Novi), Northville City, Livonia, Westland, Redford Township, Van Buren Township, Romulus, Wayne Inkster and the Western Townships Utilities Authority (WTUA) did not exceed the maximum allowable flow limits for any of the significant storm events in 2017.
6. On April 21, 2017 the average daily dry weather flow rate from WTUA Meter FE-22 decreased from about 5 cfs to 1 cfs. WTUA has not sent any significant wet weather flow to the RVSDS from Meter FE-22 since the May 4-5, 2017 event.
7. The average daily dry weather flow rate through WTUA Meter FE-19 is typically zero. WTUA has not sent any significant wet weather flow to the RVSDS from Meter FE-19 since the May 4-5, 2017 event.
8. WTUA has not reported its flow split between the Ypsilanti Community Utility Authority (YCUA) and the RVSDS to Wayne County for year 2017. It is assumed that from April 21, 2017 through the end of the reporting period (December 31, 2017):
    - WTUA diverted most of the wastewater flow from their service area within the RVSDS to YCUA;

- WTUA continued to send all flow from line connections 102, 103, 194 and 195 (downstream of the WTUA Middle Rouge Equalization Basin) to the RVSDS through Meter FE-22;
- The flow from line connections 102, 103, 194 and 195 is the only flow from Meter District FE-22 that was transported to the RVSDS after the May 4-5, 2017 event.
- WTUA transported the Meter District [C-B-A] portion of City of Plymouth flow to YCUA instead of the RVSDS;
- Flow from small portions of Northville Township continued to be delivered to RVSDS (these areas are not individually metered and are part of the larger Meter District P-1);
- WTUA transported flow from small portions of the City of Northville to YCUA instead of the RVSDS (these areas are not individually metered and are part of the larger Meter District FE-22)

9. Table 1-3 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 1, on March 1, 2017. The estimated flood frequency for the Middle Rouge River for this event was 12 months (1 year). The peak flow rate and return frequency on the Lower Rouge River occurred during Event 2, on March 31, 2017. The estimated flood frequency for the Lower Rouge River for this event was 15 months (1.25 year).
10. The United States Geological Survey (USGS) stream gage #04167000 is located on the Middle Rouge River at Inkster Road in Garden City and has about 87 years of record. USGS stream gage #04168000 is located on the Lower Rouge River at John Daly Road in Inkster and has about 69 years of record. Data collection at USGS stream gage #04168000 was discontinued on September 30, 2016. The USGS has shifted hydrologic studies on the Lower Rouge River to USGS stream gage #04168400 which is located on the Lower Rouge River at Military Road in Dearborn and has about 15 years of record. USGS stream gage #04168400 is approximately three miles downstream of USGS stream gage #04168000.
11. On August 24, 2017 Meter WC-S-1A was moved because Marathon Petroleum Corporation annexed the section of Oakwood Boulevard west of Dix Street where the meter was installed which restricted access to the site. The new meter location is located along Oakwood Boulevard between Schaefer Road and Dix Street, one manhole upstream of the original meter location. No data is available for Meter WC-S-1A from May 7, 2017 through August 24, 2017 due to restricted access to the Marathon Petoleum Corporation property. The period of missing data for Meter WC-S-1A was estimated using a correlation to the sum of the upstream flow Meters P-14+P-24+P-25. The new metering location is providing better flow meter data than the previous metering location.
12. Flow Meters WC-S-1, WC-S-2 and WC-S-3 are owned by Wayne County and operated by the Great Lakes Water Authority (GLWA). Each of these meters was out-of-service for most the year. On June 10, 2016, the meter electronics for Meter WC-S-1 failed. The electronics have not been repaired/replaced and GLWA is reviewing meter replacement options. As a result, Meter WC-S-1 was out-of-service for all of year 2017. Meter WC-S-2 was also out-of-service for all of year 2017. Meter WC-S-3 was out-of-service from June 1, 2017 through October 1, 2017.

13. GLWA and Wayne Country have agreed to implement a common data estimation methodology for data as of GLWA fiscal year 2017 (starting on July 1, 2016 at 12:00 AM) and continuing into the future. However, GLWA has yet to implement the new data estimation methodology. Consequently, GLWA and Wayne County estimate the flow rates for Meters WC-S-1, WC-S-2 and WC-S-3 differently. Wayne County estimates the flow rates for these meters using the agreed upon methodology. For this report, the Wayne County estimated flow rates are used for Meters WC-S-1, WC-S-2 and WC-S-3.

14. The agreed upon flow rate estimation methods for Meters WC-S-1, WC-S-2 and WC-S-3 are based on correlations to upstream RVSDS flow meters. Details of these correlations are provided in the *Wayne County Rouge Valley Sewage Disposal System Annual System Monitoring Report for 2016* dated May 8, 2017.

    - Meter WC-S-1 flow rates from January 1, 2017 through May 6, 2017 were estimated with a correlation to Meter WC-S-1A from year 2016.
    - Meter WC-S-1 flow rates from May 7, 2017 through December 31, 2017 were estimated with a new correlation to Meters P-14+P-24+P-25 which used data from January 1, 2015 through December 31, 2015. The correlation has not yet been provided to GLWA. The new correlation is required because Meter WC-S-1A was moved and the previously determined correlation between Meters WC-S-1A and WC-S-1 is not valid for the new meter location.
    - Meters WC-S-2 + WC-S-3 flow rates from January 1, 2017 through December 31, 2017 were estimated with a correlation to Meters P-14, P-30, P-31 and P-32.
    - The Wayne County estimated data provides 5-minute flow rate values, whereas the finest GLWA estimated data are daily average flow rate values. The increased level of detail provided by the Wayne County estimated data is important for estimating peak hourly flow rates during significant storm events.

15. Table 1-4 lists the total monthly volumes for year 2017 for Meters WC-S-1, WC-S-2 and WC-S-3 as estimated by GLWA and by Wayne County. The method used by GLWA to estimate the flow rates for WC-S-2 and WC-S-3 provides significantly higher results than the Wayne County method. Wayne County uses actual upstream flow meter data to provide the estimated outlet flow rate and is therefore considered to be more accurate.

16. Table 1-5 lists the average annual flow rate and total annual flow volume for each customer for year 2017. The sum of the customer flow rates is based on the upstream interceptor system flow meters. The sum of the outlet flow meters is based on the Wayne County and GLWA estimated flow rates for Meters WC-S-1, WC-S-2 and WC-S-3.

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

Meter	Dye Test Date	Adjustment Factor	Period Adjustment Factor
BG-1	8/10/2016	0.93	0.93
LV-Basin	8/8/2016	0.82	0.82
P-1	7/11/2016	0.89	0.89
P-7	8/9/2016	0.67	0.67
P-8	8/9/2016	1.11	1.11
P-9	9/1/2015	0.96	0.96
	9/26/2017	0.96	
P-10	8/27/2015	0.97	1.00
	9/27/2017	1.05	
P-11	8/26/2015	0.96	0.97
	9/25/2017	0.97	
P-12	8/26/2015	1.01	0.99
	9/29/2017	0.96	
P-13	7/18/2016	0.93	0.93
P-14	9/10/2015	1.00	0.97
	9/29/2017	0.93	
P-15	6/23/2016	0.84	0.84
P-17	8/8/2016	0.80	0.80
P-19	9/16/2015	0.94	0.94
	9/28/2017	0.94	
P-20	6/24/2016	0.99	0.99
P-21	9/16/2015	0.94	1.03
	10/5/2017	1.12	
P-24	12/4/2014	0.92	0.91
	9/8/2015	0.82	
	9/26/2017	0.97	
P-25	9/8/2015	0.95	0.96
	9/27/2017	0.96	
P-28	6/24/2016	0.74	0.74
P-29	7/27/2016	0.81	0.81
P-30	7/14/2016	0.98	0.98
P-31	7/7/2016	1.00	1.00
P-32	7/7/2016	0.89	0.89
P-33	7/14/2016	0.86	0.86
P-34	7/12/2016	0.97	0.97
P-35	7/12/2016	0.94	0.94
WE-28	10/15/2015	0.72	0.79
	9/27/2017	0.85	

Table 1-2
Rouge Valley Sewage Disposal System
Maximum Allowable Flow Limit Exceedences for Significant Storm Events in 2017

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	2/28/2017-3/1/2017	1.31	×	✓	×	✓	×	×	×	✓	×	×	×	×	×
2	3/30-31/2017	1.72	×	✓	×	✓	×	×	×	✓	×	×	×	×	×
3	4/5-7/2017	1.11	×	✓	×	✓	×	×	×	×	×	×	×	×	×
4	4/19-20/2017	1.15	×	✓	×	×	×	×	×	×	×	×	×	×	×
5	5/4-5/2017	1.59	×	✓	×	✓	×	×	×	×	×	×	×	×	×
6	7/7/2017	1.25	×	✓	×	✓	×	×	×	✓	×	×	×	×	N/A
7	8/28-29/2017	1.42	×	✓	×	×	×	×	×	×	×	×	×	×	N/A
8	10/10-11/2017	1.09	×	✓	×	×	×	×	×	×	×	×	×	×	N/A
9	11/17-18/2017	1.81	×	✓	×	✓	×	×	×	×	×	×	×	×	N/A
Total			0/9	9/9	0/9	6/9	0/9	0/9	0/9	3/9	0/9	0/9	0/9	0/9	N/A

Legend:

✓	Maximum Allowable Flow Limit Exceeded
×	Maximum Allowable Flow Limit Not Exceeded

Notes:

1. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised when the sewage flow meter math is updated.

Table 1-3
Rouge Valley Sewage Disposal System
Rouge River Flood Frequency in the 2017 Monitoring Period

Significant Storm Event		Peak 15-minute Flow Rate (cfs)		Estimated Flood Frequency[2] (months)	
Event No.	Date	Middle Rouge USGS Gage #04167000	Lower Rouge USGS Gage #04168400	Middle Rouge USGS Gage #04167000	Lower Rouge USGS Gage #04168400
1	2/28/2017-3/1/2017	944	1,130	12	11
2	3/30-31/2017	801	1,290	8	15
3	4/5-7/2017	510	758	3	5
4	4/19-20/2017	427	552	2	2
5	5/4-5/2017	530	756	4	5
6	7/7/2017	532	640	4	3
7	8/28-29/2017	327	438	1	1
8	10/10-11/2017	370	161	2	< 1
9	11/17-18/2017	643	627	5	3
Estimated Flood Frequency[1]		315	408	1 - month	
		734	903	6 - month	
		944	1,152	1 - year	
		1,066	1,405	2 - year	
		1,549	1,943	5 - year	
		1,988	2,436	10 - year	
		3,255	3,717	100 - year	

Notes:
1. A partial duration analysis was used to estimate the 1-month, 6-month, and 1-year flood frequency flow rates. An annual peak series analysis was used to estimate the 2, 5, 10 and 100-year flood frequency flow rates.
2. The estimated flood frequency for each storm event was linearly interpolated between the estimated flood frequencies listed in the lower half of this table.
3. Data collection at stream gage USGS #04168000 was discontinued on September 30, 2016. The USGS has shifted hydrologic studies on the Lower Rouge River to USGS #04168400.

Table 1-4
Rouge Valley Sewage Disposal System
Monthly Volume Comparison

Period	[WC-S-1] (MG)				[WC-S-2] + [WC-S-3] (MG)				[WC-S-1] + [WC-S-2] + [WC-S-3] (MG)			
	GLWA	Wayne County	Difference		GLWA	Wayne County	Difference		GLWA	Wayne County	Difference	
January 2017	1,678	1,720	42	2.5%	733	677	-57	-7.7%	2,412	2,397	-15	-0.6%
February 2017	1,360	1,473	113	8.3%	560	556	-4	-0.7%	1,920	2,029	109	5.7%
March 2017	1,628	1,757	128	7.9%	765	809	44	5.7%	2,394	2,566	172	7.2%
April 2017	1,857	2,177	321	17.3%	844	745	-100	-11.8%	2,701	2,922	221	8.2%
May 2017	1,823	1,680	-143	-7.8%	754	614	-140	-18.6%	2,578	2,294	-283	-11.0%
June 2017	1,069	1,047	-22	-2.0%	345	267	-78	-22.6%	1,414	1,314	-100	-7.1%
July 2017	1,151	1,020	-131	-11.4%	384	267	-117	-30.4%	1,534	1,287	-247	-16.1%
August 2017	1,154	929	-226	-19.5%	360	221	-139	-38.5%	1,514	1,150	-364	-24.0%
September 2017	932	854	-78	-8.3%	287	197	-91	-31.6%	1,220	1,051	-169	-13.8%
October 2017	1,078	944	-134	-12.5%	313	246	-67	-21.3%	1,391	1,190	-201	-14.4%
November 2017	1,445	1,250	-195	-13.5%	475	414	-62	-13.0%	1,921	1,664	-257	-13.4%
December 2017	1,039	1,096	56	5.4%	301	304	3	1.0%	1,340	1,400	60	4.4%
Total	16,216	15,948	-268	-1.7%	6,122	5,316	-806	-13.2%	22,337	21,263	-1,074	-4.8%

Table 1-5
Rouge Valley Sewage Disposal System
Average Annual Flow Rate and Volume by Customer for 2017

Customer		Estimated Annual Average Flow Rate (cfs)	Estimated Annual Flow Volume	
			(MG)	(MCF)
Oakland County (Novi)		7.00	1,652	220,862
Plymouth City		4.72	1,114	148,906
Northville City		1.52	359	48,054
Garden City		6.96	1,642	219,568
Livonia		24.75	5,839	780,530
Westland		16.56	3,906	522,097
Redford Twp		10.55	2,488	332,614
Dearborn Heights		8.35	1,971	263,485
Van Buren Twp		1.26	297	39,769
Romulus		0.33	78	10,490
Wayne		4.92	1,161	155,224
Inkster		3.44	811	108,356
WTUA		N/A	N/A	N/A
WCAA		0.19	44	5,852
Sum of Customer Flow Rates		91.67	21,624	2,890,753
Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3]	Wayne County	90.14	21,263	2,842,510
	GLWA	94.43	22,337	2,986,051

Notes:

2. cfs = Cubic Feet per Second
3. MG = Million Gallons
4. MCF = Thousand Cubic Feet
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised when the sewage flow meter math is updated.

Section 2

Monitoring Network

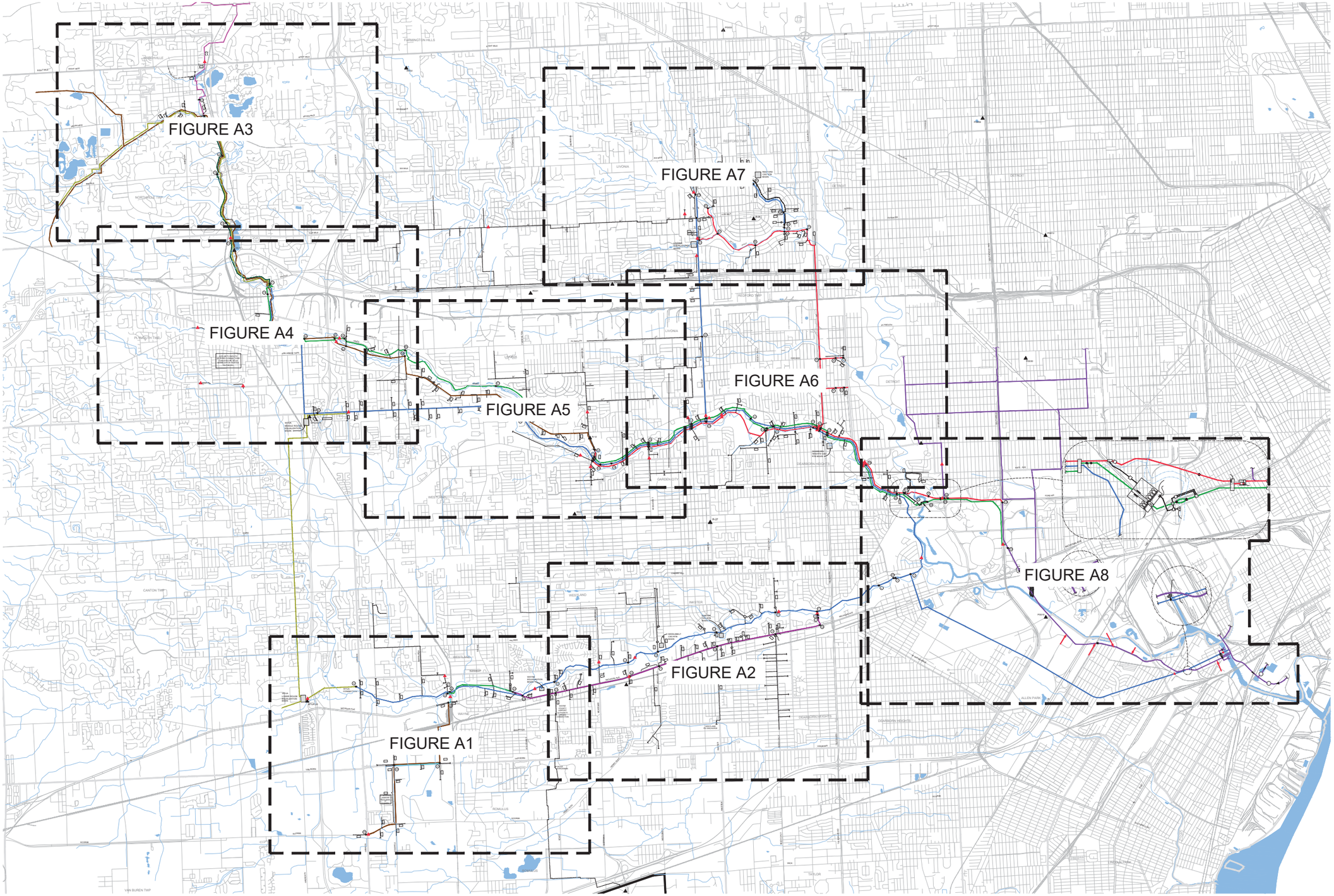
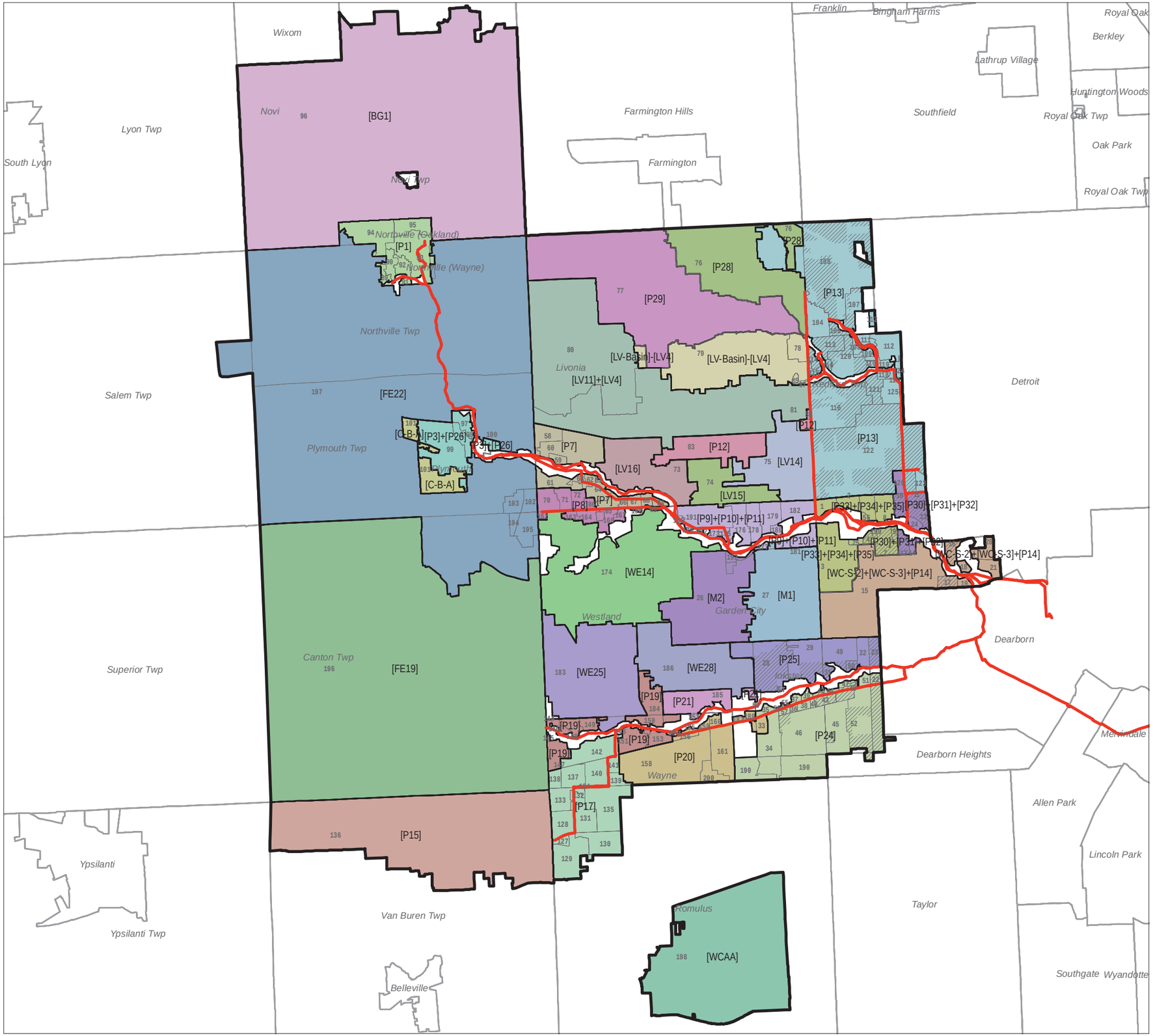


FIGURE 2-1
ROUGE VALLEY SEWAGE DISPOSAL SYSTEM
INTERCEPTOR SCHEMATIC

SYSTEM
MONITORING
INDEX SHEET

REVISION DATE: FEBRUARY 22, 2017

Rouge Valley Sewage Disposal System



Legend

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

N W E S

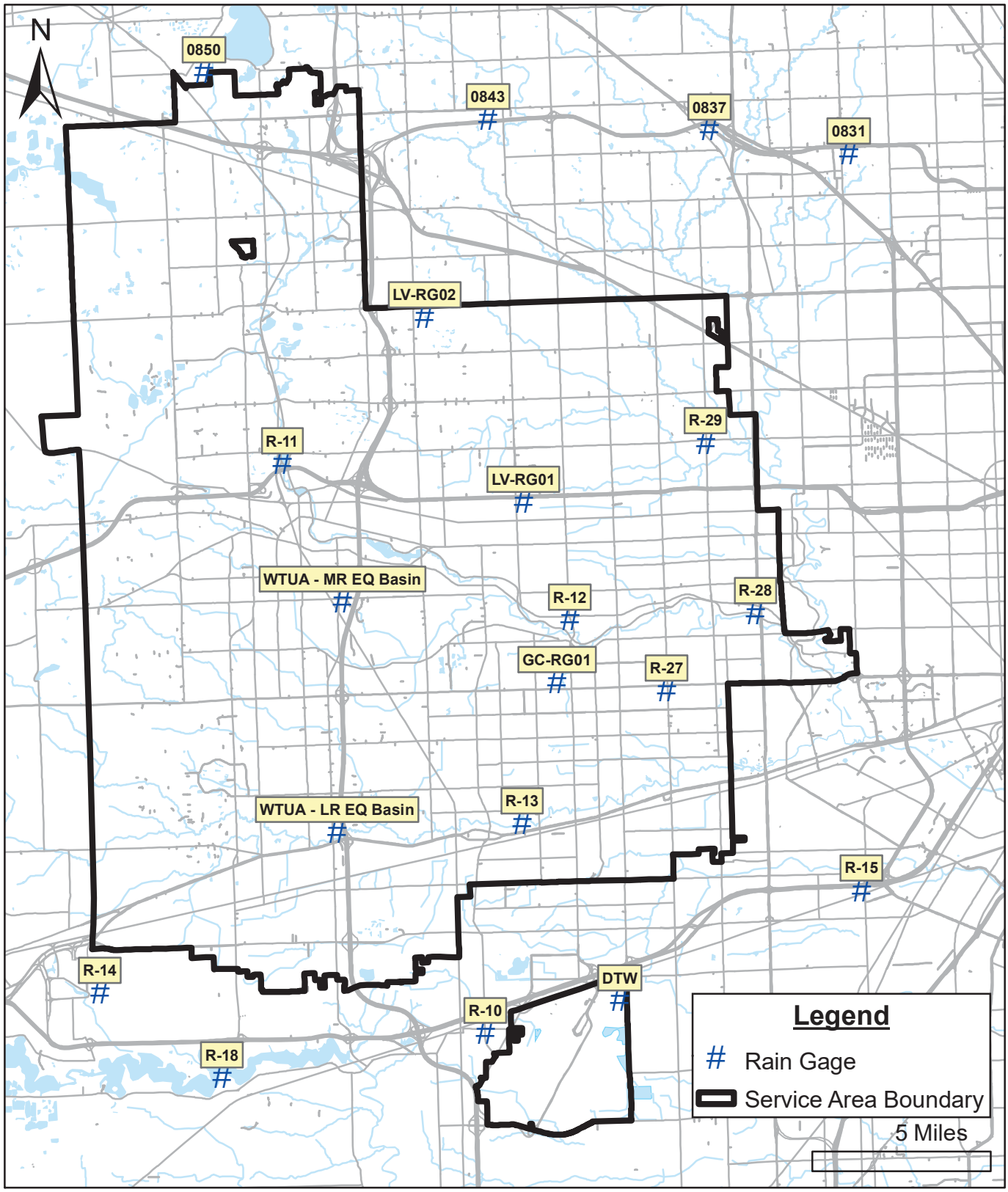
0 0.5 1 2 3 4 Miles

Figure 2-2
Meter District and Line Connection Areas

Prepared By:

Applied Science, Inc.

REVISION DATE: JUNE 30, 2016



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 GLWA

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 (cfs)												Annual Average Incremental Flow Rate	
				Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	(cfs)	(gallons / capita / day)
Middle Rouge at Inkster Road	[P-9] + [P-10] + [P-11] - [FE-22] + [C] - [B] - [A]	223,281	38,468	57.6	55.0	63.1	72.1	58.0	37.6	36.2	32.4	31.1	34.5	47.6	39.9	47.0	136
Middle Rouge Outlet	[WC-S-2] + [WC-S-3] + [P-14] - [FE-22] + [C] - [B] - [A]	308,765	46,337	82.3	78.3	91.0	104.8	84.7	52.3	49.7	44.4	42.3	46.7	64.7	52.9	66.1	138
Lower Rouge Outlet	[P-24] + [P-25] - [FE-19] - [WCAA]	96,019	20,858	21.2	20.4	23.4	29.7	22.4	12.9	12.4	11.2	10.3	10.9	16.8	13.6	17.1	115
RVSDS Outlet	[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-22] + [C] - [B] - [A] - [FE-19] - [WCAA]	404,784	67,194	113.6	107.9	123.1	146.8	115.2	69.1	65.6	58.5	55.2	60.5	86.7	70.6	89.2	142

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 (cfs)												Annual Average Incremental Dry Weather Flow Rate	
				Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	(cfs)	(gallons / capita / day)
Middle Rouge at Inkster Road	[P-9] + [P-10] + [P-11] - [FE-22] + [C] - [B] - [A]	223,281	38,468	54.1	51.5	55.0	58.8	52.0	37.5	33.5	30.9	30.9	32.2	41.3	39.2	43.0	125
Middle Rouge Outlet	[WC-S-2] + [WC-S-3] + [P-14] - [FE-22] + [C] - [B] - [A]	308,765	46,337	76.3	72.3	78.4	82.2	74.6	52.0	45.0	41.8	41.9	42.7	54.9	51.9	59.4	124
Lower Rouge Outlet	[P-24] + [P-25] - [FE-19] - [WCAA]	96,019	20,858	18.9	18.3	19.4	21.9	18.5	12.6	10.8	9.8	10.2	10.4	13.5	13.2	14.8	99
RVSDS Outlet	[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-22] + [C] - [B] - [A] - [FE-19] - [WCAA]	404,784	67,194	104.7	99.2	105.5	115.7	99.6	68.4	58.7	54.0	54.7	55.6	72.6	69.0	79.7	127

Notes:

1. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for the key locations may not be valid for the period since this change occurred. The values listed in this table for the period since this change occurred may be revised when the sewage flow meter math is updated.

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]	Year 2010 Residential Population	Total Developed Land (acres)	Maximum Allowable Flow Limit[2] (cfs)	Estimated Monthly Average Customer Flow Rate (cfs)												Estimated Annual Average Flow Rate		Estimated Maximum Monthly Average Flow Rate (cfs)
					Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	(cfs)	(gallons / capita / day)	
Oakland County (Novi)	[BG-1]	43,217	12,473	20.48	7.73	7.41	7.93	7.97	7.64	6.50	6.21	6.14	6.02	6.53	7.24	6.75	*7.00*	*105*	*7.97*
Plymouth City[3]	[P-3] + [P-26] - [P-1] + [C-B-A]	9,022	968	4.80	5.48	5.01	5.39	5.80[3]	5.49[3]	4.79[3]	3.88[3]	3.74[3]	3.90[3]	4.46[3]	4.48[3]	4.26[3]	*4.72[3]*	*338[3]*	*5.80[3]*
Northville City[3]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	5,765	871	7.61	1.61	1.56	1.88	2.07[3]	1.74[3]	1.45[3]	1.38[3]	1.27[3]	1.25[3]	1.42[3]	1.44[3]	1.23[3]	*1.52[3]*	*171[3]*	*2.07[3]*
Garden City	99.4%[M-1] + 93.1%[M-2]	27,647	2,796	24.40	9.65	9.08	10.78	11.98	8.84	4.59	4.76	4.01	3.70	4.22	7.11	5.03	*6.96*	*163*	*11.98*
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	106.52	30.39	28.90	34.32	41.02	31.73	18.83	17.78	16.14	15.97	17.35	24.78	20.25	*24.75*	*165*	*41.02*
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	80.04	19.92	19.16	20.81	25.55	19.84	12.95	13.24	13.68	12.24	11.62	15.98	13.95	*16.56*	*127*	*25.55*
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	52.89	14.81	13.81	16.22	18.87	14.74	7.60	6.92	5.75	5.18	6.30	9.42	7.22	*10.55*	*145*	*18.87*
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	65.47	9.57	9.21	11.37	13.58	11.77	7.05	6.46	6.22	5.95	5.79	7.63	5.77	*8.35*	*139*	*13.58*
Van Buren Twp	[P-15]	6,938	4,471	5.00	1.51	1.52	1.61	1.74	1.50	1.05	1.07	0.98	0.92	0.99	1.17	1.10	*1.26*	*117*	*1.74*
Romulus	38.0%{[P-17] - [P-15]}	2,362	1,562	3.60	0.36	0.29	0.39	0.47	0.42	0.33	0.27	0.32	0.28	0.28	0.31	0.26	*0.33*	*91*	*0.47*
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	27.92	6.70	6.24	6.89	8.05	5.99	3.99	3.72	3.41	3.19	3.20	4.18	3.61	*4.92*	*181*	*8.05*
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	26.66	3.98	3.90	4.97	6.82	5.20	2.28	1.79	1.89	1.65	2.02	4.07	2.75	*3.44*	*88*	*6.82*
WTUA[3]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	146,319	31,498	33.18	5.17	3.35	4.86	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	--	N/A[3]
WCAA	[WCAA]	--	4,881	1.50	0.87	0.91	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	*0.19*	--	*0.91*
Row A) Sum of Customer Flow Rates (cfs):					**117.74**	**110.36**	**127.57**	**143.91**	**114.89**	**71.42**	**67.48**	**63.56**	**60.24**	**64.17**	**87.81**	**72.55**	**91.67**	**--**	143.91
Row B) Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3] (cfs):					**119.62**	**112.13**	**128.06**	**150.70**	**114.51**	**67.77**	**64.24**	**57.39**	**54.21**	**59.38**	**85.82**	**69.86**	**90.14**	**--**	150.70

Notes:
1. Sewage flow meter math for some customers based on 2010 Census populations.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised when the sewage flow meter math is updated.

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]	Year 2010 Residential Population	Total Developed Land (acres)	Maximum Allowable Flow Limit[2] (cfs)	Estimated Monthly Average Customer Dry Weather Flow Rate (cfs)												Estimated Annual Average Dry Weather Flow Rate		Estimated Maximum Monthly Average Dry Weather Flow Rate (cfs)
					Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	(cfs)	(gallons / capita / day)	
Oakland County (Novi)	[BG-1]	43,217	12,473	20.48	7.45	7.20	7.58	7.32	7.33	6.53	6.12	6.06	5.99	6.25	6.84	6.70	*6.78*	*101*	*7.58*
Plymouth City[3]	[P-3] + [P-26] - [P-1] + [C-B-A]	9,022	968	4.80	5.32	4.85	4.77	5.18[3]	5.19[3]	4.86[3]	3.99[3]	3.68[3]	3.90[3]	4.34[3]	4.01[3]	4.25[3]	*4.53[3]*	*324[3]*	*5.32[3]*
Northville City[3]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	5,765	871	7.61	1.55	1.51	1.79	1.85[3]	1.69[3]	1.46[3]	1.31[3]	1.27[3]	1.25[3]	1.37[3]	1.34[3]	1.23[3]	*1.47[3]*	*164[3]*	*1.85[3]*
Garden City	99.4%[M-1] + 93.1%[M-2]	27,647	2,796	24.40	8.45	7.69	8.20	8.20	6.98	4.46	3.97	3.60	3.61	3.65	5.24	4.79	*5.73*	*134*	*8.45*
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	106.52	28.81	27.35	29.90	33.55	28.49	18.83	16.51	15.21	15.87	16.07	21.50	19.97	*22.65*	*151*	*33.55*
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	80.04	18.89	18.06	18.34	20.70	17.95	12.93	12.62	13.22	12.13	11.27	14.28	13.78	*15.34*	*118*	*20.70*
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	52.89	13.62	12.77	13.79	15.21	12.81	7.49	5.91	5.24	5.09	5.33	7.39	7.01	*9.29*	*128*	*15.21*
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	65.47	8.20	7.76	9.27	7.92	9.47	6.81	5.40	5.56	5.83	5.10	6.11	5.60	*6.92*	*115*	*9.47*
Van Buren Twp	[P-15]	6,938	4,471	5.00	1.44	1.44	1.49	1.51	1.37	1.05	1.02	0.96	0.91	0.97	1.08	1.09	*1.19*	*111*	*1.51*
Romulus	38.0%{[P-17] - [P-15]}	2,362	1,562	3.60	0.33	0.28	0.34	0.38	0.40	0.33	0.26	0.26	0.28	0.32	0.29	0.24	*0.31*	*85*	*0.40*
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]	17,597	2,517	27.92	6.15	5.73	5.98	6.40	5.44	4.00	3.40	3.09	3.16	3.14	3.53	3.51	*4.46*	*164*	*6.40*
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	26.66	3.09	3.23	3.77	4.15	3.38	2.07	1.32	1.25	1.63	1.78	2.76	2.58	*2.58*	*66*	*4.15*
WTUA[3]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	146,319	31,498	33.18	4.23	2.92	3.19	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	N/A[3]	--	N/A[3]
WCAA	[WCAA]	--	4,881	1.50	1.24	1.13	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	*0.24*	-	*1.24*
Row A) Sum of Customer Flow Rates (cfs):					**108.77**	**101.94**	**108.55**	**112.36**	**100.50**	**70.83**	**61.85**	**59.40**	**59.67**	**59.58**	**74.36**	**71.15**	**82.34**	**-**	112.36
Row B) Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3] (cfs):					**110.14**	**103.19**	**108.75**	**115.94**	**98.23**	**67.08**	**57.33**	**52.89**	**53.65**	**54.53**	**71.67**	**68.36**	**80.05**	**-**	115.94

Notes:
1. Sewage flow meter math for some customers based on 2010 Census populations.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
3. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised when the sewage flow meter math is updated.

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 for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 1 2/28/2017-3/1/2017 1.31 in		
			Estimated Monthly Average Dry Weather Flow Rate for February 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	7.20	13.53	1.88
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	4.85	15.66	3.23
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.51	3.65	2.42
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	7.69	47.14	6.13
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]	106.52	27.35	78.39	2.87
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]	80.04	18.06	41.81	2.31
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	12.77	38.63	3.03
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]}	65.47	7.76	71.08	9.16
Van Buren Twp	[P-15]	5.00	1.44	3.73	2.59
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.28	1.55	5.44
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]	27.92	5.73	16.09	2.81
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]}	26.66	3.23	19.05	5.89
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	2.92	25.70	8.80

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 2 3/30-31/2017 1.70 in		
			Estimated Monthly Average Dry Weather Flow Rate for March 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	7.58	16.84	2.22
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	4.77	13.56	2.84
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.79	4.28	2.39
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	8.20	56.84	6.93
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]	106.52	29.90	70.65	2.36
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]	80.04	18.34	47.15	2.57
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	13.79	36.01	2.61
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]}	65.47	9.27	67.50	7.28
Van Buren Twp	[P-15]	5.00	1.49	4.00	2.69
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.34	1.92	5.66
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]	27.92	5.98	22.50	3.76
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]}	26.66	3.77	22.31	5.92
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	3.19	26.00	8.14

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 3 4/5-7/2017 1.11 in		
			Estimated Monthly Average Dry Weather Flow Rate for April 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	7.32	12.13	1.66
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	5.18	10.15	1.96
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.85	3.64	1.97
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	8.20	34.87	4.25
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]	106.52	33.55	67.60	2.02
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]	80.04	20.70	44.88	2.17
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	15.21	32.52	2.14
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]}	65.47	7.92	58.48	7.39
Van Buren Twp	[P-15]	5.00	1.51	2.86	1.89
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.38	1.29	3.38
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]	27.92	6.40	16.81	2.63
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]}	26.66	4.15	22.29	5.37
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	22.49	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 4 4/19-20/2017 1.15 in		
			Estimated Monthly Average Dry Weather Flow Rate for April 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	7.32	12.84	1.76
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	5.18	11.98	2.31
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.85	3.77	2.04
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	8.20	23.27	2.84
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]	106.52	33.55	58.20	1.73
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]	80.04	20.70	35.84	1.73
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	15.21	29.66	1.95
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]}	65.47	7.92	48.59	6.14
Van Buren Twp	[P-15]	5.00	1.51	3.13	2.07
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.38	1.15	3.03
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]	27.92	6.40	16.96	2.65
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]}	26.66	4.15	22.74	5.48
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	12.56	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 5 5/4-5/2017 1.59 in		
			Estimated Monthly Average Dry Weather Flow Rate for May 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	7.33	13.14	1.79
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	5.19	11.80	2.27
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.69	3.38	2.00
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	6.98	33.12	4.74
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]	106.52	28.49	68.51	2.41
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]	80.04	17.95	42.14	2.35
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	12.81	33.22	2.59
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]}	65.47	9.47	63.21	6.67
Van Buren Twp	[P-15]	5.00	1.37	3.24	2.36
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.40	1.12	2.79
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]	27.92	5.44	12.85	2.36
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]}	26.66	3.38	20.80	6.15
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	18.27	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 6 7/7/2017 1.25 in		
			Estimated Monthly Average Dry Weather Flow Rate for July 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	6.12	8.47	1.88
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	3.99	9.13	2.29
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.31	2.44	1.87
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	3.97	27.28	6.87
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]	106.52	16.51	42.62	2.58
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]	80.04	12.62	32.20	2.55
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	5.91	24.49	4.14
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]}	65.47	5.40	67.26	12.46
Van Buren Twp	[P-15]	5.00	1.02	1.83	1.79
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.26	1.05	3.97
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]	27.92	3.40	14.45	4.24
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]}	26.66	1.32	17.32	13.09
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	N/A	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 7 8/28-29/2017 1.42 in		
			Estimated Monthly Average Dry Weather Flow Rate for August 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	6.06	8.53	1.88
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	3.68	7.65	2.08
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.27	2.47	1.95
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	3.60	19.55	5.43
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]	106.52	15.21	36.19	2.38
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]	80.04	13.22	31.59	2.39
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	5.24	20.82	3.98
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]}	65.47	5.56	54.01	9.71
Van Buren Twp	[P-15]	5.00	0.96	1.34	1.40
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.26	1.13	4.39
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]	27.92	3.09	17.82	5.76
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]}	26.66	1.25	17.68	14.14
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	N/A	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 8 10/10-11/2017 1.09 in		
			Estimated Monthly Average Dry Weather Flow Rate for October 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	6.25	14.16	1.88
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	4.34	10.18	2.35
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.37	3.49	2.55
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	3.65	13.78	3.78
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]	106.52	16.07	42.92	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]	80.04	11.27	20.41	1.81
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	5.33	23.24	4.36
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]}	65.47	5.10	37.02	7.26
Van Buren Twp	[P-15]	5.00	0.97	1.33	1.36
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.32	0.83	2.63
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]	27.92	3.14	6.92	2.20
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]}	26.66	1.78	10.82	6.08
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	N/A	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Table 5-1 continued
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates for Significant Storm Events by Customer for 2017
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 9 11/17-18/2017 1.81 in		
			Estimated Monthly Average Dry Weather Flow Rate for November 2017 (cfs)	Estimated Maximum Hourly Flow Rate[2] (cfs)	Peaking Factor[3]
Oakland County (Novi)	[BG-1]	20.48	6.84	16.15	1.88
Plymouth City[5]	[P-3] + [P-26] - [P-1] + [C-B-A]	4.80	4.01	11.44	2.86
Northville City[5]	97.3%{[P-1] - [BG-1]} + 0.3%{[FE-22] - [C-B-A]}	7.61	1.34	3.50	2.60
Garden City	99.4%[M-1] + 93.1%[M-2]	24.40	5.24	30.80	5.88
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]	106.52	21.50	61.73	2.87
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]	80.04	14.28	41.09	2.88
Redford Twp	0.9%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.6%[P-13]	52.89	7.39	31.08	4.20
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]}	65.47	6.11	49.11	8.04
Van Buren Twp	[P-15]	5.00	1.08	2.74	2.55
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.29	0.82	2.79
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]	27.92	3.53	15.00	4.25
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]}	26.66	2.76	24.28	8.81
WTUA[5]	[FE-19] + 2.7%{[P-1] - [BG-1]} + 99.7%{[FE-22] - [C-B-A]}	33.18	N/A	N/A	N/A

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 maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.
2. Estimated maximum hourly flow rates are based on recorded meter data with no adjustments for routing and attenuation.
3. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
4. The Wayne County Airport Authority (WCAA) is only allowed to discharge to the RVSDS during dry weather. The WCAA did not discharge to the RVSDS during this significant storm event.
5. WTUA began diverting most of the flow from their service area within the RVSDS to the YCUA wastewater system on April 21, 2017. As a result, the sewage flow meter math for some customers may not be valid for the period since this change occurred. These customers include Plymouth City, Northville City, and WTUA. The values listed in this table for these customers for the period since this change occurred may be revised

Section 6

Summary of Rainfall Events

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

Period: 1/1/2017 through 12/31/2017

Significant Event No.[1]	Start Date/Time	Stop Date/Time	Duration (hours)	Preceding Week Rainfall (inches)	Event Precipitation Depth (inches)				Coefficient of Variation[3]
					Minimum	Average[2]	Maximum	Std. Dev	
1	2/28/17	3/1/17	24	0.61	0.97	1.31	1.74	0.26	20%
2	3/30/17	3/31/17	36	0.61	1.40	1.72	2.01	0.44	26%
3	4/5/17	4/7/17	36	1.91	0.77	1.11	1.49	0.19	17%
4	4/19/17	4/20/17	29	0.06	0.28	1.15	1.59	0.31	27%
5	5/4/17	5/5/17	38	0.84	1.32	1.59	1.85	0.17	11%
6	7/7/17	7/7/17	21	0.49	0.54	1.25	2.33	0.57	46%
7	8/28/17	8/29/17	34	0.08	0.29	1.42	2.22	0.68	48%
8	10/10/17	10/11/17	18	0.86	0.68	1.09	1.67	0.40	36%
9	11/17/17	11/18/17	23	0.49	1.63	1.81	2.01	0.12	7%

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 average precipitation value is an arithmetic average of the collection of point gages listed in Table 8-1.

3. 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.

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

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 2/28/2017-3/1/2017 1.31 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	13.53	3/1/17 8:10	-	-	-	-
	P-1	NAI	48	740.82	716.31	16.22	3/1/17 9:05	717.77	1.46	○	3/1/17 9:50
	P-3	MRIR	36	681.37	652.48	17.56	3/1/17 9:30	654.04	1.56	○	3/1/17 10:10
	P-26	PWI	30	649.24	647.86	2.37	3/1/17 9:50	648.43	0.57	○	3/1/17 10:00
	P-7	PWI	48	649.09	625.23	3.16	3/1/17 10:15	626.67	1.44	○	3/1/17 12:05
	LV-16	CS	48	-	627.38	5.61	3/1/17 0:20	628.53	1.15	○	3/1/17 0:45
	FE-22	RVI	48	685.04	644.88	27.71	3/1/17 7:40	646.94	2.06	○	3/1/17 7:05
	A	CS	21	-	-	3.65	3/1/17 0:50	-	1.02	○	3/1/17 1:00
	B	CS	36	-	-	5.93	3/1/17 0:55	-	0.92	○	3/1/17 1:05
	C	CS	30	-	-	18.75	3/1/17 4:40	-	1.28	○	3/1/17 4:50
	P-8	RVI	48	645.40	621.80	34.30	3/1/17 8:00	624.13	2.33	○	3/1/17 8:00
	WE-14	CS	42	-	613.48	9.96	3/1/17 5:55	617.52	4.04	⊗	3/1/17 10:40
	LV-15	CS	60	636.29	617.03	10.55	3/1/17 4:55	620.12	3.09	○	3/1/17 10:45
	M-22 MP#1	CS	42	630.49	614.41	-	-	620.42	6.01	◉	3/1/17 11:10
	M-22 MP#2	CS	42	630.49	614.41	-	-	623.69	9.28	◉	3/1/17 18:05
	M-2	CS	27	636.70	612.39	17.96	3/1/17 5:50	616.62	4.23	◉	3/1/17 10:55
	M-1	CS	72	630.59	607.59	30.66	3/1/17 5:40	616.27	8.68	◉	3/1/17 6:00
	LV-14	CS	60	612.02	605.57	11.22	3/1/17 5:20	606.90	1.33	○	3/1/17 5:55
	P-28	RVI	54	629.02	607.92	7.22	3/1/17 1:35	615.10	7.18	◉	3/1/17 10:20
	P-29	CS	42	-	-	11.78	3/1/17 5:55	-	4.50	⊗	3/1/17 14:40
	LV-20	CS	54	-	-	-	-	-	0.33	○	3/1/17 22:05
	LV-BASIN	RVI	54	632.00	602.01	25.36	3/1/17 2:20	612.32	10.31	◉	3/1/17 10:10
	LV-4	CS	30	652.59	638.51	8.44	3/1/17 6:10	640.86	2.35	○	3/1/17 5:45
	LV-11	CS	42	-	-	16.49	3/1/17 9:10	-	5.17	⊗	3/1/17 10:00
	P-12	RVI	60	613.41	597.67	51.01	3/1/17 9:55	603.94	6.27	◉	3/1/17 10:55
	P-9	MRIR	42	610.36	597.01	28.37	3/1/17 7:30	602.96	5.95	◉	3/1/17 10:45
	P-10	RVI	66	607.65	595.62	92.77	3/1/17 7:50	601.90	6.28	◉	3/1/17 8:55
	P-11	MRPIE	48	607.91	596.68	39.77	3/1/17 9:30	602.74	6.06	◉	3/1/17 8:50
	P-13	MRPIE	54	613.22	586.85	39.97	3/1/17 8:55	592.68	5.83	◉	3/1/17 8:55
	P-35	MRIR	54	597.62	584.15	50.89	3/1/17 5:25	590.22	6.07	◉	3/1/17 11:00
	P-34	RVI	62	595.60	582.30	97.43	3/1/17 6:50	589.58	7.28	◉	3/1/17 12:00
	P-33	MRPIE	48	597.01	585.22	36.82	3/1/17 9:50	590.18	4.96	◉	3/1/17 11:10
	P-32	MRIR	66	597.03	578.79	54.22	3/1/17 12:10	585.31	6.52	◉	3/1/17 11:05
	P-31	RVI	78	599.00	578.71	123.88	3/1/17 11:40	585.56	6.85	◉	3/1/17 11:15
	P-30	MRPIE	60	593.00	580.29	59.31	3/1/17 11:55	585.59	5.30	◉	3/1/17 11:15
	P-14	RVI	78	604.91	570.93	98.49	3/1/17 16:25	578.48	7.55	◉	3/1/17 7:50
Lower Rouge	P-15	WRVI	24	667.57	651.67	3.73	3/1/17 6:55	653.25	1.58	○	3/1/17 7:00
	P-17	LRIR	30	641.21	632.39	6.52	3/1/17 9:25	633.57	1.18	○	3/1/17 10:10
	FE-19	CS	-	-	-	6.81	3/1/17 6:05	-	-	-	-
	WE-25	CS	27	-	-	9.13	3/1/17 7:45	-	1.65	○	3/1/17 7:15
	P-19	RVI	48	630.34	621.54	24.56	3/1/17 9:45	624.06	2.52	○	3/1/17 10:45
	WE-28	CS	30	-	-	6.88	3/1/17 5:50	-	1.22	○	3/1/17 6:00
	P-21	RVI	54	620.17	608.14	34.97	3/1/17 6:50	610.37	2.23	○	3/1/17 6:55
	P-25	RVI	60	598.36	588.06	48.02	3/1/17 10:45	590.95	2.89	○	3/1/17 12:05
	P-20	WI	48	630.66	619.72	13.36	3/1/17 5:30	622.47	2.75	○	3/1/17 6:00
	P-24	RVI	36	594.24	584.52	19.47	3/1/17 7:15	586.61	2.09	○	3/1/17 12:10
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	180.27	3/1/17 13:25	570.81	15.91	◉	3/1/17 6:45
	WC-S-1	RVI	66	586.88	500.94	189.93	3/1/17 13:05	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	161.97	3/1/17 11:25	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

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

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 2 3/30-31/2017 1.70 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	16.84	3/30/17 20:25	-	-	-	-
	P-1	NAI	48	740.82	716.31	19.05	3/30/17 21:25	717.94	1.63	○	3/30/17 21:55
	P-3	MRIR	36	681.37	652.48	20.24	3/30/17 22:35	654.23	1.75	○	3/30/17 22:35
	P-26	PWI	30	649.24	647.86	3.50	3/30/17 22:45	648.55	0.69	○	3/30/17 23:10
	P-7	PWI	48	649.09	625.23	3.91	3/31/17 0:00	626.83	1.60	○	3/31/17 0:15
	LV-16	CS	48	-	627.38	7.32	3/30/17 16:40	628.88	1.50	○	3/30/17 17:30
	FE-22	RVI	48	685.04	644.88	26.84	3/30/17 21:05	646.91	2.03	○	3/30/17 21:25
	A	CS	21	-	-	1.81	3/30/17 16:40	-	0.68	○	3/30/17 17:15
	B	CS	36	-	-	4.37	3/30/17 16:55	-	0.82	○	3/30/17 17:30
	C	CS	30	-	-	14.25	3/30/17 20:15	-	1.11	○	3/30/17 20:45
	P-8	RVI	48	645.40	621.80	31.26	3/30/17 20:30	626.14	4.34	⦿	3/31/17 0:05
	WE-14	CS	42	-	613.48	11.65	3/30/17 17:15	621.25	7.77	⊗	3/30/17 23:55
	LV-15	CS	60	636.29	617.03	13.51	3/30/17 23:00	622.03	5.00	⦿	3/31/17 5:35
	M-22 MP#1	CS	42	630.49	614.41	-	-	622.99	8.58	⦿	3/30/17 23:50
	M-22 MP#2	CS	42	630.49	614.41	-	-	623.16	8.75	⦿	3/31/17 6:40
	M-2	CS	27	636.70	612.39	19.91	3/30/17 21:00	620.60	8.21	⦿	3/31/17 0:00
	M-1	CS	72	630.59	607.59	38.60	3/30/17 20:45	617.61	10.02	⦿	3/31/17 0:05
	LV-14	CS	60	612.02	605.57	11.80	3/30/17 20:30	609.90	4.33	○	3/31/17 1:20
	P-28	RVI	54	629.02	607.92	6.59	3/31/17 2:35	614.78	6.86	⦿	3/31/17 0:25
	P-29	CS	42	-	-	10.52	3/30/17 19:00	-	4.48	⊗	3/31/17 0:50
	LV-20	CS	54	-	-	-	-	-	0.26	○	4/1/17 9:45
	LV-BASIN	RVI	54	632.00	602.01	24.08	3/31/17 18:30	612.43	10.42	⦿	3/31/17 0:15
	LV-4	CS	30	652.59	638.51	8.09	3/30/17 19:55	640.85	2.34	○	3/30/17 20:40
	LV-11	CS	42	-	-	16.64	3/30/17 22:25	-	5.45	⊗	3/31/17 0:20
	P-12	RVI	60	613.41	597.67	40.94	3/31/17 13:10	607.53	9.86	⦿	3/31/17 0:00
	P-9	MRIR	42	610.36	597.01	26.33	3/30/17 19:30	606.76	9.75	⦿	3/31/17 0:20
	P-10	RVI	66	607.65	595.62	85.03	3/30/17 22:35	605.90	10.28	⦿	3/31/17 0:20
	P-11	MRPIE	48	607.91	596.68	38.26	3/30/17 22:45	606.72	10.04	⦿	3/31/17 0:10
	P-13	MRPIE	54	613.22	586.85	37.71	3/30/17 20:35	596.21	9.36	⦿	3/31/17 0:10
	P-35	MRIR	54	597.62	584.15	52.55	3/30/17 21:00	594.50	10.35	⦿	3/31/17 0:25
	P-34	RVI	62	595.60	582.30	100.39	3/30/17 21:35	591.68	9.38	⦿	3/31/17 13:05
	P-33	MRPIE	48	597.01	585.22	39.89	3/30/17 21:00	593.25	8.03	⦿	3/31/17 2:45
	P-32	MRIR	66	597.03	578.79	55.14	3/30/17 21:45	590.01	11.22	⦿	3/31/17 0:05
	P-31	RVI	78	599.00	578.71	120.00	3/30/17 22:00	590.30	11.59	⦿	3/31/17 0:00
	P-30	MRPIE	60	593.00	580.29	61.13	3/30/17 21:35	590.37	10.08	⦿	3/31/17 0:00
	P-14	RVI	78	604.91	570.93	109.90	4/1/17 1:05	583.61	12.68	⦿	3/30/17 23:50
Lower Rouge	P-15	WRVI	24	667.57	651.67	4.00	3/30/17 22:25	653.85	2.18	⦿	3/30/17 22:55
	P-17	LRIR	30	641.21	632.39	8.30	3/30/17 20:35	633.82	1.43	○	3/30/17 21:15
	FE-19	CS	-	-	-	6.82	3/30/17 19:05	-	-	-	-
	WE-25	CS	27	-	-	10.01	3/30/17 20:25	-	2.17	○	3/30/17 21:25
	P-19	RVI	48	630.34	621.54	33.30	3/30/17 21:05	624.49	2.95	○	3/30/17 21:40
	WE-28	CS	30	-	-	8.18	3/30/17 21:15	-	1.36	○	3/30/17 21:10
	P-21	RVI	54	620.17	608.14	46.61	3/30/17 21:10	611.14	3.00	○	3/30/17 22:35
	P-25	RVI	60	598.36	588.06	54.24	3/30/17 18:05	596.90	8.84	⦿	3/30/17 23:45
	P-20	WI	48	630.66	619.72	13.88	3/30/17 21:35	622.64	2.92	○	3/30/17 21:20
	P-24	RVI	36	594.24	584.52	20.26	3/30/17 11:55	591.73	7.21	⦿	3/30/17 23:50
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	177.02	3/31/17 1:50	574.03	19.13	⦿	3/30/17 21:40
	WC-S-1	RVI	66	586.88	500.94	186.27	3/31/17 1:30	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	121.08	3/30/2017 21:25	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

Interceptor Key	
CS	Community Sewer
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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 7-1 continued
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 4/5-7/2017 1.11 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	12.13	4/6/17 19:55	-	-	-	-
	P-1	NAI	48	740.82	716.31	14.65	4/6/17 20:50	717.66	1.35	○	4/6/17 21:10
	P-3	MRIR	36	681.37	652.48	16.15	4/6/17 20:35	653.98	1.50	○	4/6/17 21:55
	P-26	PWI	30	649.24	647.86	1.88	4/6/17 21:40	648.35	0.49	○	4/6/17 22:25
	P-7	PWI	48	649.09	625.23	3.33	4/6/17 13:00	626.67	1.44	○	4/6/17 18:30
	LV-16	CS	48	-	627.38	6.30	4/6/17 18:10	628.56	1.18	○	4/6/17 18:45
	FE-22	RVI	48	685.04	644.88	20.00	4/6/17 21:00	646.75	1.87	○	4/7/17 9:15
	A	CS	21	-	-	1.33	4/6/17 16:35	-	0.60	○	4/6/17 16:30
	B	CS	36	-	-	3.36	4/6/17 0:35	-	0.74	○	4/7/17 8:25
	C	CS	30	-	-	9.47	4/6/17 19:40	-	0.94	○	4/6/17 1:15
	P-8	RVI	48	645.40	621.80	25.88	4/7/17 11:00	623.75	1.95	○	4/7/17 9:50
	WE-14	CS	42	-	613.48	11.35	4/6/17 19:30	615.50	2.02	○	4/6/17 20:00
	LV-15	CS	60	636.29	617.03	9.62	4/5/17 20:35	618.93	1.90	○	4/6/17 1:05
	M-22 MP#1	CS	42	630.49	614.41	-	-	618.89	4.48	⦿	4/6/17 1:30
	M-22 MP#2	CS	42	630.49	614.41	-	-	622.16	7.75	⦿	4/7/17 5:45
	M-2	CS	27	636.70	612.39	14.82	4/5/17 23:25	614.46	2.07	○	4/6/17 0:20
	M-1	CS	72	630.59	607.59	21.21	4/5/17 23:35	615.27	7.68	⦿	4/5/17 23:50
	LV-14	CS	60	612.02	605.57	7.99	4/5/17 20:55	606.65	1.08	○	4/5/17 21:30
	P-28	RVI	54	629.02	607.92	6.64	4/6/17 0:30	610.32	2.40	○	4/6/17 21:20
	P-29	CS	42	-	-	8.76	4/6/17 21:25	-	2.52	○	4/6/17 21:20
	LV-20	CS	54	-	-	-	-	-	0.22	○	4/6/17 21:05
	LV-BASIN	RVI	54	632.00	602.01	25.28	4/6/17 1:35	607.61	5.60	⦿	4/6/17 20:45
	LV-4	CS	30	652.59	638.51	7.67	4/6/17 18:05	640.52	2.01	○	4/6/17 20:15
	LV-11	CS	42	-	-	12.40	4/6/17 0:05	-	1.27	○	4/6/17 0:25
	P-12	RVI	60	613.41	597.67	40.56	4/6/17 22:45	601.22	3.55	○	4/6/17 2:20
	P-9	MRIR	42	610.36	597.01	24.48	4/6/17 19:25	600.48	3.47	○	4/6/17 2:15
	P-10	RVI	66	607.65	595.62	76.98	4/6/17 19:50	599.70	4.08	○	4/6/17 2:20
	P-11	MRPIE	48	607.91	596.68	37.24	4/6/17 18:40	600.69	4.01	⦿	4/6/17 1:50
	P-13	MRPIE	54	613.22	586.85	33.98	4/5/17 22:10	592.35	5.50	⦿	4/6/17 2:00
	P-35	MRIR	54	597.62	584.15	46.61	4/5/17 21:45	590.83	6.68	⦿	4/6/17 2:00
	P-34	RVI	62	595.60	582.30	81.71	4/6/17 2:25	589.93	7.63	⦿	4/6/17 2:00
	P-33	MRPIE	48	597.01	585.22	36.67	4/5/17 21:25	590.76	5.54	⦿	4/6/17 1:55
	P-32	MRIR	66	597.03	578.79	49.81	4/5/17 21:50	587.26	8.47	⦿	4/6/17 1:20
	P-31	RVI	78	599.00	578.71	99.64	4/6/17 21:20	587.53	8.82	⦿	4/6/17 2:00
	P-30	MRPIE	60	593.00	580.29	50.27	4/6/17 3:35	587.56	7.27	⦿	4/6/17 1:40
	P-14	RVI	78	604.91	570.93	105.16	4/6/17 12:50	580.91	9.98	⦿	4/6/17 0:35
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.86	4/5/17 22:45	652.97	1.30	○	4/5/17 22:45
	P-17	LRIR	30	641.21	632.39	5.75	4/6/17 10:55	633.49	1.10	○	4/6/17 11:05
	FE-19	CS	-	-	-	6.83	4/6/17 9:05	-	-	-	-
	WE-25	CS	27	-	-	8.87	4/6/17 20:25	-	1.55	○	4/6/17 20:15
	P-19	RVI	48	630.34	621.54	23.57	4/6/17 18:50	623.96	2.42	○	4/6/17 19:25
	WE-28	CS	30	-	-	7.15	4/5/17 20:50	-	1.22	○	4/5/17 21:10
	P-21	RVI	54	620.17	608.14	32.70	4/6/17 21:15	610.24	2.10	○	4/6/17 19:25
	P-25	RVI	60	598.36	588.06	47.86	4/5/17 23:25	590.89	2.83	○	4/5/17 22:50
	P-20	WI	48	630.66	619.72	13.22	4/5/17 20:35	622.51	2.79	○	4/5/17 20:55
	P-24	RVI	36	594.24	584.52	21.22	4/5/17 21:35	586.95	2.43	○	4/6/17 0:50
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	179.35	4/6/17 23:10	571.64	16.74	⦿	4/5/17 23:55
	WC-S-1	RVI	66	586.88	500.94	188.89	4/6/17 22:50	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	130.28	4/6/17 0:00	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

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

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 4 4/19-20/2017 1.15 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	12.84	4/20/17 19:50	-	-	-	-
	P-1	NAI	48	740.82	716.31	14.22	4/20/17 20:55	717.67	1.36	○	4/20/17 21:10
	P-3	MRIR	36	681.37	652.48	16.35	4/20/17 21:55	654.00	1.52	○	4/20/17 22:40
	P-26	PWI	30	649.24	647.86	1.91	4/20/17 22:05	648.35	0.49	○	4/20/17 22:25
	P-7	PWI	48	649.09	625.23	3.00	4/20/17 23:20	626.59	1.36	○	4/20/17 23:55
	LV-16	CS	48	-	627.38	7.54	4/19/17 16:50	628.74	1.36	○	4/19/17 17:10
	FE-22	RVI	48	685.04	644.88	15.95	4/20/17 20:20	646.55	1.67	○	4/20/17 20:20
	A	CS	21	-	-	2.16	4/20/17 15:25	-	0.72	○	4/20/17 16:15
	B	CS	36	-	-	4.70	4/20/17 16:10	-	0.85	○	4/20/17 16:40
	C	CS	30	-	-	14.94	4/20/17 16:25	-	1.12	○	4/20/17 16:40
	P-8	RVI	48	645.40	621.80	20.84	4/20/17 20:50	623.50	1.70	○	4/20/17 21:15
	WE-14	CS	42	-	613.48	8.99	4/20/17 16:25	615.11	1.63	○	4/20/17 17:05
	LV-15	CS	60	636.29	617.03	9.46	4/19/17 17:10	618.85	1.82	○	4/19/17 17:50
	M-22 MP#1	CS	42	630.49	614.41	-	-	618.24	3.83	◉	4/19/17 18:50
	M-22 MP#2	CS	42	630.49	614.41	-	-	621.74	7.33	◉	4/21/17 3:00
	M-2	CS	27	636.70	612.39	9.26	4/20/17 16:25	613.95	1.56	○	4/20/17 16:35
	M-1	CS	72	630.59	607.59	14.77	4/20/17 16:10	611.57	3.98	○	4/20/17 17:35
	LV-14	CS	60	612.02	605.57	7.76	4/19/17 17:35	606.67	1.10	○	4/19/17 17:50
	P-28	RVI	54	629.02	607.92	6.28	4/20/17 16:40	610.24	2.32	○	4/20/17 18:25
	P-29	CS	42	-	-	10.03	4/20/17 17:40	-	2.48	○	4/20/17 18:20
	LV-20	CS	54	-	-	-	-	-	0.18	○	4/21/17 13:35
	LV-BASIN	RVI	54	632.00	602.01	24.36	4/20/17 17:40	606.76	4.75	◉	4/20/17 19:05
	LV-4	CS	30	652.59	638.51	7.81	4/20/17 16:05	640.62	2.11	○	4/20/17 16:35
	LV-11	CS	42	-	-	10.71	4/20/17 18:35	-	1.18	○	4/20/17 19:20
	P-12	RVI	60	613.41	597.67	38.39	4/20/17 20:00	600.52	2.85	○	4/20/17 22:00
	P-9	MRIR	42	610.36	597.01	19.69	4/20/17 21:35	599.57	2.56	○	4/20/17 22:05
	P-10	RVI	66	607.65	595.62	56.33	4/20/17 21:35	598.61	2.99	○	4/20/17 22:15
	P-11	MRPIE	48	607.91	596.68	28.58	4/20/17 21:30	599.47	2.79	○	4/20/17 22:05
	P-13	MRPIE	54	613.22	586.85	31.10	4/19/17 19:15	590.04	3.19	○	4/19/17 19:50
	P-35	MRIR	54	597.62	584.15	36.16	4/20/17 22:10	587.53	3.38	○	4/20/17 19:15
	P-34	RVI	62	595.60	582.30	53.84	4/20/17 22:10	586.17	3.87	○	4/20/17 19:50
	P-33	MRPIE	48	597.01	585.22	27.89	4/20/17 17:10	587.54	2.32	○	4/20/17 17:40
	P-32	MRIR	66	597.03	578.79	41.94	4/20/17 18:55	582.80	4.01	○	4/20/17 20:00
	P-31	RVI	78	599.00	578.71	73.70	4/20/17 19:35	583.13	4.42	○	4/20/17 20:00
	P-30	MRPIE	60	593.00	580.29	39.20	4/20/17 19:25	583.65	3.36	○	4/20/17 19:45
	P-14	RVI	78	604.91	570.93	88.63	4/19/17 20:50	577.96	7.03	◉	4/20/17 19:40
Lower Rouge	P-15	WRVI	24	667.57	651.67	3.13	4/20/17 17:20	652.97	1.30	○	4/20/17 17:50
	P-17	LRIR	30	641.21	632.39	5.66	4/20/17 19:15	633.49	1.10	○	4/20/17 20:55
	FE-19	CS	-	-	-	0.00	4/21/17 14:05	-	-	-	-
	WE-25	CS	27	-	-	6.28	4/20/17 16:50	-	1.23	○	4/20/17 17:10
	P-19	RVI	48	630.34	621.54	16.84	4/20/17 17:15	623.53	1.99	○	4/20/17 16:55
	WE-28	CS	30	-	-	5.91	4/20/17 16:25	-	1.13	○	4/20/17 16:40
	P-21	RVI	54	620.17	608.14	26.08	4/20/17 16:45	610.05	1.91	○	4/20/17 17:15
	P-25	RVI	60	598.36	588.06	41.24	4/20/17 20:30	590.63	2.57	○	4/20/17 17:20
	P-20	WI	48	630.66	619.72	13.29	4/20/17 16:20	622.55	2.83	○	4/20/17 16:45
	P-24	RVI	36	594.24	584.52	21.17	4/20/17 17:35	586.42	1.90	○	4/20/17 18:30
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	150.63	4/20/17 20:10	571.40	16.50	◉	4/20/17 18:40
	WC-S-1	RVI	66	586.88	500.94	156.52	4/20/17 19:50	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	93.32	4/20/17 20:25	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

Interceptor 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 7-1 continued
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 5/4-5/2017 1.59 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	13.14	5/5/17 15:15	-	-	-	-
	P-1	NAI	48	740.82	716.31	15.32	5/5/17 16:00	717.69	1.38	○	5/5/17 16:45
	P-3	MRIR	36	681.37	652.48	17.53	5/5/17 17:10	654.04	1.56	○	5/5/17 17:40
	P-26	PWI	30	649.24	647.86	2.20	5/5/17 17:10	648.40	0.54	○	5/5/17 17:25
	P-7	PWI	48	649.09	625.23	3.42	5/5/17 17:35	626.67	1.44	○	5/5/17 18:30
	LV-16	CS	48	-	627.38	6.59	5/4/17 22:00	628.53	1.15	○	5/4/17 22:35
	FE-22	RVI	48	685.04	644.88	15.45	5/6/17 12:25	646.49	1.61	○	5/6/17 12:25
	A	CS	21	-	-	1.49	5/5/17 14:40	-	0.60	○	5/5/17 14:50
	B	CS	36	-	-	3.96	5/5/17 14:30	-	0.78	○	5/5/17 14:45
	C	CS	30	-	-	12.83	5/5/17 15:50	-	1.01	○	5/5/17 15:05
	P-8	RVI	48	645.40	621.80	20.08	5/6/17 12:50	623.46	1.66	○	5/6/17 13:10
	WE-14	CS	42	-	613.48	11.09	5/5/17 16:45	615.39	1.91	○	5/5/17 17:30
	LV-15	CS	60	636.29	617.03	9.36	5/5/17 18:40	618.92	1.89	○	5/5/17 18:05
	M-22 MP#1	CS	42	630.49	614.41	-	-	618.92	4.51	◉	5/5/17 18:25
	M-22 MP#2	CS	42	630.49	614.41	-	-	622.44	8.03	◉	5/6/17 1:15
	M-2	CS	27	636.70	612.39	13.38	5/5/17 17:10	614.29	1.90	○	5/5/17 17:35
	M-1	CS	72	630.59	607.59	20.90	5/5/17 18:25	615.47	7.88	◉	5/5/17 18:50
	LV-14	CS	60	612.02	605.57	7.75	5/5/17 17:35	606.63	1.06	○	5/5/17 18:00
	P-28	RVI	54	629.02	607.92	6.13	5/5/17 18:35	610.48	2.56	○	5/5/17 18:30
	P-29	CS	42	-	-	9.36	5/5/17 17:40	-	2.59	○	5/5/17 18:25
	LV-20	CS	54	-	-	-	-	-	0.19	○	5/5/17 17:50
	LV-BASIN	RVI	54	632.00	602.01	24.71	5/5/17 20:55	607.54	5.53	◉	5/5/17 22:25
	LV-4	CS	30	652.59	638.51	7.83	5/5/17 14:30	640.59	2.08	○	5/5/17 14:40
	LV-11	CS	42	-	-	13.86	5/5/17 17:20	-	1.34	○	5/5/17 17:40
	P-12	RVI	60	613.41	597.67	42.10	5/5/17 20:10	600.90	3.23	○	5/5/17 18:15
	P-9	MRIR	42	610.36	597.01	23.49	5/5/17 20:35	600.13	3.12	○	5/5/17 20:55
	P-10	RVI	66	607.65	595.62	69.09	5/5/17 19:50	599.17	3.55	○	5/5/17 20:50
	P-11	MRPIE	48	607.91	596.68	34.77	5/5/17 20:20	600.04	3.36	○	5/5/17 18:35
	P-13	MRPIE	54	613.22	586.85	34.53	5/5/17 16:25	590.38	3.53	○	5/5/17 19:20
	P-35	MRIR	54	597.62	584.15	43.98	5/5/17 19:25	588.37	4.22	○	5/5/17 19:25
	P-34	RVI	62	595.60	582.30	72.28	5/5/17 18:30	587.23	4.93	○	5/5/17 19:25
	P-33	MRPIE	48	597.01	585.22	36.20	5/5/17 18:20	588.29	3.07	○	5/5/17 19:10
	P-32	MRIR	66	597.03	578.79	50.35	5/5/17 21:10	584.43	5.64	◉	5/5/17 19:40
	P-31	RVI	78	599.00	578.71	97.20	5/5/17 19:05	584.41	5.70	○	5/5/17 19:50
	P-30	MRPIE	60	593.00	580.29	50.50	5/5/17 19:20	584.59	4.30	○	5/5/17 20:10
	P-14	RVI	78	604.91	570.93	93.27	5/5/17 15:30	578.61	7.68	◉	5/5/17 19:40
Lower Rouge	P-15	WRVI	24	667.57	651.67	3.24	5/5/17 18:05	653.02	1.35	○	5/5/17 18:30
	P-17	LRIR	30	641.21	632.39	5.68	5/5/17 16:15	633.51	1.12	○	5/5/17 20:05
	FE-19	CS	-	-	-	6.82	5/4/17 21:05	-	-	-	-
	WE-25	CS	27	-	-	8.59	5/5/17 17:35	-	1.49	○	5/5/17 17:40
	P-19	RVI	48	630.34	621.54	23.32	5/5/17 17:10	623.82	2.28	○	5/5/17 17:25
	WE-28	CS	30	-	-	7.53	5/5/17 17:35	-	1.27	○	5/5/17 17:55
	P-21	RVI	54	620.17	608.14	31.69	5/5/17 17:45	610.22	2.08	○	5/5/17 18:15
	P-25	RVI	60	598.36	588.06	47.38	5/5/17 18:35	590.83	2.77	○	5/5/17 18:45
	P-20	WI	48	630.66	619.72	12.54	5/5/17 17:40	622.36	2.64	○	5/5/17 18:10
	P-24	RVI	36	594.24	584.52	20.53	5/5/17 17:20	586.54	2.02	○	5/5/17 18:50
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	167.72	5/6/17 0:40	570.28	15.38	◉	5/5/17 20:30
	WC-S-1	RVI	66	586.88	500.94	175.77	5/6/17 0:20	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	128.28	5/5/17 21:10	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

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

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 6 7/7/2017 1.25 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	8.47	7/7/17 19:30	-	-	-	-
	P-1	NAI	48	740.82	716.31	10.32	7/7/17 20:25	717.45	1.14	○	7/7/17 20:30
	P-3	MRIR	36	681.37	652.48	11.62	7/7/17 21:20	653.69	1.21	○	7/7/17 20:45
	P-26	PWI	30	649.24	647.86	0.66	7/7/17 20:25	648.14	0.28	○	7/7/17 20:45
	P-7	PWI	48	649.09	625.23	1.94	7/7/17 20:05	626.38	1.15	○	7/7/17 20:55
	LV-16	CS	48	-	627.38	8.08	7/7/17 19:35	628.66	1.28	○	7/7/17 20:05
	FE-22	RVI	48	685.04	644.88	0.94	7/7/17 20:40	645.36	0.48	○	7/7/17 21:20
	A	CS	21	-	-	1.59	7/7/17 19:25	-	0.66	○	7/7/17 19:55
	B	CS	36	-	-	4.70	7/7/17 19:50	-	0.84	○	7/7/17 20:15
	C	CS	30	-	-	13.10	7/7/17 20:00	-	1.08	○	7/7/17 20:15
	P-8	RVI	48	645.40	621.80	2.39	7/7/17 21:05	622.46	0.66	○	7/7/17 22:45
	WE-14	CS	42	-	613.48	9.15	7/7/17 20:10	615.37	1.89	○	7/7/17 20:40
	LV-15	CS	60	636.29	617.03	10.93	7/7/17 19:30	618.94	1.91	○	7/7/17 20:00
	M-22 MP#1	CS	42	630.49	614.41	-	-	618.32	3.91	◉	7/7/17 20:40
	M-22 MP#2	CS	42	630.49	614.41	-	-	621.88	7.47	◉	7/7/17 21:00
	M-2	CS	27	636.70	612.39	12.13	7/7/17 20:10	614.22	1.83	○	7/7/17 20:30
	M-1	CS	72	630.59	607.59	17.04	7/7/17 19:30	613.12	5.53	○	7/7/17 21:10
	LV-14	CS	60	612.02	605.57	8.83	7/7/17 19:50	606.76	1.19	○	7/7/17 20:15
	P-28	RVI	54	629.02	607.92	2.66	7/7/17 20:10	609.19	1.27	○	7/7/17 21:35
	P-29	CS	42	-	-	6.07	7/7/17 21:00	-	1.54	○	7/7/17 21:30
	LV-20	CS	54	-	-	-	-	-	0.15	○	7/7/17 15:05
	LV-BASIN	RVI	54	632.00	602.01	14.37	7/7/17 21:15	605.19	3.18	○	7/7/17 21:55
	LV-4	CS	30	652.59	638.51	5.26	7/7/17 19:20	640.24	1.73	○	7/7/17 19:40
	LV-11	CS	42	-	-	5.70	7/7/17 20:10	-	0.87	○	7/7/17 20:40
	P-12	RVI	60	613.41	597.67	21.25	7/7/17 22:20	599.99	2.32	○	7/7/17 22:10
	P-9	MRIR	42	610.36	597.01	11.41	7/7/17 21:40	598.78	1.77	○	7/7/17 22:15
	P-10	RVI	66	607.65	595.62	46.46	7/7/17 21:10	598.30	2.68	○	7/7/17 21:35
	P-11	MRPIE	48	607.91	596.68	30.62	7/7/17 21:00	599.65	2.97	○	7/7/17 21:20
	P-13	MRPIE	54	613.22	586.85	25.79	7/7/17 21:10	589.57	2.72	○	7/7/17 21:45
	P-35	MRIR	54	597.62	584.15	31.46	7/7/17 21:40	587.37	3.22	○	7/7/17 22:00
	P-34	RVI	62	595.60	582.30	46.12	7/7/17 21:20	586.05	3.75	○	7/7/17 21:50
	P-33	MRPIE	48	597.01	585.22	29.57	7/7/17 20:55	587.65	2.43	○	7/7/17 21:15
	P-32	MRIR	66	597.03	578.79	36.54	7/7/17 22:10	582.71	3.92	○	7/7/17 22:40
	P-31	RVI	78	599.00	578.71	69.08	7/7/17 21:45	583.09	4.38	○	7/7/17 22:40
	P-30	MRPIE	60	593.00	580.29	36.61	7/7/17 21:40	583.54	3.25	○	7/7/17 22:30
	P-14	RVI	78	604.91	570.93	92.96	7/7/17 22:30	575.31	4.38	○	7/7/17 23:10
Lower Rouge	P-15	WRVI	24	667.57	651.67	1.83	7/7/17 6:45	652.62	0.95	○	7/7/17 7:05
	P-17	LRIR	30	641.21	632.39	4.16	7/7/17 23:55	633.32	0.93	○	7/7/17 9:55
	FE-19	CS	-	-	-	0.00	7/7/17 23:05	-	-	-	-
	WE-25	CS	27	-	-	5.82	7/7/17 20:55	-	1.16	○	7/7/17 21:25
	P-19	RVI	48	630.34	621.54	12.73	7/7/17 5:45	623.25	1.71	○	7/7/17 6:15
	WE-28	CS	30	-	-	7.29	7/7/17 20:15	-	1.32	○	7/7/17 20:40
	P-21	RVI	54	620.17	608.14	20.51	7/7/17 21:25	609.83	1.69	○	7/7/17 21:50
	P-25	RVI	60	598.36	588.06	29.75	7/7/17 21:55	590.29	2.23	○	7/7/17 22:40
	P-20	WI	48	630.66	619.72	12.10	7/7/17 5:40	622.27	2.55	○	7/7/17 6:05
	P-24	RVI	36	594.24	584.52	15.03	7/7/17 7:00	585.85	1.33	○	7/7/17 7:05
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	143.23	7/7/17 23:55	-	-	-	-
	WC-S-1	RVI	66	586.88	500.94	133.05	7/7/17 23:55	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	73.17	7/7/17 23:00	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

Interceptor 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 7-1 continued
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 8/29-30/2017 1.42 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	8.53	8/29/17 14:55	-	-	-	-
	P-1	NAI	48	740.82	716.31	9.93	8/29/17 16:00	717.42	1.11	○	8/29/17 16:25
	P-3	MRIR	36	681.37	652.48	12.73	8/29/17 13:35	653.72	1.24	○	8/29/17 13:40
	P-26	PWI	30	649.24	647.86	0.69	8/29/17 13:45	648.15	0.29	○	8/29/17 14:00
	P-7	PWI	48	649.09	625.23	2.36	8/29/17 14:40	626.50	1.27	○	8/29/17 15:05
	LV-16	CS	48	-	627.38	5.84	8/29/17 14:00	628.47	1.09	○	8/29/17 14:35
	FE-22	RVI	48	685.04	644.88	0.81	8/29/17 17:35	645.33	0.45	○	8/29/17 17:40
	A	CS	21	-	-	0.79	8/29/17 16:20	-	0.48	○	8/28/17 17:05
	B	CS	36	-	-	1.48	8/29/17 13:10	-	0.53	○	8/29/17 13:25
	C	CS	30	-	-	5.32	8/29/17 13:10	-	0.70	○	8/29/17 13:25
	P-8	RVI	48	645.40	621.80	2.78	8/29/17 13:55	622.52	0.72	○	8/29/17 14:15
	WE-14	CS	42	-	613.48	9.57	8/29/17 13:45	615.42	1.94	○	8/29/17 14:10
	LV-15	CS	60	636.29	617.03	5.97	8/29/17 13:30	618.52	1.49	○	8/29/17 14:15
	M-22 MP#1	CS	42	630.49	614.41	-	-	616.17	1.76	○	8/29/17 14:50
	M-22 MP#2	CS	42	630.49	614.41	-	-	621.31	6.90	◉	8/29/17 19:55
	M-2	CS	27	636.70	612.39	7.83	8/29/17 14:00	613.79	1.40	○	8/29/17 14:40
	M-1	CS	72	630.59	607.59	12.33	8/29/17 14:00	609.86	2.27	○	8/29/17 15:00
	LV-14	CS	60	612.02	605.57	3.29	8/28/17 18:50	606.27	0.70	○	8/28/17 19:05
	P-28	RVI	54	629.02	607.92	3.64	8/28/17 17:40	609.52	1.60	○	8/28/17 19:00
	P-29	CS	42	-	-	7.94	8/28/17 18:15	-	1.83	○	8/28/17 18:45
	LV-20	CS	54	-	-	-	-	-	0.22	○	8/29/17 22:30
	LV-BASIN	RVI	54	632.00	602.01	16.91	8/28/17 18:45	605.46	3.45	○	8/28/17 19:35
	LV-4	CS	30	652.59	638.51	6.65	8/29/17 13:35	640.69	2.18	○	8/29/17 14:20
	LV-11	CS	42	-	-	6.27	8/29/17 16:55	-	0.91	○	8/29/17 17:35
	P-12	RVI	60	613.41	597.67	23.22	8/28/17 20:25	599.90	2.23	○	8/28/17 20:50
	P-9	MRIR	42	610.36	597.01	9.33	8/28/17 20:15	598.54	1.53	○	8/28/17 20:45
	P-10	RVI	66	607.65	595.62	35.99	8/28/17 20:00	597.90	2.28	○	8/28/17 20:35
	P-11	MRPIE	48	607.91	596.68	22.53	8/29/17 15:15	599.04	2.36	○	8/29/17 15:45
	P-13	MRPIE	54	613.22	586.85	22.02	8/28/17 19:40	589.40	2.55	○	8/28/17 20:10
	P-35	MRIR	54	597.62	584.15	23.36	8/28/17 21:10	586.86	2.71	○	8/28/17 21:05
	P-34	RVI	62	595.60	582.30	32.57	8/28/17 20:50	585.30	3.00	○	8/28/17 21:00
	P-33	MRPIE	48	597.01	585.22	19.08	8/28/17 20:45	587.01	1.79	○	8/28/17 21:15
	P-32	MRIR	66	597.03	578.79	26.86	8/28/17 20:50	581.71	2.92	○	8/28/17 21:50
	P-31	RVI	78	599.00	578.71	48.71	8/28/17 20:50	582.18	3.47	○	8/28/17 21:55
	P-30	MRPIE	60	593.00	580.29	28.78	8/28/17 20:40	583.09	2.80	○	8/28/17 21:10
	P-14	RVI	78	604.91	570.93	74.97	8/28/17 23:10	576.61	5.68	○	8/28/17 23:00
Lower Rouge	P-15	WRVI	24	667.57	651.67	1.34	8/29/17 13:25	652.49	0.82	○	8/29/17 13:40
	P-17	LRIR	30	641.21	632.39	4.20	8/29/17 12:35	633.33	0.94	○	8/28/17 20:25
	FE-19	CS	-	-	-	0.00	8/29/17 18:05	-	-	-	-
	WE-25	CS	27	-	-	2.51	8/28/17 19:30	-	0.75	○	8/29/17 14:15
	P-19	RVI	48	630.34	621.54	13.34	8/29/17 13:25	623.34	1.80	○	8/29/17 13:50
	WE-28	CS	30	-	-	6.50	8/29/17 13:35	-	1.25	○	8/29/17 14:00
	P-21	RVI	54	620.17	608.14	22.60	8/29/17 13:55	609.96	1.82	○	8/29/17 14:05
	P-25	RVI	60	598.36	588.06	28.43	8/29/17 14:40	590.53	2.47	○	8/29/17 14:45
	P-20	WI	48	630.66	619.72	12.80	8/29/17 13:55	622.47	2.75	○	8/29/17 14:15
	P-24	RVI	36	594.24	584.52	16.50	8/29/17 14:55	585.98	1.46	○	8/29/17 15:25
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	124.92	8/28/17 23:50	571.43	16.53	◉	8/28/17 22:55
	WC-S-1	RVI	66	586.88	500.94	121.22	8/29/17 1:40	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	52.06	8/28/17 22:05	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

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

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 8 10/10-11/2017 1.09 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	14.16	10/11/2017 9:25	-	-	-	-
	P-1	NAI	48	740.82	716.31	15.97	10/11/2017 10:25	717.75	1.44	○	10/11/2017 10:30
	P-3	MRIR	36	681.37	652.48	18.40	10/11/2017 11:45	654.11	1.63	○	10/11/2017 11:25
	P-26	PWI	30	649.24	647.86	2.01	10/11/2017 10:25	648.36	0.50	○	10/11/2017 11:25
	P-7	PWI	48	649.09	625.23	2.63	10/11/2017 12:20	626.55	1.32	○	10/11/2017 13:05
	LV-16	CS	48	-	627.38	5.60	10/11/2017 12:20	628.45	1.07	○	10/11/2017 12:45
	FE-22	RVI	48	685.04	644.88	0.84	10/11/2017 18:55	645.33	0.45	○	10/11/2017 19:50
	A	CS	21	-	-	0.75	10/11/2017 9:10	-	0.56	○	10/11/2017 9:10
	B	CS	36	-	-	2.51	10/11/2017 8:50	-	0.61	○	10/11/2017 10:20
	C	CS	30	-	-	7.41	10/11/2017 7:20	-	0.81	○	10/11/2017 8:00
	P-8	RVI	48	645.40	621.80	2.29	10/11/2017 20:55	622.47	0.67	○	10/11/2017 21:05
	WE-14	CS	42	-	613.48	6.51	10/11/2017 10:40	614.95	1.47	○	10/11/2017 11:25
	LV-15	CS	60	636.29	617.03	6.77	10/11/2017 12:30	618.63	1.60	○	10/11/2017 12:55
	M-22 MP#1	CS	42	630.49	614.41	-	-	617.27	2.86	○	10/11/2017 13:40
	M-22 MP#2	CS	42	630.49	614.41	-	-	621.55	7.14	◉	10/11/2017 18:45
	M-2	CS	27	636.70	612.39	5.94	10/11/2017 10:25	613.61	1.22	○	10/11/2017 10:45
	M-1	CS	72	630.59	607.59	8.66	10/11/2017 9:05	609.11	1.52	○	10/11/2017 9:35
	LV-14	CS	60	612.02	605.57	3.94	10/11/2017 13:00	606.34	0.77	○	10/11/2017 13:25
	P-28	RVI	54	629.02	607.92	3.00	10/11/2017 8:10	611.30	3.38	○	10/11/2017 23:55
	P-29	CS	42	-	-	5.60	10/11/2017 9:00	-	3.97	⊗	10/11/2017 23:55
	LV-20	CS	54	-	-	-	-	-	0.21	○	10/11/2017 12:10
	LV-BASIN	RVI	54	632.00	602.01	15.19	10/11/2017 12:25	605.39	3.38	○	10/11/2017 13:35
	LV-4	CS	30	652.59	638.51	5.78	10/11/2017 10:05	640.20	1.69	○	10/11/2017 10:35
	LV-11	CS	42	-	-	7.72	10/11/2017 13:30	-	1.01	○	10/11/2017 13:55
	P-12	RVI	60	613.41	597.67	25.68	10/11/2017 13:45	600.00	2.33	○	10/11/2017 14:10
	P-9	MRIR	42	610.36	597.01	11.11	10/11/2017 13:40	598.73	1.72	○	10/11/2017 14:05
	P-10	RVI	66	607.65	595.62	40.87	10/11/2017 13:35	598.06	2.44	○	10/11/2017 14:05
	P-11	MRPIE	48	607.91	596.68	22.43	10/11/2017 13:25	599.06	2.38	○	10/11/2017 13:55
	P-13	MRPIE	54	613.22	586.85	24.34	10/11/2017 10:15	589.51	2.66	○	10/11/2017 10:15
	P-35	MRIR	54	597.62	584.15	25.86	10/11/2017 13:45	586.95	2.80	○	10/11/2017 14:45
	P-34	RVI	62	595.60	582.30	36.50	10/11/2017 14:05	585.44	3.14	○	10/11/2017 14:35
	P-33	MRPIE	48	597.01	585.22	19.62	10/11/2017 13:50	587.03	1.81	○	10/11/2017 14:25
	P-32	MRIR	66	597.03	578.79	29.95	10/11/2017 14:05	581.63	2.84	○	10/11/2017 13:55
	P-31	RVI	78	599.00	578.71	49.72	10/11/2017 13:30	582.08	3.37	○	10/11/2017 14:00
	P-30	MRPIE	60	593.00	580.29	29.81	10/11/2017 14:40	583.13	2.84	○	10/11/2017 15:10
	P-14	RVI	78	604.91	570.93	62.89	10/11/2017 13:50	574.33	3.40	○	10/11/2017 14:20
Lower Rouge	P-15	WRVI	24	667.57	651.67	1.33	10/11/2017 8:35	652.50	0.83	○	10/11/2017 12:45
	P-17	LRIR	30	641.21	632.39	3.39	10/11/2017 10:10	633.23	0.84	○	10/11/2017 10:55
	FE-19	CS	-	-	-	0.00	10/11/2017 18:05	-	-	-	-
	WE-25	CS	27	-	-	3.13	10/11/2017 10:50	-	0.83	○	10/11/2017 11:15
	P-19	RVI	48	630.34	621.54	8.28	10/11/2017 11:00	622.94	1.40	○	10/11/2017 11:30
	WE-28	CS	30	-	-	2.43	10/11/2017 12:20	-	0.59	○	10/11/2017 12:50
	P-21	RVI	54	620.17	608.14	12.36	10/11/2017 11:40	609.45	1.31	○	10/11/2017 12:10
	P-25	RVI	60	598.36	588.06	21.35	10/11/2017 11:25	589.39	1.33	○	10/11/2017 12:00
	P-20	WI	48	630.66	619.72	4.93	10/11/2017 8:50	621.23	1.51	○	10/11/2017 9:15
	P-24	RVI	36	594.24	584.52	10.30	10/11/2017 10:15	585.61	1.09	○	10/11/2017 10:45
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	116.66	10/11/2017 13:35	565.08	10.18	◉	10/11/2017 10:20
	WC-S-1	RVI	66	586.88	500.94	95.81	10/11/2017 14:15	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	53.03	10/11/2017 14:30	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

Interceptor 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 7-1 continued
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 11/17-18/2017 1.81 in					
						Peak Recorded Hourly Flow Rate (cfs)	Time	Peak Recorded Depth (feet)			Time
								Elevation (NAVD88)	Above Invert	-	
Middle Rouge	BG-1	HRTS	42	821.59	797.17	16.15	11/18/2017 15:10	-	-	-	-
	P-1	NAI	48	740.82	716.31	17.52	11/18/2017 16:15	717.85	1.54	○	11/18/2017 17:00
	P-3	MRIR	36	681.37	652.48	19.16	11/18/2017 17:40	654.14	1.66	○	11/18/2017 17:45
	P-26	PWI	30	649.24	647.86	2.80	11/18/2017 17:10	648.47	0.61	○	11/18/2017 17:40
	P-7	PWI	48	649.09	625.23	3.37	11/18/2017 18:40	626.66	1.43	○	11/18/2017 19:00
	LV-16	CS	48	-	627.38	5.58	11/18/2017 14:30	628.43	1.05	○	11/18/2017 14:50
	FE-22	RVI	48	685.04	644.88	2.00	11/19/2017 12:00	645.48	0.60	○	11/19/2017 10:45
	A	CS	21	-	-	1.62	11/18/2017 14:15	-	0.67	○	11/18/2017 14:45
	B	CS	36	-	-	4.78	11/18/2017 14:55	-	0.82	○	11/18/2017 15:30
	C	CS	30	-	-	13.48	11/18/2017 14:55	-	2.50	⊗	11/19/2017 7:50
	P-8	RVI	48	645.40	621.80	4.27	11/19/2017 11:40	622.61	0.81	○	11/19/2017 11:45
	WE-14	CS	42	-	613.48	10.73	11/18/2017 14:50	615.46	1.98	○	11/18/2017 15:30
	LV-15	CS	60	636.29	617.03	11.52	11/18/2017 14:35	619.17	2.14	○	11/18/2017 21:20
	M-22 MP#1	CS	42	630.49	614.41	-	-	619.22	4.81	◉	11/18/2017 21:40
	M-22 MP#2	CS	42	630.49	614.41	-	-	623.15	8.74	◉	11/19/2017 6:40
	M-2	CS	27	636.70	612.39	13.28	11/18/2017 15:00	614.31	1.92	○	11/18/2017 15:40
	M-1	CS	72	630.59	607.59	19.43	11/18/2017 20:30	615.08	7.49	◉	11/18/2017 21:20
	LV-14	CS	60	612.02	605.57	8.61	11/18/2017 15:05	606.72	1.15	○	11/18/2017 15:35
	P-28	RVI	54	629.02	607.92	5.08	11/18/2017 15:20	609.90	1.98	○	11/18/2017 22:10
	P-29	CS	42	-	-	8.64	11/18/2017 16:25	-	2.13	○	11/18/2017 21:50
	LV-20	CS	54	-	-	-	-	-	0.19	○	11/18/2017 22:30
	LV-BASIN	RVI	54	632.00	602.01	23.66	11/18/2017 16:05	606.94	4.93	◉	11/18/2017 22:05
	LV-4	CS	30	652.59	638.51	7.91	11/18/2017 14:45	640.64	2.13	○	11/18/2017 15:05
	LV-11	CS	42	-	-	13.06	11/18/2017 18:50	-	1.30	○	11/18/2017 18:20
	P-12	RVI	60	613.41	597.67	38.35	11/18/2017 21:45	600.74	3.07	○	11/18/2017 21:50
	P-9	MRIR	42	610.36	597.01	22.51	11/18/2017 21:05	599.96	2.95	○	11/18/2017 21:40
	P-10	RVI	66	607.65	595.62	64.96	11/18/2017 21:00	599.08	3.46	○	11/18/2017 21:35
	P-11	MRPIE	48	607.91	596.68	34.87	11/18/2017 21:20	600.16	3.48	○	11/18/2017 21:55
	P-13	MRPIE	54	613.22	586.85	32.65	11/18/2017 16:35	591.97	5.12	◉	11/18/2017 22:25
	P-35	MRIR	54	597.62	584.15	41.64	11/18/2017 18:45	590.03	5.88	◉	11/18/2017 22:00
	P-34	RVI	62	595.60	582.30	67.17	11/19/2017 0:10	589.01	6.71	◉	11/19/2017 0:50
	P-33	MRPIE	48	597.01	585.22	31.59	11/18/2017 16:55	589.93	4.71	◉	11/18/2017 22:05
	P-32	MRIR	66	597.03	578.79	31.25	11/18/2017 4:55	586.70	7.91	◉	11/18/2017 21:55
	P-31	RVI	78	599.00	578.71	94.04	11/19/2017 0:25	587.05	8.34	◉	11/18/2017 22:00
	P-30	MRPIE	60	593.00	580.29	45.02	11/18/2017 21:10	587.08	6.79	◉	11/18/2017 21:55
	P-14	RVI	78	604.91	570.93	102.41	11/19/2017 2:05	580.07	9.14	◉	11/18/2017 18:10
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.74	11/18/2017 15:55	652.82	1.15	○	11/18/2017 16:25
	P-17	LRIR	30	641.21	632.39	3.66	11/19/2017 19:55	633.27	0.88	○	11/19/2017 20:40
	FE-19	CS	-	-	-	0.00	11/18/2017 15:05	-	-	-	-
	WE-25	CS	27	-	-	6.56	11/18/2017 15:20	-	1.23	○	11/18/2017 16:10
	P-19	RVI	48	630.34	621.54	14.65	11/18/2017 15:20	623.40	1.86	○	11/18/2017 15:50
	WE-28	CS	30	-	-	7.87	11/18/2017 15:15	-	1.34	○	11/18/2017 15:15
	P-21	RVI	54	620.17	608.14	25.36	11/18/2017 15:45	609.99	1.85	○	11/18/2017 16:20
	P-25	RVI	60	598.36	588.06	45.58	11/18/2017 16:40	590.79	2.73	○	11/18/2017 17:10
	P-20	WI	48	630.66	619.72	12.93	11/18/2017 15:05	622.39	2.67	○	11/18/2017 15:40
	P-24	RVI	36	594.24	584.52	19.83	11/18/2017 16:10	586.50	1.98	○	11/18/2017 16:50
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	165.31	11/19/2017 1:10	571.18	16.28	◉	11/18/2017 17:05
	WC-S-1	RVI	66	586.88	500.94	174.92	11/18/2017 22:30	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	76.16	11/18/2017 23:30	-	-	-	-
	WC-S-3	MRIR	48	599.79	561.87			-	-	-	-

Interceptor Key

CS	Community Sewer
HRTS	Huron Rouge Trunk Sewer
LRIR	Lower Rouge Interceptor Relief
NWI	Northwest Interceptor
MRPIE	Middle Rouge Parkway Interceptor Extension
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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: 2/28/2017
Stop Date: 3/1/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.31	0.42	0.45	0.81	0.88	0.97	0.98	0.98	0.97
R-11	0.68	0.81	0.87	1.26	1.64	1.73	1.77	1.77	1.73
R-12	0.34	0.45	0.50	0.93	1.11	1.18	1.21	1.21	1.18
R-13	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R-14	0.57	0.62	0.68	1.22	1.32	1.42	1.45	1.45	1.42
R-15	0.31	0.46	0.47	0.84	0.92	1.00	1.02	1.02	1.00
R-18	0.39	0.49	0.53	0.99	1.05	1.15	1.16	1.16	1.15
R-27	0.43	0.47	0.50	0.95	1.04	1.11	1.15	1.15	1.11
R-28	0.35	0.43	0.47	0.87	0.99	1.05	1.06	1.06	1.05
R-29	0.71	0.82	0.86	1.25	1.58	1.65	1.71	1.72	1.65
WTUA LR	0.53	0.58	0.64	1.17	1.29	1.38	1.39	1.39	1.38
WTUA MR	0.38	0.51	0.57	0.96	1.13	1.19	1.21	1.21	1.19
0831	0.64	0.76	0.89	1.28	1.62	1.66	1.69	1.69	1.66
0837	0.70	0.83	0.88	1.28	1.57	1.61	1.63	1.63	1.61
0843	0.44	0.57	0.62	0.95	1.15	1.20	1.24	1.24	1.20
0850	0.27	0.36	0.39	0.71	1.02	1.06	1.11	1.12	1.06
GC RG01	0.47	0.55	0.66	0.94	1.09	1.17	1.18	1.18	1.17
LV RG01	0.56	0.67	0.71	1.12	1.40	1.48	1.52	1.52	1.48
LV RG02	0.66	0.80	0.86	1.30	1.67	1.74	1.74	1.98	1.74
DTW	0.34	0.45	0.67	0.89	0.99	1.07	1.08	1.08	1.07
Minimum	0.27	0.36	0.39	0.71	0.88	0.97	0.98	0.98	0.97
Average	0.48	0.58	0.64	1.04	1.23	1.31	1.33	1.35	1.31
Maximum	0.71	0.83	0.89	1.30	1.67	1.74	1.77	1.98	1.74
							Standard Deviation (in):		0.26
							Coefficient of Variation:		20%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	-	-	-	-	-	-	-	-	-
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 2
Start Date: 3/30/2017
Stop Date: 3/31/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.29	0.58	0.81	1.07	1.53	1.96	1.99	1.99	1.99
R-11	0.25	0.37	0.59	0.85	1.17	1.38	1.40	1.40	1.40
R-12	0.28	0.52	0.79	1.01	1.43	1.74	1.75	1.75	1.75
R-13	0.27	0.50	0.73	0.92	1.26	1.64	1.65	1.65	1.64
R-14	0.34	0.59	0.84	1.10	1.59	1.91	1.91	1.91	1.91
R-15	0.25	0.49	0.69	0.93	1.30	1.67	1.69	1.69	1.69
R-18	0.31	0.61	0.86	1.11	1.54	2.01	2.01	2.01	2.01
R-27	0.32	0.59	0.88	1.11	1.54	2.01	2.01	2.01	2.01
R-28	0.30	0.58	0.85	1.09	1.48	1.90	1.90	1.90	1.90
R-29	0.29	0.44	0.67	0.91	1.30	1.58	1.60	1.60	1.60
WTUA LR	0.30	0.57	0.88	1.08	1.52	1.85	1.85	1.85	1.85
WTUA MR	0.29	0.48	0.74	0.90	1.24	1.43	1.43	1.43	1.43
0831	0.28	0.46	0.62	0.82	1.18	1.44	1.46	1.46	1.46
0837	0.31	0.49	0.67	0.96	1.49	1.73	1.77	1.77	1.77
0843	0.28	0.46	0.64	0.86	1.30	1.51	1.54	1.54	1.54
0850	0.31	0.48	0.68	0.91	1.37	1.56	1.64	1.64	1.64
GC RG01	0.85	0.93	0.94	1.26	1.59	1.63	1.64	1.64	1.64
LV RG01	0.27	0.46	0.69	0.92	1.27	1.51	1.51	1.51	1.51
LV RG02	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
DTW	0.30	0.58	0.87	1.07	1.48	1.91	1.91	1.91	1.91
Minimum	0.25	0.37	0.59	0.82	1.17	1.38	1.40	1.40	1.40
Average	0.32	0.54	0.76	0.99	1.40	1.70	1.72	1.72	1.72
Maximum	0.85	0.93	0.94	1.26	1.59	2.01	2.01	2.01	2.01
							Standard Deviation (in):		0.44
							Coefficient of Variation:		26%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	-	-	-	-	-	-	-	-	-
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 3
Start Date: 4/5/2017
Stop Date: 4/7/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.40	0.59	0.70	0.89	0.98	1.27	1.49	1.49	1.49
R-11	0.18	0.23	0.31	0.55	0.73	0.89	1.04	1.04	1.04
R-12	0.20	0.37	0.54	0.70	0.81	1.00	1.14	1.14	1.14
R-13	0.23	0.37	0.52	0.66	0.75	0.96	1.09	1.09	1.09
R-14	0.23	0.40	0.57	0.74	0.95	1.23	1.40	1.40	1.40
R-15	0.14	0.27	0.35	0.48	0.51	0.79	0.93	0.93	0.93
R-18	0.21	0.37	0.54	0.68	0.83	0.97	1.07	1.07	1.07
R-27	0.45	0.64	0.75	0.87	0.95	1.17	1.39	1.39	1.39
R-28	0.43	0.62	0.78	1.00	1.09	1.22	1.36	1.36	1.36
R-29	0.19	0.34	0.48	0.67	0.76	0.91	1.06	1.06	1.06
WTUA LR	0.20	0.36	0.53	0.68	0.86	1.09	1.26	1.26	1.26
WTUA MR	0.16	0.25	0.37	0.54	0.67	0.74	0.80	0.80	0.80
0831	0.17	0.29	0.42	0.63	0.75	0.92	1.04	1.04	1.04
0837	0.20	0.28	0.38	0.66	0.77	0.93	1.07	1.07	1.07
0843	0.16	0.25	0.34	0.52	0.65	0.76	0.90	0.90	0.90
0850	0.17	0.31	0.42	0.60	0.78	1.03	1.19	1.19	1.19
GC RG01	0.11	0.21	0.30	0.48	0.67	0.77	0.82	0.82	0.77
LV RG01	0.21	0.35	0.46	0.65	0.75	0.95	1.10	1.10	1.10
LV RG02	0.14	0.22	0.30	0.49	0.64	0.80	1.00	1.00	1.00
DTW	0.26	0.45	0.56	0.62	0.68	0.93	1.11	1.11	1.11
Minimum	0.11	0.21	0.30	0.48	0.51	0.74	0.80	0.80	0.77
Average	0.22	0.36	0.48	0.66	0.78	0.97	1.11	1.11	1.11
Maximum	0.45	0.64	0.78	1.00	1.09	1.27	1.49	1.49	1.49
							Standard Deviation (in):		0.19
							Coefficient of Variation:		17%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 4
Start Date: 4/19/2017
Stop Date: 4/20/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.30	0.47	0.54	0.56	0.69	0.98	1.16	1.16	1.16
R-11	0.42	0.64	0.73	0.74	0.74	1.33	1.48	1.48	1.48
R-12	0.31	0.47	0.52	0.52	0.52	0.82	0.87	0.87	0.87
R-13	0.56	0.72	0.72	0.72	0.79	0.93	0.95	0.95	0.94
R-14	0.69	0.69	0.71	0.72	0.81	1.00	1.11	1.11	1.11
R-15	0.44	0.49	0.52	0.53	0.65	0.96	1.06	1.06	1.06
R-18	0.41	0.49	0.49	0.51	0.64	1.13	1.18	1.18	1.18
R-27	0.78	1.01	1.01	1.02	1.12	1.30	1.32	1.32	1.32
R-28	0.48	0.56	0.57	0.57	0.65	1.15	1.22	1.22	1.22
R-29	0.30	0.49	0.56	0.59	0.59	0.96	1.10	1.10	1.10
WTUA LR	0.11	0.15	0.18	0.18	0.18	0.43	0.71	0.71	0.28
WTUA MR	0.32	0.51	0.57	0.57	0.57	0.93	1.08	1.08	1.07
0831	0.58	0.71	0.71	0.73	0.82	1.21	1.26	1.26	1.25
0837	0.69	0.89	0.89	1.02	1.11	1.39	1.53	1.53	1.53
0843	0.40	0.61	0.61	0.97	1.08	1.08	1.39	1.39	1.39
0850	0.91	1.07	1.09	1.22	1.30	1.46	1.60	1.60	1.59
GC RG01	0.25	0.29	0.32	0.32	0.36	0.67	0.68	0.68	0.68
LV RG01	0.47	0.70	0.82	0.83	0.83	1.17	1.35	1.35	1.35
LV RG02	0.57	0.70	0.70	0.70	0.79	1.36	1.48	1.48	1.48
DTW	0.33	0.37	0.45	0.46	0.52	0.72	0.93	0.93	0.93
Minimum	0.11	0.15	0.18	0.18	0.18	0.43	0.68	0.68	0.28
Average	0.47	0.60	0.64	0.67	0.74	1.05	1.17	1.17	1.15
Maximum	0.91	1.07	1.09	1.22	1.30	1.46	1.60	1.60	1.59
							Standard Deviation (in):		0.31
							Coefficient of Variation:		27%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 5
Start Date: 5/4/2017
Stop Date: 5/5/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.20	0.31	0.41	0.56	0.99	1.15	1.83	1.83	1.83
R-11	0.18	0.29	0.38	0.52	0.91	1.06	1.55	1.55	1.55
R-12	0.15	0.24	0.34	0.46	0.87	1.02	1.53	1.53	1.53
R-13	0.14	0.22	0.31	0.43	0.79	0.93	1.48	1.48	1.47
R-14	0.15	0.28	0.38	0.53	0.99	1.17	1.78	1.78	1.78
R-15	0.17	0.28	0.38	0.52	0.89	1.10	1.74	1.74	1.74
R-18	0.18	0.29	0.39	0.53	0.98	1.09	1.72	1.72	1.72
R-27	0.15	0.27	0.36	0.51	0.94	1.15	1.82	1.82	1.82
R-28	0.18	0.29	0.39	0.53	0.94	1.18	1.85	1.85	1.85
R-29	0.18	0.28	0.37	0.50	0.90	1.09	1.59	1.59	1.59
WTUA LR	0.15	0.25	0.36	0.49	0.92	1.10	1.71	1.71	1.71
WTUA MR	0.17	0.27	0.36	0.46	0.84	0.94	1.32	1.32	1.32
0831	0.17	0.28	0.35	0.49	0.86	1.05	1.57	1.57	1.57
0837	0.19	0.29	0.37	0.53	0.93	1.09	1.53	1.53	1.53
0843	0.15	0.25	0.31	0.47	0.82	0.94	1.40	1.40	1.40
0850	0.21	0.32	0.42	0.45	0.79	0.90	1.36	1.36	1.35
GC RG01	0.13	0.22	0.29	0.40	0.78	0.91	1.36	1.36	1.36
LV RG01	0.19	0.29	0.37	0.50	0.92	1.09	1.56	1.56	1.56
LV RG02	0.16	0.27	0.35	0.48	0.83	0.97	1.39	1.39	1.39
DTW	0.16	0.26	0.41	0.48	0.88	1.04	1.71	1.71	1.71
Minimum	0.13	0.22	0.29	0.40	0.78	0.90	1.32	1.32	1.32
Average	0.17	0.27	0.37	0.49	0.89	1.05	1.59	1.59	1.59
Maximum	0.21	0.32	0.42	0.56	0.99	1.18	1.85	1.85	1.85
							Standard Deviation (in):		0.17
							Coefficient of Variation:		11%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 6
Start Date: 7/7/2017
Stop Date: 7/7/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.67	0.74	0.74	0.74	0.74	0.93	0.93	0.93	0.93
R-11	0.96	1.05	1.07	1.09	1.09	1.29	1.29	1.29	1.29
R-12	1.15	1.19	1.19	1.20	1.20	1.79	1.79	1.79	1.79
R-13	0.89	1.00	1.07	1.09	1.09	1.47	1.47	1.47	1.46
R-14	0.90	1.00	1.00	1.00	1.00	1.18	1.18	1.18	1.18
R-15	0.48	0.57	0.59	0.63	0.63	0.80	0.80	0.80	0.79
R-18	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R-27	0.89	0.90	0.90	0.90	0.90	1.58	1.58	1.58	1.58
R-28	0.82	0.83	0.83	0.83	0.83	1.37	1.37	1.37	1.37
R-29	0.62	0.72	0.77	0.77	0.77	1.39	1.39	1.39	1.39
WTUA LR	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
WTUA MR	1.31	1.40	1.40	1.40	1.40	2.33	2.33	2.33	2.33
0831	0.15	0.21	0.28	0.38	0.51	0.54	0.55	0.55	0.54
0837	0.37	0.50	0.68	0.69	0.69	0.71	0.71	0.89	0.71
0843	0.41	0.49	0.64	0.65	0.65	0.77	0.77	0.91	0.77
0850	0.53	0.64	0.80	0.87	0.87	1.20	1.21	1.21	1.19
GC RG01	0.94	0.97	0.97	0.97	0.97	1.47	1.47	1.47	1.47
LV RG01	0.67	0.74	0.75	0.75	0.75	1.42	1.42	1.42	1.42
LV RG02	0.98	0.98	0.98	0.98	0.98	0.98	0.98	1.84	0.98
DTW	0.89	0.98	0.99	0.99	0.99	1.27	1.27	1.27	1.27
Minimum	0.15	0.21	0.28	0.38	0.51	0.54	0.55	0.55	0.54
Average	0.76	0.83	0.87	0.89	0.89	1.25	1.25	1.32	1.25
Maximum	1.31	1.40	1.40	1.40	1.40	2.33	2.33	2.33	2.33
							Standard Deviation (in):		0.57
							Coefficient of Variation:		46%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	2	1	< 1	< 1	< 1	< 1	< 1	< 1	2
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	-	-	-	-	-	-	-	-	-
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	-	-	-	-	-	-	-	-	-
WTUA MR	4	2	1	< 1	< 1	2	< 1	< 1	4
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	4	2	1	< 1	< 1	2	< 1	< 1	4

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 7
Start Date: 8/28/2017
Stop Date: 8/29/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.76	1.08	1.10	1.37	1.37	2.19	2.23	2.23	2.22
R-11	0.34	0.35	0.39	0.51	0.52	0.77	0.95	0.95	0.93
R-12	0.45	0.50	0.60	0.66	0.67	1.09	1.13	1.13	1.12
R-13	0.89	0.89	0.95	1.11	1.11	1.64	1.67	1.67	1.67
R-14	0.67	0.76	0.87	0.87	0.88	0.91	1.04	1.04	1.03
R-15	0.98	1.00	1.32	1.50	1.52	1.72	1.74	1.74	1.73
R-18	0.13	0.19	0.20	0.20	0.20	0.23	0.29	0.29	0.29
R-27	0.89	0.89	1.24	1.39	1.40	1.96	1.99	1.99	1.98
R-28	0.45	0.47	0.89	1.10	1.12	1.20	1.24	1.24	1.22
R-29	0.15	0.23	0.24	0.30	0.34	0.44	0.48	0.48	0.48
WTUA LR	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
WTUA MR	0.94	0.94	0.94	1.01	1.01	1.30	1.38	1.38	1.37
0831	1.21	1.42	1.43	1.74	1.88	1.89	1.89	1.89	1.89
0837	1.21	1.38	1.46	1.51	1.56	1.64	1.65	1.65	1.65
0843	1.30	1.34	1.57	1.62	1.64	2.02	2.06	2.06	2.06
0850	0.16	0.24	0.26	0.27	0.27	0.38	0.41	0.41	0.40
GC RG01	0.79	0.79	0.79	0.83	0.84	1.58	1.61	1.61	1.61
LV RG01	0.81	0.82	0.82	0.84	0.86	1.41	1.45	1.45	1.45
LV RG02	0.80	0.86	1.03	1.07	1.08	1.83	1.96	1.96	1.95
DTW	0.69	0.70	1.24	1.40	1.42	1.93	1.96	1.96	1.96
Minimum	0.13	0.19	0.20	0.20	0.20	0.23	0.29	0.29	0.29
Average	0.72	0.78	0.91	1.02	1.04	1.38	1.43	1.43	1.42
Maximum	1.30	1.42	1.57	1.74	1.88	2.19	2.23	2.23	2.22
							Standard Deviation (in):		0.68
							Coefficient of Variation:		48%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	1	< 1	1	< 1	< 1	< 1	< 1	< 1	1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	-	-	-	-	-	-	-	-	-
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	3	2	2	2	1	< 1	< 1	< 1	3
0837	3	2	2	< 1	< 1	< 1	< 1	< 1	3
0843	4	2	2	1	< 1	< 1	< 1	< 1	4
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1
Maximum	4	2	2	2	1	1	< 1	< 1	4

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 8
Start Date: 10/10/2017
Stop Date: 10/11/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.22	0.29	0.37	0.68	0.79	0.82	0.85	0.85	0.82
R-11	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
R-12	0.23	0.30	0.41	0.73	0.98	1.00	1.02	1.02	1.00
R-13	0.15	0.24	0.33	0.51	0.71	0.74	0.77	0.77	0.74
R-14	0.26	0.41	0.50	0.92	1.11	1.17	1.21	1.21	1.17
R-15	0.76	1.03	1.03	1.05	1.06	1.09	1.11	1.11	1.06
R-18	0.20	0.30	0.39	0.57	0.67	0.68	0.68	0.68	0.68
R-27	0.18	0.28	0.40	0.65	0.80	0.82	0.86	0.86	0.82
R-28	0.20	0.32	0.45	0.70	0.85	0.87	0.90	0.90	0.87
R-29	0.24	0.40	0.53	0.84	1.25	1.26	1.29	1.29	1.25
WTUA LR	0.22	0.30	0.41	0.72	0.92	0.99	1.02	1.02	0.98
WTUA MR	0.25	0.42	0.55	0.90	1.31	1.33	1.34	1.34	1.33
0831	0.24	0.44	0.60	0.88	1.24	1.29	1.32	1.32	1.25
0837	0.31	0.57	0.75	1.06	1.43	1.47	1.48	1.48	1.43
0843	0.45	0.74	0.89	1.26	1.58	1.60	1.61	1.61	1.58
0850	0.38	0.69	0.95	1.33	1.66	1.67	1.68	1.68	1.67
GC RG01	0.20	0.24	0.33	0.59	0.72	0.73	0.74	0.74	0.73
LV RG01	0.27	0.44	0.57	0.88	1.35	1.35	1.37	1.37	1.35
LV RG02	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
DTW	0.20	0.28	0.47	0.70	0.84	0.86	0.88	0.88	0.86
Minimum	0.15	0.24	0.33	0.51	0.67	0.68	0.68	0.68	0.68
Average	0.28	0.43	0.55	0.83	1.07	1.10	1.12	1.12	1.09
Maximum	0.76	1.03	1.03	1.33	1.66	1.67	1.68	1.68	1.67
							Standard Deviation (in):		0.40
							Coefficient of Variation:		36%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	-	-	-	-	-	-	-	-	-
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	-	-	-	-	-	-	-	-	-
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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

Significant Storm Event 9
Start Date: 11/17/2017
Stop Date: 11/18/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R-10	0.43	0.72	0.84	0.93	1.07	2.01	2.01	2.01	2.01
R-11	0.38	0.63	0.73	0.79	0.94	1.74	1.75	1.75	1.74
R-12	0.47	0.75	0.86	0.93	0.98	1.85	1.85	1.85	1.85
R-13	0.34	0.59	0.68	0.76	0.89	1.65	1.65	1.65	1.65
R-14	0.41	0.71	0.78	0.89	0.94	1.83	1.84	1.84	1.83
R-15	0.43	0.70	0.83	0.90	1.02	1.90	1.91	1.91	1.90
R-18	0.40	0.63	0.72	0.84	1.01	1.84	1.84	1.84	1.84
R-27	0.42	0.71	0.82	0.92	1.09	2.01	2.04	2.04	2.00
R-28	0.44	0.74	0.85	0.93	0.99	1.92	1.92	1.92	1.92
R-29	0.48	0.76	0.89	0.93	0.96	1.89	1.90	1.90	1.89
WTUA LR	0.44	0.74	0.89	0.94	1.00	1.90	1.90	1.90	1.90
WTUA MR	0.37	0.62	0.75	0.79	0.84	1.63	1.67	1.67	1.63
0831	0.42	0.69	0.78	0.79	0.87	1.66	1.66	1.66	1.66
0837	0.46	0.72	0.81	0.82	1.00	1.82	1.82	1.82	1.82
0843	0.45	0.72	0.82	0.84	0.86	1.70	1.71	1.72	1.70
0850	0.43	0.70	0.79	0.81	0.83	1.64	1.65	1.65	1.64
GC RG01	0.47	0.78	0.91	0.99	1.04	1.72	1.73	1.73	1.72
LV RG01	0.41	0.68	0.78	0.84	0.98	1.82	1.84	1.84	1.82
LV RG02	0.40	0.65	0.76	0.79	0.93	1.72	1.75	1.75	1.72
DTW	0.40	0.70	0.91	0.92	1.08	2.00	2.00	2.00	2.00
Minimum	0.34	0.59	0.68	0.76	0.83	1.63	1.65	1.65	1.63
Average	0.42	0.70	0.81	0.87	0.97	1.81	1.82	1.82	1.81
Maximum	0.48	0.78	0.91	0.99	1.09	2.01	2.04	2.04	2.01
							Standard Deviation (in):		0.12
							Coefficient of Variation:		7%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R-10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-13	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-28	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-29	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0837	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
GC RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG01	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
LV RG02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

- Missing or suspect data (not used).

Notes:

1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.

2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

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-17	21	10
Feb-17	21	7
Mar-17	24	7
Apr-17	12	18
May-17	17	14
Jun-17	26	4
Jul-17	18	13
Aug-17	19	12
Sep-17	28	2
Oct-17	17	14
Nov-17	17	13
Dec-17	28	3
Total	248	117

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.

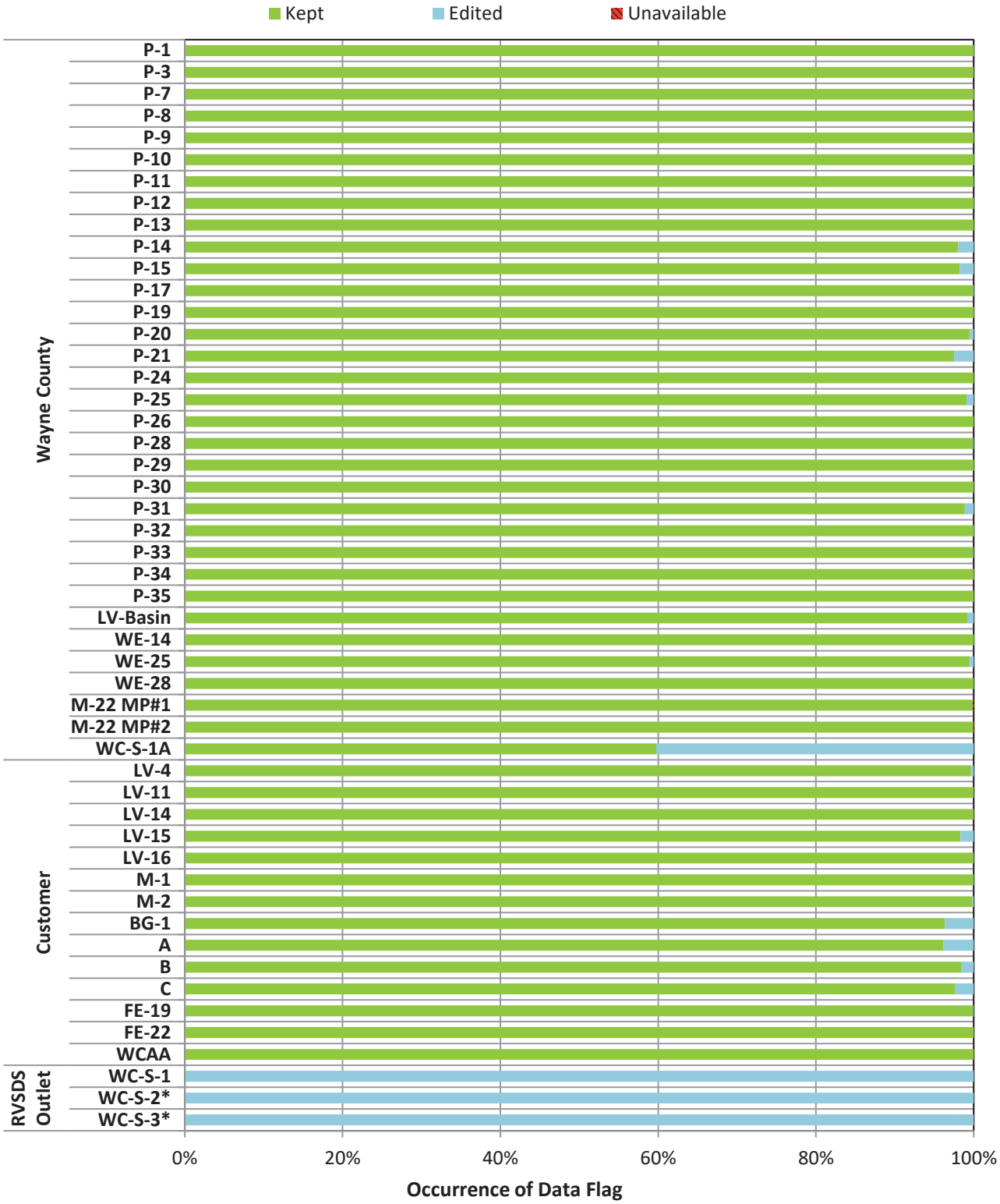
The second method was designed to flag additional wet weather days that were typically found during large, multiple day events that elevated the metered flow rates for a few days. When this happens, the days in the middle of the event are not flagged by the first method because there is no change in 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
2017 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	
A	1/1/2017	1/10/2017	Correlation to Meters B
	2/3/2017	2/6/2017	
	8/1/2017	8/2/2017	Diurnal Pattern
B	7/1/2017	7/5/2017	Diurnal Pattern
	8/1/2017	8/2/2017	
BG-1	7/1/2017	7/19/2017	Correlation to Meter P-1 and Linear Interpolation
C	7/1/2017	7/5/2017	Diurnal Pattern
	8/1/2017	8/2/2017	
	12/12/2017	12/14/2017	
LV-4	1/3/2017	1/4/2017	Correlation to Meters LV-Basin
LV-15	1/9/2017	1/11/2017	Correlation to Meter LV-14
	5/5/2017	5/9/2017	
LV-Basin	1/11/2017	1/12/2017	Correlation to Meters P-12 and LV-11
	1/18/2017	1/19/2017	
P-14	1/4/2017	1/12/2017	Correlation to Meters P-30, P-31 and P-32
P-15	3/8/2017	3/11/2017	Diurnal Pattern
	12/7/2017	12/7/2017	
P-20	7/26/2017	7/27/2017	Diurnal Pattern
P-21	1/4/2017	1/12/2017	Correlation to Meter P-19 and P-25
P-25	3/10/2017	3/14/2017	Diurnal Pattern
P-31	4/23/2017	4/27/2017	Correlation to Meter P-34
WC-S-1	1/1/2017	9/30/2017	Correlation to Meter WC-S-1A
	10/1/2017	12/31/2017	Correlation to Meters P-14, P-24, P-25
WC-S-1A	5/7/2017	9/30/2017	Correlation to Meters P-14, P-24, P-25
WC-S-2 + WC-S-3	1/1/2017	12/31/2017	Correlation to Meters P-30, P-31, P-32, P-14
WE-25	6/22/2017	6/24/2017	Diurnal Pattern

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 (cfs)												Annual Average (cfs)
		Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	
Comparison 1														
[WC-S-1]	Downstream	80.0	76.3	77.6	95.0	71.9	53.6	46.5	43.1	43.7	44.4	55.5	53.7	61.7
[P-14]+[P-24]+[P-25]	Upstream	70.5	67.6	69.9	83.4	65.3	49.7	43.6	40.7	41.2	41.8	51.4	49.8	56.2
	Incremental	9.5	8.7	7.7	11.6	6.6	3.9	2.9	2.4	2.5	2.6	4.1	3.9	5.5
Comparison 2														
[WC-S-2] + [WC-S-3] + [P-14]	Downstream	80.4	75.2	81.4	82.4	73.2	50.6	43.6	40.7	40.9	41.6	54.0	50.8	59.5
[P-9] + [P-10] + [P-11] + [P-13]	Upstream	72.5	67.6	72.4	74.8	64.0	43.9	38.3	35.3	35.2	36.6	48.1	45.4	52.7
	Incremental	7.9	7.6	9.0	7.6	9.2	6.7	5.3	5.4	5.7	5.0	5.9	5.4	6.8
Comparison 3														
[P-12]	Downstream	17.9	16.9	18.7	20.8	17.3	11.3	9.7	8.9	9.4	9.8	13.0	12.1	13.8
[LV-Basin] + [LV-11]	Upstream	16.1	15.2	16.8	18.1	15.7	10.4	9.2	8.3	8.8	9.4	12.3	11.5	12.6
	Incremental	1.8	1.7	1.9	2.7	1.6	0.9	0.5	0.6	0.6	0.4	0.7	0.6	1.2
Comparison 4														
[P-3] + [P-26]	Downstream	12.2	11.3	11.5	11.6	11.7	10.8	9.4	9.4	9.6	10.3	10.4	10.4	10.7
[P-1]	Upstream	9.0	8.7	9.4	9.2	9.1	8.0	7.5	7.4	7.3	7.7	8.2	8.0	8.3
	Incremental	3.2	2.6	2.1	2.4	2.6	2.8	1.9	2.0	2.3	2.6	2.2	2.4	2.4
Comparison 5														
[P-1]	Downstream	9.0	8.7	9.4	9.2	9.1	8.0	7.5	7.4	7.3	7.7	8.2	8.0	8.3
[BG-1]	Upstream	7.4	7.2	7.6	7.3	7.3	6.5	6.1	6.1	6.0	6.3	6.8	6.7	6.8
	Incremental	1.6	1.5	1.8	1.9	1.8	1.5	1.4	1.3	1.3	1.4	1.4	1.3	1.5
Comparison 6														
[P-24] + [P-25]	Downstream	20.2	19.4	19.7	21.9	18.5	12.6	10.8	9.8	10.2	10.4	13.5	13.6	15.0
[P-20] + [P-21]	Upstream	16.3	15.3	14.9	16.6	14.2	10.0	9.2	8.2	8.2	8.1	10.0	10.3	11.8
	Incremental	3.9	4.1	4.8	5.3	4.3	2.6	1.6	1.6	2.0	2.3	3.5	3.3	3.2
Comparison 7														
[P-21]	Downstream	11.7	10.8	11.1	12.4	10.6	7.6	7.5	6.7	6.6	6.7	7.9	7.9	8.9
[P-19] + [WE-28]	Upstream	9.2	8.6	8.8	10.7	9.4	6.7	6.4	5.5	5.5	5.6	7.2	7.0	7.5
	Incremental	2.5	2.2	2.3	1.7	1.2	0.9	1.1	1.2	1.1	1.1	0.7	0.9	1.4
Comparison 8														
[P-19]	Downstream	7.9	7.5	7.7	8.6	7.7	5.5	4.9	4.3	4.4	4.5	5.4	5.3	6.1
[P-17] + [WE-25] + [FE-19]	Upstream	6.0	5.7	6.1	6.6	5.8	4.0	3.5	3.2	3.2	3.4	3.9	3.9	4.6
	Incremental	1.9	1.8	1.6	2.0	1.9	1.5	1.4	1.1	1.2	1.1	1.5	1.4	1.5
Comparison 9														
[WC-S-1]	Downstream	80.0	76.3	77.6	95.0	71.9	53.6	46.5	43.1	43.7	44.4	55.5	53.7	61.7
[WC-S-1A]	Upstream	82.8	79.5	80.6	96.1	77.2	61.6	55.5	50.8	42.7	43.9	54.1	52.5	64.7
	Incremental	-2.8	-3.2	-3.0	-1.1	-5.3	-8.0	-9.0	-7.7	1.0	0.5	1.4	1.2	-3.0
Comparison 10														
[WC-S-1A]	Downstream	82.8	79.5	80.6	96.1	77.2	61.6	55.5	50.8	42.7	43.9	54.1	52.5	64.7
[P-14]+[P-24]+[P-25]	Upstream	70.5	67.6	69.9	83.4	65.3	49.7	43.6	40.7	41.2	41.8	51.4	49.8	56.2
	Incremental	12.3	11.9	10.7	12.7	11.9	11.9	11.9	10.1	1.5	2.1	2.7	2.7	8.5
Comparison 11														
[P-33] + [P-34] + [P-35]	Downstream	61.2	57.2	60.9	62.2	53.7	38.8	34.6	32.4	32.7	33.7	42.0	38.5	45.6
[P-9] + [P-10] + [P-11]	Upstream	58.3	54.3	58.0	59.0	50.7	36.2	32.2	29.8	29.9	31.1	40.4	38.2	43.1
	Incremental	2.9	2.9	2.9	3.2	3.0	2.6	2.4	2.6	2.8	2.6	1.6	0.3	2.5
Comparison 12														
[P-30] + [P-31]+ [P-32]	Downstream	76.6	71.7	75.5	79.5	69.7	48.7	42.1	39.3	39.4	40.1	51.7	48.8	56.8
[P-13] + [P-33] + [P-34]+ [P-35]	Upstream	75.4	70.5	75.2	78.1	67.0	46.5	40.7	37.8	38.0	39.2	49.7	45.8	55.2
	Incremental	1.2	1.2	0.3	1.4	2.7	2.2	1.4	1.5	1.4	0.9	2.0	3.0	1.6
Comparison 13														
[WC-S-2] + [WC-S-3] + [P-14]	Downstream	80.4	75.2	81.4	82.4	73.2	50.6	43.6	40.7	40.9	41.6	54.0	50.8	59.5
[P-30] + [P-31]+ [P-32]	Upstream	76.6	71.7	75.5	79.5	69.7	48.7	42.1	39.3	39.4	40.1	51.7	48.8	56.8
	Incremental	3.8	3.5	5.9	2.9	3.5	1.9	1.5	1.4	1.5	1.5	2.3	2.0	2.7

Table 12-2

Rouge Valley Sewage Disposal System

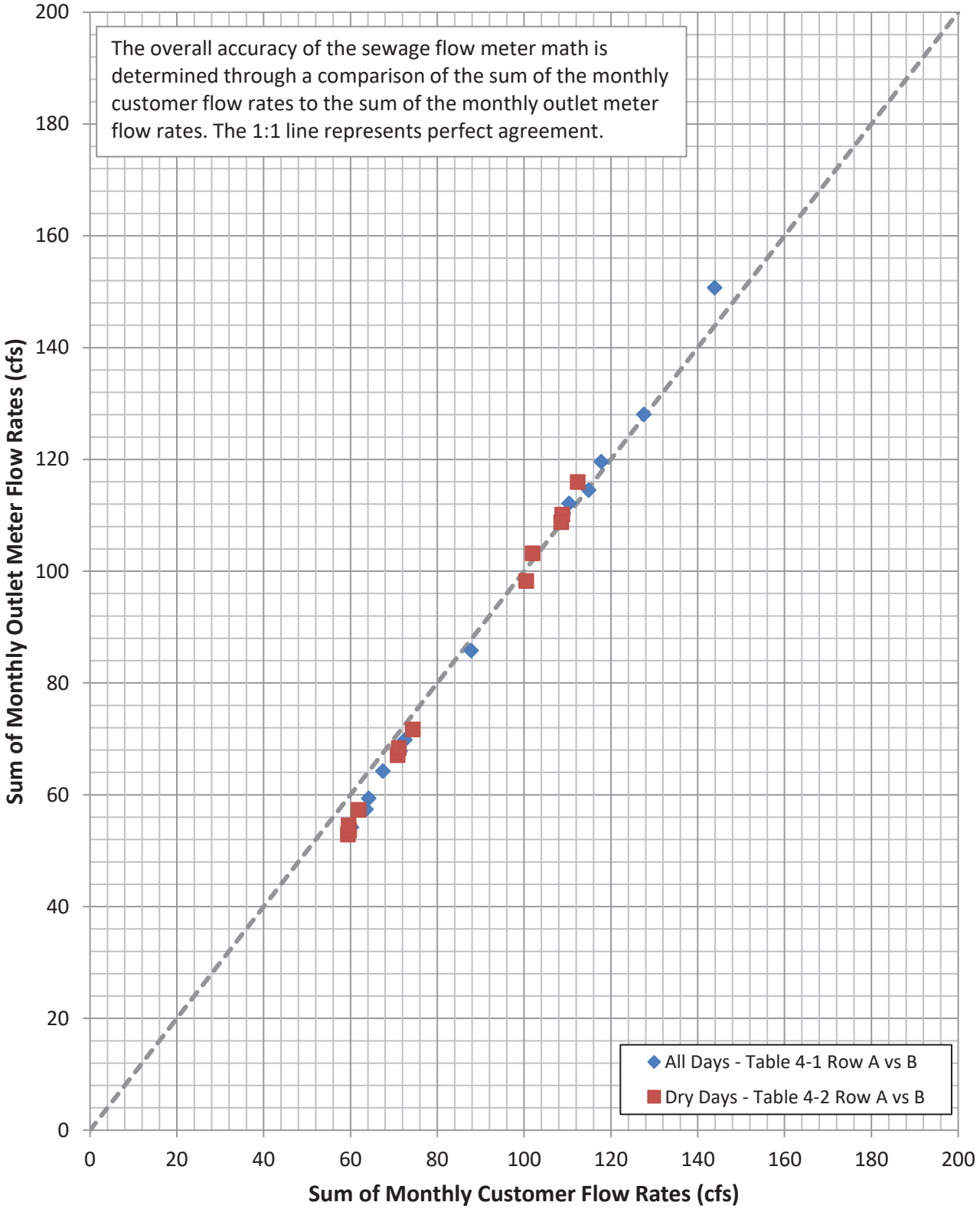
Monthly Average Dry Weather Flow Rate Versus Residential Population Check

Meter Grouping	Year 2010 Residential Population	Metric	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Annual Average	Percent of Area as Residential	Residential Area (acres)	Total Developed Land (Acres)
[BG-1]	43,217	cfs	7.4	7.2	7.6	7.3	7.3	6.5	6.1	6.1	6.0	6.3	6.8	6.7	6.8	62%	7,768	12,473
		GPCD	*111.4*	*107.7*	*113.4*	*109.4*	*109.6*	*97.6*	*91.6*	*90.7*	*89.6*	*93.5*	*102.3*	*100.1*	*101.4*			
[P-1]	49,143	cfs	9.0	8.7	9.4	9.2	9.1	8.0	7.5	7.4	7.3	7.7	8.2	8.0	8.3	63%	8,421	13,361
		GPCD	*118.7*	*115.0*	*123.7*	*121.2*	*119.2*	*105.6*	*98.3*	*96.9*	*95.8*	*100.7*	*108.1*	*104.7*	*109.0*			
[P-3] + [P-26]	55,091	cfs	12.2	11.3	11.5	11.6	11.7	10.8	9.4	9.4	9.6	10.3	10.4	10.4	10.7	63%	8,762	13,982
		GPCD	*142.6*	*132.3*	*135.4*	*136.6*	*137.6*	*126.2*	*110.6*	*109.8*	*112.1*	*120.5*	*122.4*	*121.7*	*125.6*			
[LV-16]	5,147	cfs	2.1	2.1	2.3	2.8	2.7	1.8	1.8	1.7	1.4	1.3	1.8	1.6	2.0	62%	599	963
		GPCD	*264.6*	*263.0*	*291.0*	*351.9*	*338.0*	*221.8*	*229.3*	*213.9*	*179.4*	*161.6*	*229.5*	*200.8*	*245.3*			
[C] - [B] - [A]	3,074	cfs	2.2	2.3	2.6	2.7	2.5	2.1	2.0	1.7	1.6	1.7	1.8	1.8	2.1	72%	250	347
		GPCD	*460.5*	*487.3*	*554.7*	*577.2*	*531.4*	*447.8*	*427.7*	*354.8*	*342.9*	*363.8*	*377.3*	*387.4*	*442.4*			
[LV-15]	6,570	cfs	3.2	3.0	3.4	3.9	3.4	2.3	2.0	1.9	2.3	2.2	3.0	2.9	2.8	81%	484	596
		GPCD	*314.0*	*297.9*	*333.6*	*388.4*	*339.3*	*229.8*	*200.8*	*183.0*	*226.0*	*221.3*	*290.5*	*283.2*	*275.4*			
[WE-14]	26,724	cfs	6.4	6.2	6.2	6.9	6.3	4.8	4.9	5.7	5.0	4.4	5.2	5.0	5.6	60%	2,000	3,348
		GPCD	*154.4*	*149.1*	*149.3*	*167.6*	*152.0*	*117.0*	*117.7*	*138.2*	*120.1*	*106.6*	*126.3*	*120.2*	*134.8*			
[M-2]	13,739	cfs	4.7	4.4	4.5	4.9	4.1	2.5	2.2	1.9	1.9	1.9	2.9	2.7	3.2	81%	1,143	1,409
		GPCD	*223.1*	*205.5*	*213.6*	*231.4*	*192.3*	*119.8*	*103.7*	*90.7*	*91.2*	*89.5*	*136.1*	*127.1*	*151.6*			
[M-1]	14,943	cfs	4.1	3.7	4.0	3.6	3.2	2.1	1.9	1.8	1.8	1.9	2.6	2.3	2.7	81%	1,181	1,453
		GPCD	*175.7*	*157.9*	*172.8*	*157.5*	*138.1*	*91.0*	*83.5*	*78.6*	*78.5*	*81.6*	*110.8*	*99.1*	*118.5*			
[LV-14]	7,738	cfs	2.3	2.2	2.3	2.7	2.2	1.4	1.1	1.1	1.0	1.1	1.5	1.4	1.7	56%	573	1,029
		GPCD	*192.4*	*180.5*	*190.0*	*225.0*	*182.1*	*113.0*	*94.9*	*87.9*	*86.2*	*87.8*	*127.2*	*117.4*	*140.1*			
[LV-11] + [LV-4]	39,591	cfs	7.8	7.3	8.2	8.8	7.7	5.1	4.8	4.3	4.7	5.0	6.5	5.9	6.3	49%	2,439	5,018
		GPCD	*127.1*	*118.5*	*134.1*	*143.5*	*125.9*	*83.4*	*77.9*	*70.0*	*76.0*	*82.3*	*106.8*	*96.6*	*103.4*			
[LV-11] + [LV-Basin]	28,266	cfs	16.1	15.2	16.8	18.1	15.7	10.4	9.2	8.3	8.8	9.4	12.3	11.5	12.6	64%	7,708	11,998
		GPCD	*368.4*	*346.8*	*384.8*	*415.0*	*359.0*	*237.8*	*209.7*	*190.9*	*202.0*	*214.6*	*281.9*	*263.8*	*289.1*			
[P-12]	68,311	cfs	17.9	16.9	18.7	20.8	17.3	11.3	9.7	8.9	9.4	9.8	13.0	12.1	13.8	61%	7,733	12,722
		GPCD	*169.3*	*159.8*	*176.5*	*196.4*	*164.1*	*106.7*	*91.6*	*84.1*	*88.6*	*92.3*	*122.9*	*114.1*	*130.3*			
[P-9] + [P-10] + [P-11] - [FE-22]	223,281	cfs	51.9	49.1	52.4	56.0	49.5	35.4	31.5	29.2	29.3	30.5	39.5	37.4	40.9	64%	24,438	38,468
		GPCD	*150.3*	*142.3*	*151.6*	*162.1*	*143.3*	*102.5*	*91.1*	*84.6*	*84.7*	*88.1*	*114.3*	*108.2*	*118.4*			
[P-13]	48,847	cfs	14.2	13.3	14.3	15.8	13.3	7.8	6.1	5.4	5.3	5.5	7.7	7.3	9.6	73%	3,636	4,961
		GPCD	*187.5*	*175.8*	*189.7*	*209.6*	*176.1*	*102.9*	*81.2*	*71.8*	*69.8*	*73.1*	*101.6*	*96.3*	*127.6*			
[WC-S-2] + [WC-S-3] + [P-14] - [FE-22]	308,765	cfs	74.1	70.0	75.7	79.4	72.1	49.9	42.9	40.1	40.3	41.0	53.1	50.1	57.3	66%	30,460	46,337
		GPCD	*155.0*	*146.4*	*158.5*	*166.3*	*150.8*	*104.3*	*89.9*	*84.0*	*84.3*	*85.7*	*111.1*	*104.8*	*119.9*			
[P-15]	6,938	cfs	1.4	1.4	1.5	1.5	1.4	1.0	1.0	1.0	0.9	1.0	1.1	1.1	1.2	36%	1,626	4,471
		GPCD	*134.1*	*134.0*	*138.4*	*140.9*	*127.8*	*97.6*	*95.4*	*89.3*	*85.2*	*90.5*	*100.3*	*101.4*	*111.1*			
[P-17]	9,561	cfs	2.3	2.2	2.4	2.5	2.4	1.9	1.7	1.6	1.6	1.8	1.8	1.7	2.0	37%	2,476	6,748
		GPCD	*155.4*	*147.8*	*160.8*	*170.1*	*164.1*	*130.1*	*116.2*	*110.5*	*111.0*	*121.9*	*124.9*	*117.0*	*135.7*			
[WE-25]	16,269	cfs	3.7	3.5	3.6	4.1	3.4	2.1	1.8	1.6	1.6	1.6	2.1	2.1	2.6	70%	1,503	2,141
		GPCD	*146.2*	*137.6*	*143.2*	*161.7*	*133.4*	*84.3*	*72.0*	*63.9*	*63.2*	*63.4*	*83.0*	*84.5*	*102.8*			
[P-19] - [FE-19]	32,127	cfs	7.9	7.5	7.6	8.6	7.7	5.5	4.9	4.3	4.4	4.5	5.4	5.3	6.1	46%	4,454	9,630
		GPCD	*159.6*	*149.9*	*152.2*	*173.8*	*154.3*	*111.5*	*97.9*	*87.2*	*88.4*	*90.7*	*108.4*	*106.2*	*123.1*			
[WE-28]	14,096	cfs	1.2	1.2	1.1	2.0	1.7	1.1	1.5	1.2	1.1	1.1	1.8	1.7	1.4	72%	931	1,294
		GPCD	*55.8*	*54.1*	*50.8*	*92.8*	*79.8*	*51.3*	*68.2*	*55.6*	*52.7*	*49.2*	*83.9*	*79.8*	*64.5*			
[P-21] - [FE-19]	51,271	cfs	11.7	10.8	11.0	12.4	10.6	7.6	7.5	6.7	6.6	6.7	7.9	7.9	8.9	50%	5,665	11,264
		GPCD	*146.9*	*136.0*	*138.4*	*155.9*	*134.0*	*96.3*	*94.1*	*84.0*	*82.8*	*83.8*	*99.6*	*99.2*	*112.4*			
[P-25] - [FE-19]	66,119	cfs	13.2	13.1	13.7	15.3	12.9	8.8	7.9	7.1	7.2	7.4	9.6	9.3	10.4	54%	6,687	12,479
		GPCD	*129.2*	*127.9*	*133.7*	*149.9*	*126.3*	*86.4*	*77.4*	*69.0*	*70.4*	*72.7*	*93.4*	*91.2*	*102.1*			
[P-20]	12,503	cfs	4.6	4.5	3.8	4.3	3.6	2.3	1.7	1.5	1.6	1.5	2.1	2.5	2.8	12%	731	6,147
		GPCD	*238.6*	*233.4*	*197.0*	*221.2*	*184.0*	*121.2*	*88.4*	*78.8*	*82.9*	*76.9*	*109.2*	*127.2*	*146.0*			
[P-24]	29,900	cfs	6.9	6.3	5.9	6.6	5.5	3.8	2.9	2.7	3.0	3.0	4.0	4.3	4.6	66%	2,294	3,498
		GPCD	*150.1*	*136.3*	*127.1*	*142.1*	*119.9*	*81.5*	*63.0*	*58.4*	*65.3*	*63.8*	*85.7*	*92.6*	*98.6*			
[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-19] - [FE-22] + [C] - [B] - [A]	404,784	cfs	105.9	100.3	105.6	115.7	99.6	68.4	58.7	54.0	54.7	55.6	72.6	69.4	79.9	59%	39,441	67,194
		GPCD	*169.1*	*160.2*	*168.6*	*184.8*	*159.1*	*109.3*	*93.6*	*86.2*	*87.3*	*88.8*	*115.8*	*110.8*	*127.6*			

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

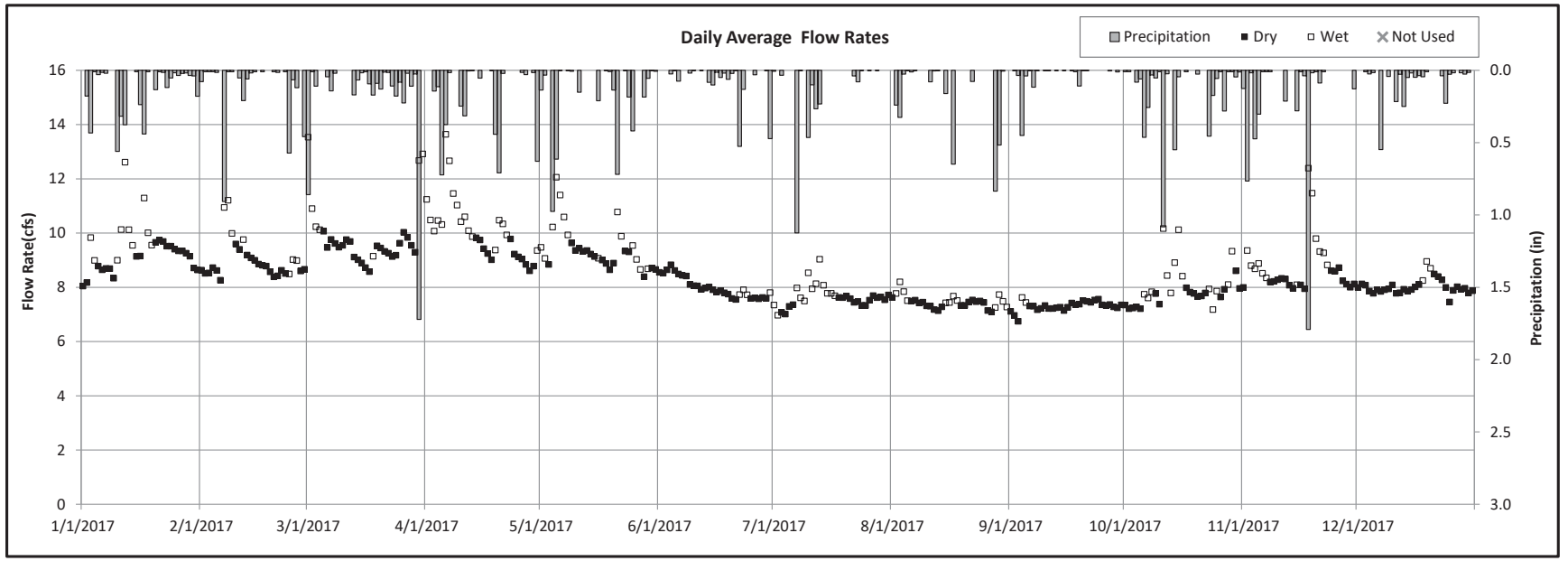
Rouge Valley Sewage Disposal System

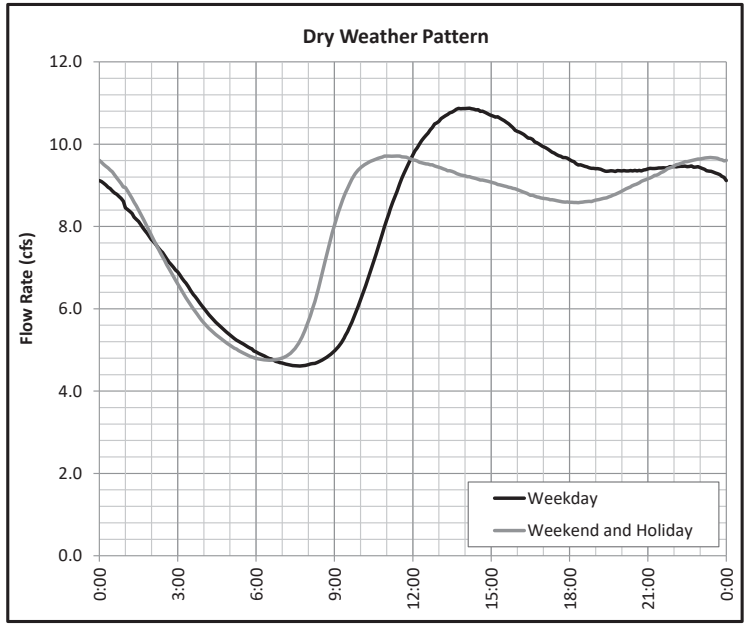
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	9.4	187.8	9.0	180.8	21	10
Feb-17	9.0	162.9	8.7	158.3	21	7
Mar-17	9.8	197.3	9.4	188.5	24	7
Apr-17	10.1	195.4	9.2	178.7	12	18
May-17	9.4	189.0	9.1	181.6	17	14
Jun-17	8.0	155.1	8.0	155.7	26	4
Jul-17	7.6	153.0	7.5	149.7	18	13
Aug-17	7.5	149.3	7.4	147.6	19	12
Sep-17	7.3	141.6	7.3	141.3	28	2
Oct-17	8.0	160.0	7.7	153.5	17	14
Nov-17	8.7	169.0	8.2	159.4	17	13
Dec-17	8.0	160.8	8.0	159.5	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	16.22	3/1/17 9:05	1.46	3/1/17 9:50
2	1.70	3/30/2017	3/31/2017	19.05	3/30/17 21:25	1.63	3/30/17 21:55
3	1.11	4/5/2017	4/7/2017	14.65	4/6/17 20:50	1.35	4/6/17 21:10
4	1.15	4/19/2017	4/20/2017	14.22	4/20/17 20:55	1.36	4/20/17 21:10
5	1.59	5/4/2017	5/5/2017	15.32	5/5/17 16:00	1.38	5/5/17 16:45
6	1.25	7/7/2017	7/7/2017	10.32	7/7/17 20:25	1.14	7/7/17 20:30
7	1.42	8/28/2017	8/29/2017	9.93	8/29/17 16:00	1.11	8/29/17 16:25
8	1.09	10/10/2017	10/11/2017	15.97	10/11/17 10:25	1.44	10/11/17 10:30
9	1.81	11/17/2017	11/18/2017	17.52	11/18/17 16:15	1.54	11/18/17 17:00

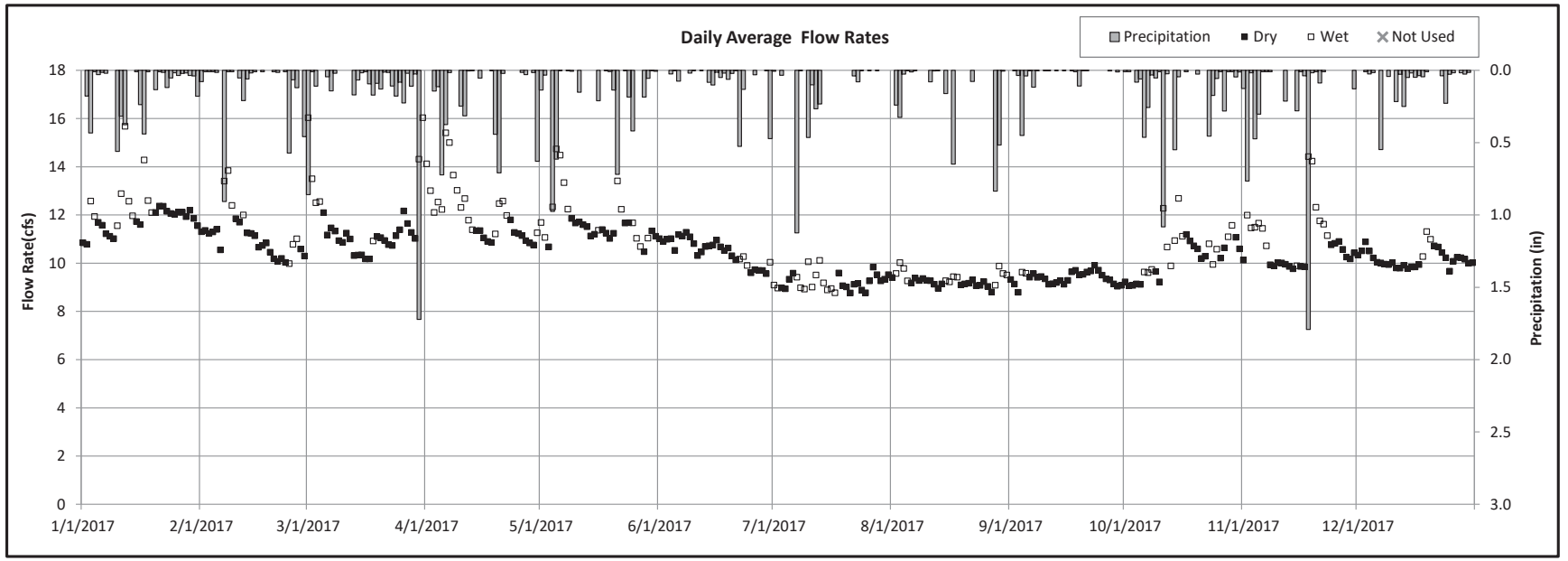
Rouge Valley Sewage Disposal System

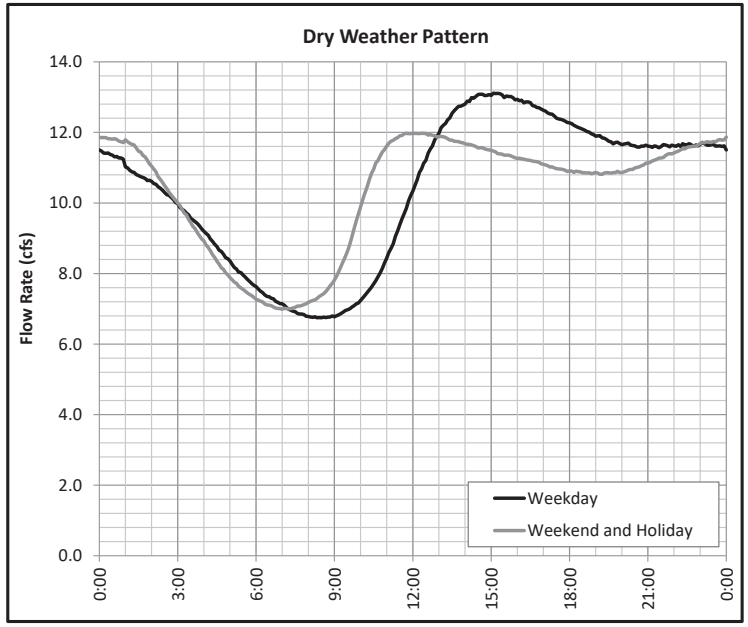
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	12.1	242.0	11.7	235.0	21	10
Feb-17	11.1	201.4	10.9	196.7	21	7
Mar-17	11.6	233.0	11.0	220.9	24	7
Apr-17	12.1	234.0	11.1	215.6	12	18
May-17	11.7	235.1	11.3	226.8	17	14
Jun-17	10.5	203.4	10.6	204.6	26	4
Jul-17	9.2	184.7	9.2	184.6	18	13
Aug-17	9.3	186.3	9.2	183.7	19	12
Sep-17	9.4	181.9	9.4	181.6	28	2
Oct-17	10.4	207.7	10.1	201.4	17	14
Nov-17	10.9	211.5	10.2	197.4	17	13
Dec-17	10.2	204.4	10.1	203.0	28	3

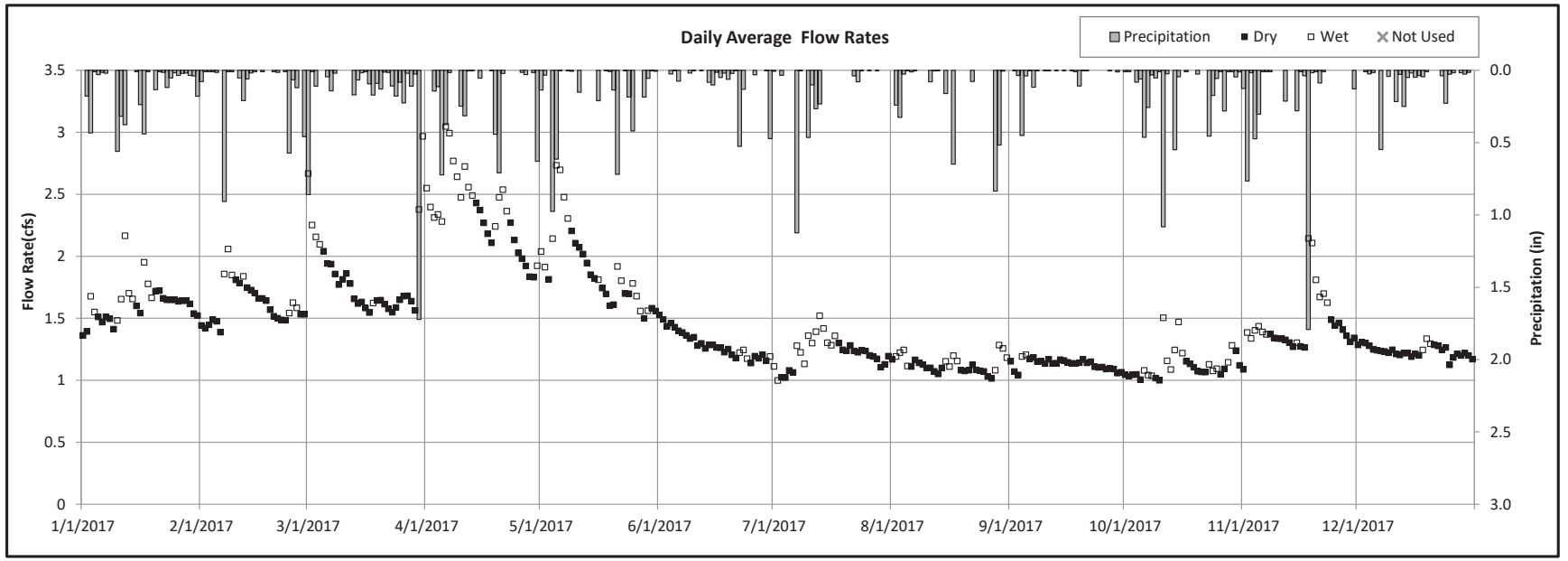
Statistics for Significant Wet Weather Events

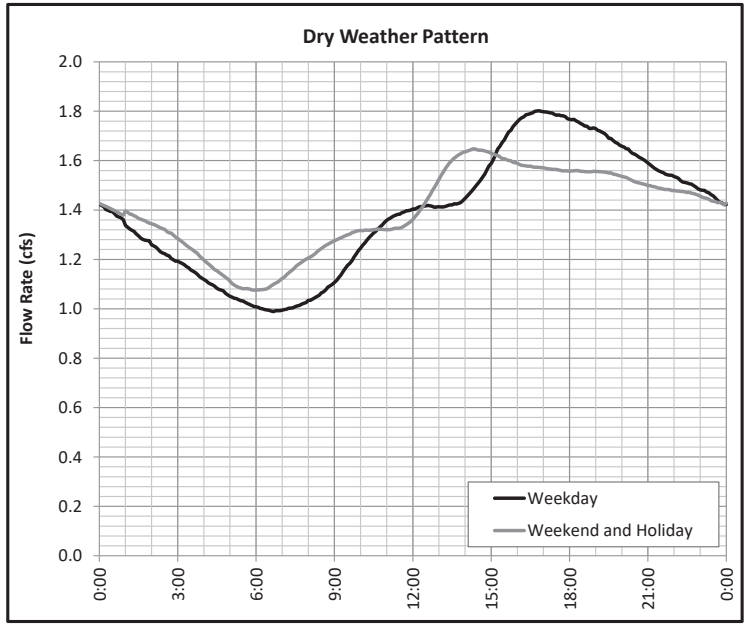
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	17.56	3/1/17 9:30	1.56	3/1/17 10:10
2	1.70	3/30/2017	3/31/2017	20.24	3/30/17 22:35	1.75	3/30/17 22:35
3	1.11	4/5/2017	4/7/2017	16.15	4/6/17 20:35	1.50	4/6/17 21:55
4	1.15	4/19/2017	4/20/2017	16.35	4/20/17 21:55	1.52	4/20/17 22:40
5	1.59	5/4/2017	5/5/2017	17.53	5/5/17 17:10	1.56	5/5/17 17:40
6	1.25	7/7/2017	7/7/2017	11.62	7/7/17 21:20	1.21	7/7/17 20:45
7	1.42	8/28/2017	8/29/2017	12.73	8/29/17 13:35	1.24	8/29/17 13:40
8	1.09	10/10/2017	10/11/2017	18.40	10/11/17 11:45	1.63	10/11/17 11:25
9	1.81	11/17/2017	11/18/2017	19.16	11/18/17 17:40	1.66	11/18/17 17:45

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	1.6	32.4	1.6	31.4	21	10
Feb-17	1.6	29.3	1.6	28.4	21	7
Mar-17	1.8	36.8	1.7	34.1	24	7
Apr-17	2.3	45.5	2.1	41.0	12	18
May-17	1.9	38.1	1.8	36.0	17	14
Jun-17	1.3	25.0	1.3	25.2	26	4
Jul-17	1.2	24.5	1.2	23.6	18	13
Aug-17	1.1	22.6	1.1	21.9	19	12
Sep-17	1.1	21.9	1.1	21.8	28	2
Oct-17	1.1	22.5	1.1	21.5	17	14
Nov-17	1.4	28.0	1.3	25.9	17	13
Dec-17	1.2	24.7	1.2	24.6	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	3.16	3/1/17 10:15	1.44	3/1/17 12:05
2	1.70	3/30/2017	3/31/2017	3.91	3/31/17 0:00	1.60	3/31/17 0:15
3	1.11	4/5/2017	4/7/2017	3.33	4/6/17 13:00	1.44	4/6/17 18:30
4	1.15	4/19/2017	4/20/2017	3.00	4/20/17 23:20	1.36	4/20/17 23:55
5	1.59	5/4/2017	5/5/2017	3.42	5/5/17 17:35	1.44	5/5/17 18:30
6	1.25	7/7/2017	7/7/2017	1.94	7/7/17 20:05	1.15	7/7/17 20:55
7	1.42	8/28/2017	8/29/2017	2.36	8/29/17 14:40	1.27	8/29/17 15:05
8	1.09	10/10/2017	10/11/2017	2.63	10/11/17 12:20	1.32	10/11/17 13:05
9	1.81	11/17/2017	11/18/2017	3.37	11/18/17 18:40	1.43	11/18/17 19:00

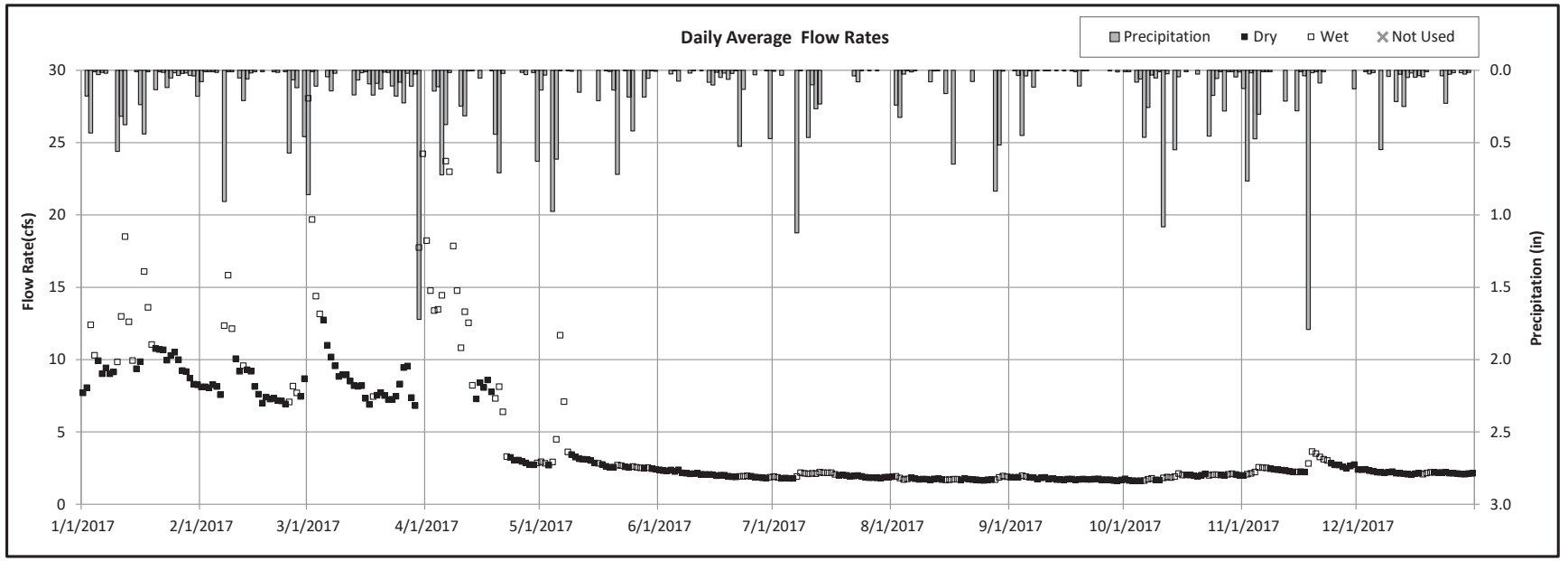
Rouge Valley Sewage Disposal System

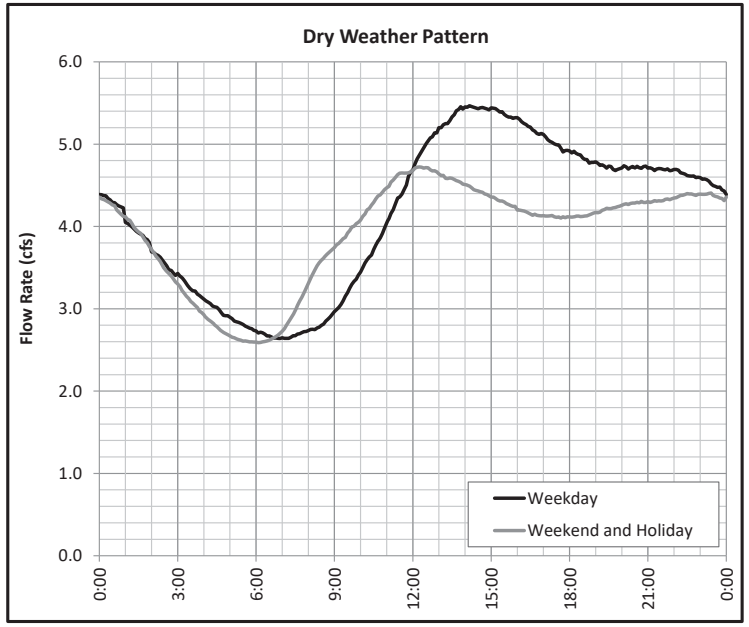
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	10.5	210.2	9.4	188.9	21	10
Feb-17	8.6	155.6	8.0	144.8	21	7
Mar-17	10.6	212.2	8.5	170.0	24	7
Apr-17	9.6	185.5	5.1	98.0	12	18
May-17	3.3	65.6	2.8	56.0	17	14
Jun-17	2.0	39.7	2.1	40.1	26	4
Jul-17	2.0	39.4	1.9	37.7	18	13
Aug-17	1.7	35.0	1.7	34.6	19	12
Sep-17	1.8	34.0	1.7	33.8	28	2
Oct-17	1.9	37.9	1.9	37.3	17	14
Nov-17	2.6	49.8	2.4	47.4	17	13
Dec-17	2.2	43.7	2.2	43.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	34.30	3/1/17 8:00	2.33	3/1/17 8:00
2	1.70	3/30/2017	3/31/2017	31.26	3/30/17 20:30	4.34	3/31/17 0:05
3	1.11	4/5/2017	4/7/2017	25.88	4/7/17 11:00	1.95	4/7/17 9:50
4	1.15	4/19/2017	4/20/2017	20.84	4/20/17 20:50	1.70	4/20/17 21:15
5	1.59	5/4/2017	5/5/2017	20.08	5/6/17 12:50	1.66	5/6/17 13:10
6	1.25	7/7/2017	7/7/2017	2.39	7/7/17 21:05	0.66	7/7/17 22:45
7	1.42	8/28/2017	8/29/2017	2.78	8/29/17 13:55	0.72	8/29/17 14:15
8	1.09	10/10/2017	10/11/2017	2.29	10/11/17 20:55	0.67	10/11/17 21:05
9	1.81	11/17/2017	11/18/2017	4.27	11/19/17 11:40	0.81	11/19/17 11:45

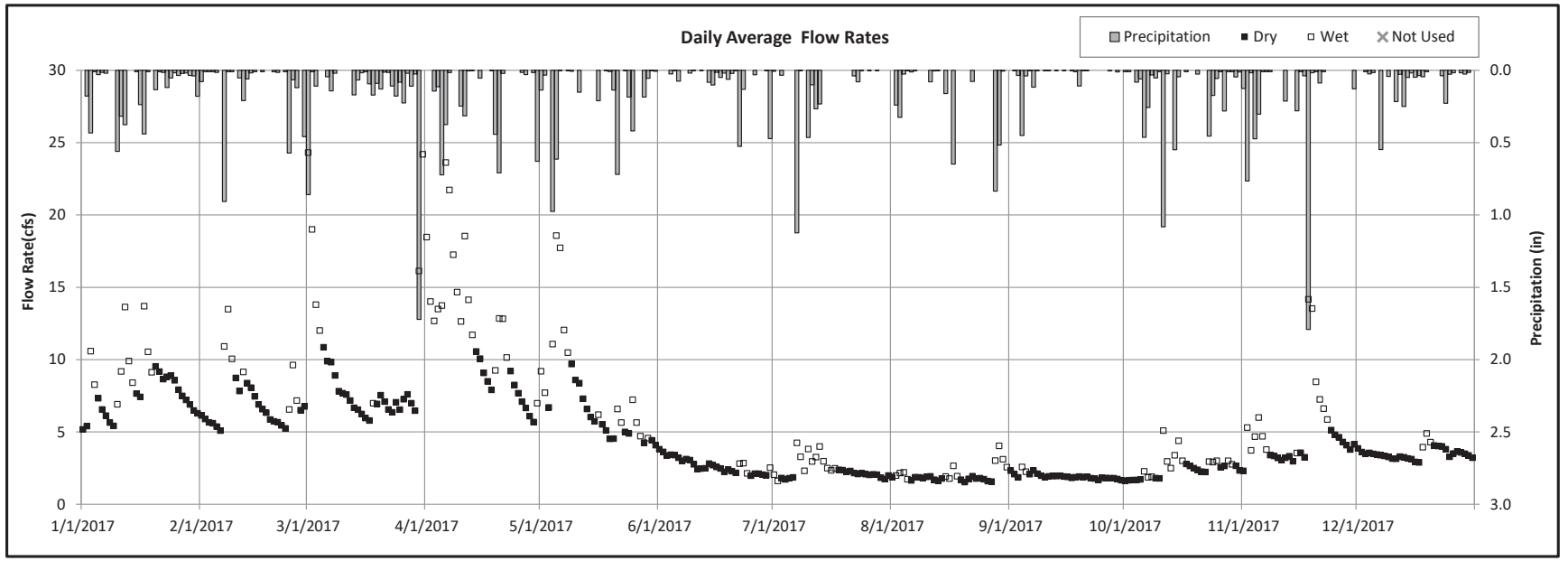
Rouge Valley Sewage Disposal System

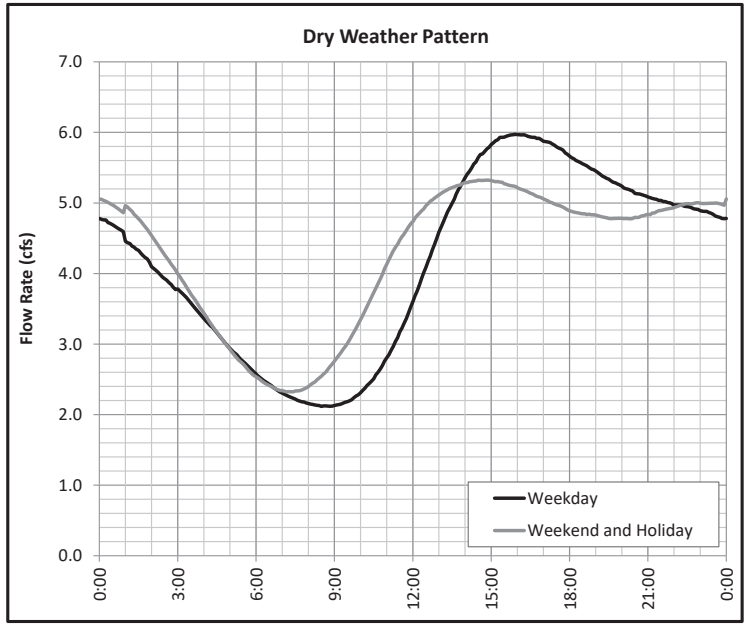
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	8.2	163.3	7.3	145.5	21	10
Feb-17	7.2	130.5	6.4	116.4	21	7
Mar-17	9.5	189.7	7.4	147.9	24	7
Apr-17	11.8	229.6	8.1	156.2	12	18
May-17	7.4	147.7	6.0	119.3	17	14
Jun-17	2.7	51.8	2.7	52.1	26	4
Jul-17	2.4	48.0	2.0	40.7	18	13
Aug-17	2.0	40.2	1.8	35.1	19	12
Sep-17	1.9	37.6	1.9	37.0	28	2
Oct-17	2.5	50.9	2.2	43.4	17	14
Nov-17	5.0	96.9	3.7	71.1	17	13
Dec-17	3.5	70.6	3.4	68.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	28.37	3/1/17 7:30	5.95	3/1/17 10:45
2	1.70	3/30/2017	3/31/2017	26.33	3/30/17 19:30	9.75	3/31/17 0:20
3	1.11	4/5/2017	4/7/2017	24.48	4/6/17 19:25	3.47	4/6/17 2:15
4	1.15	4/19/2017	4/20/2017	19.69	4/20/17 21:35	2.56	4/20/17 22:05
5	1.59	5/4/2017	5/5/2017	23.49	5/5/17 20:35	3.12	5/5/17 20:55
6	1.25	7/7/2017	7/7/2017	11.41	7/7/17 21:40	1.77	7/7/17 22:15
7	1.42	8/28/2017	8/29/2017	9.33	8/28/17 20:15	1.53	8/28/17 20:45
8	1.09	10/10/2017	10/11/2017	11.11	10/11/17 13:40	1.72	10/11/17 14:05
9	1.81	11/17/2017	11/18/2017	22.51	11/18/17 21:05	2.95	11/18/17 21:40

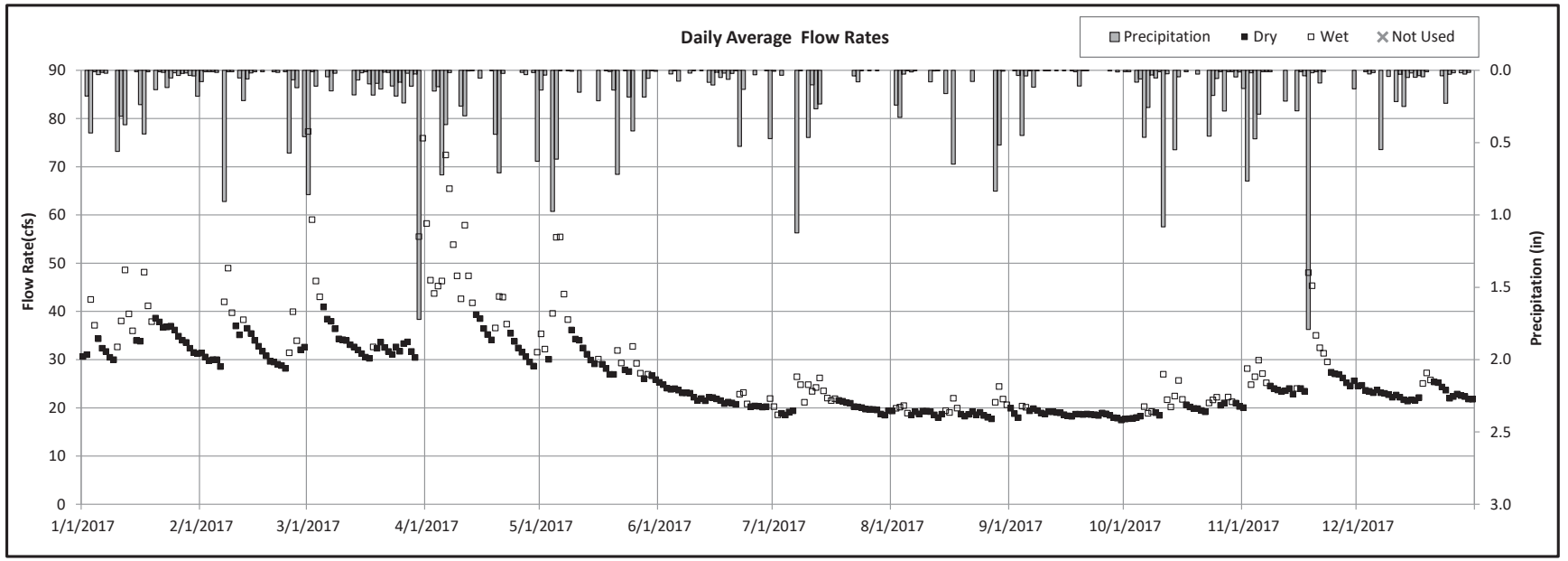
Rouge Valley Sewage Disposal System

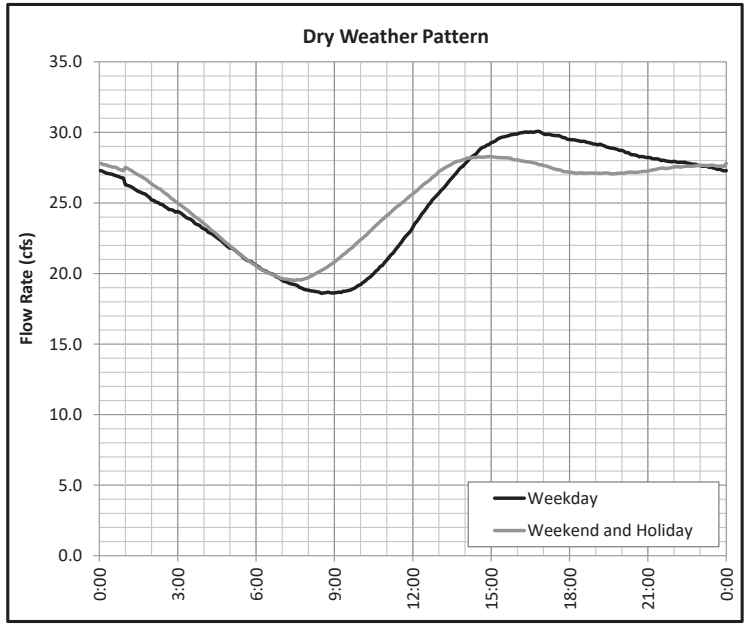
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	35.8	717.1	33.7	675.7	21	10
Feb-17	33.5	605.6	31.6	571.2	21	7
Mar-17	38.4	768.8	33.3	667.8	24	7
Apr-17	42.2	817.6	33.8	654.8	12	18
May-17	32.5	651.9	29.5	591.3	17	14
Jun-17	22.1	428.4	22.1	428.2	26	4
Jul-17	21.1	423.1	19.8	396.4	18	13
Aug-17	19.4	389.4	18.7	374.3	19	12
Sep-17	18.8	364.5	18.7	362.6	28	2
Oct-17	20.4	409.5	19.3	387.2	17	14
Nov-17	27.4	531.9	24.5	474.5	17	13
Dec-17	23.2	464.8	22.9	458.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	92.77	3/1/17 7:50	6.28	3/1/17 8:55
2	1.70	3/30/2017	3/31/2017	85.03	3/30/17 22:35	10.28	3/31/17 0:20
3	1.11	4/5/2017	4/7/2017	76.98	4/6/17 19:50	4.08	4/6/17 2:20
4	1.15	4/19/2017	4/20/2017	56.33	4/20/17 21:35	2.99	4/20/17 22:15
5	1.59	5/4/2017	5/5/2017	69.09	5/5/17 19:50	3.55	5/5/17 20:50
6	1.25	7/7/2017	7/7/2017	46.46	7/7/17 21:10	2.68	7/7/17 21:35
7	1.42	8/28/2017	8/29/2017	35.99	8/28/17 20:00	2.28	8/28/17 20:35
8	1.09	10/10/2017	10/11/2017	40.87	10/11/17 13:35	2.44	10/11/17 14:05
9	1.81	11/17/2017	11/18/2017	64.96	11/18/17 21:00	3.46	11/18/17 21:35

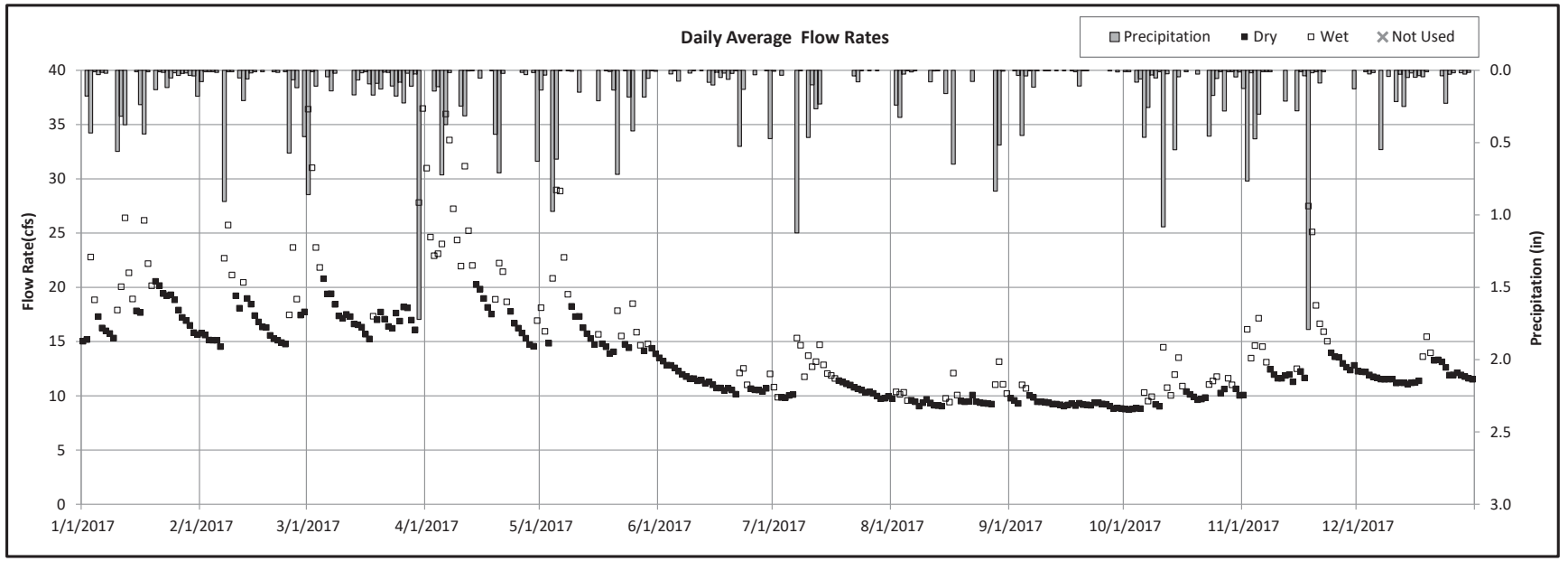
Rouge Valley Sewage Disposal System

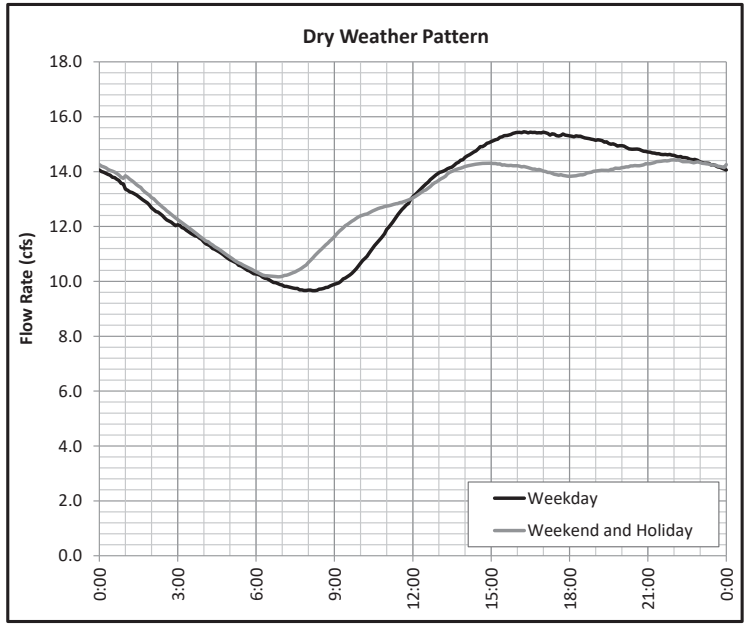
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	18.7	373.7	17.3	346.9	21	10
Feb-17	17.6	318.8	16.4	295.9	21	7
Mar-17	19.7	394.4	17.3	347.1	24	7
Apr-17	21.7	420.6	17.1	332.3	12	18
May-17	17.0	339.9	15.2	304.5	17	14
Jun-17	11.5	222.2	11.4	220.9	26	4
Jul-17	11.3	227.2	10.4	207.7	18	13
Aug-17	9.9	197.4	9.4	188.2	19	12
Sep-17	9.4	181.8	9.3	179.8	28	2
Oct-17	10.4	207.5	9.6	192.3	17	14
Nov-17	14.3	276.8	12.3	237.7	17	13
Dec-17	12.1	242.0	11.8	237.2	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	39.77	3/1/17 9:30	6.06	3/1/17 8:50
2	1.70	3/30/2017	3/31/2017	38.26	3/30/17 22:45	10.04	3/31/17 0:10
3	1.11	4/5/2017	4/7/2017	37.24	4/6/17 18:40	4.01	4/6/17 1:50
4	1.15	4/19/2017	4/20/2017	28.58	4/20/17 21:30	2.79	4/20/17 22:05
5	1.59	5/4/2017	5/5/2017	34.77	5/5/17 20:20	3.36	5/5/17 18:35
6	1.25	7/7/2017	7/7/2017	30.62	7/7/17 21:00	2.97	7/7/17 21:20
7	1.42	8/28/2017	8/29/2017	22.53	8/29/17 15:15	2.36	8/29/17 15:45
8	1.09	10/10/2017	10/11/2017	22.43	10/11/17 13:25	2.38	10/11/17 13:55
9	1.81	11/17/2017	11/18/2017	34.87	11/18/17 21:20	3.48	11/18/17 21:55

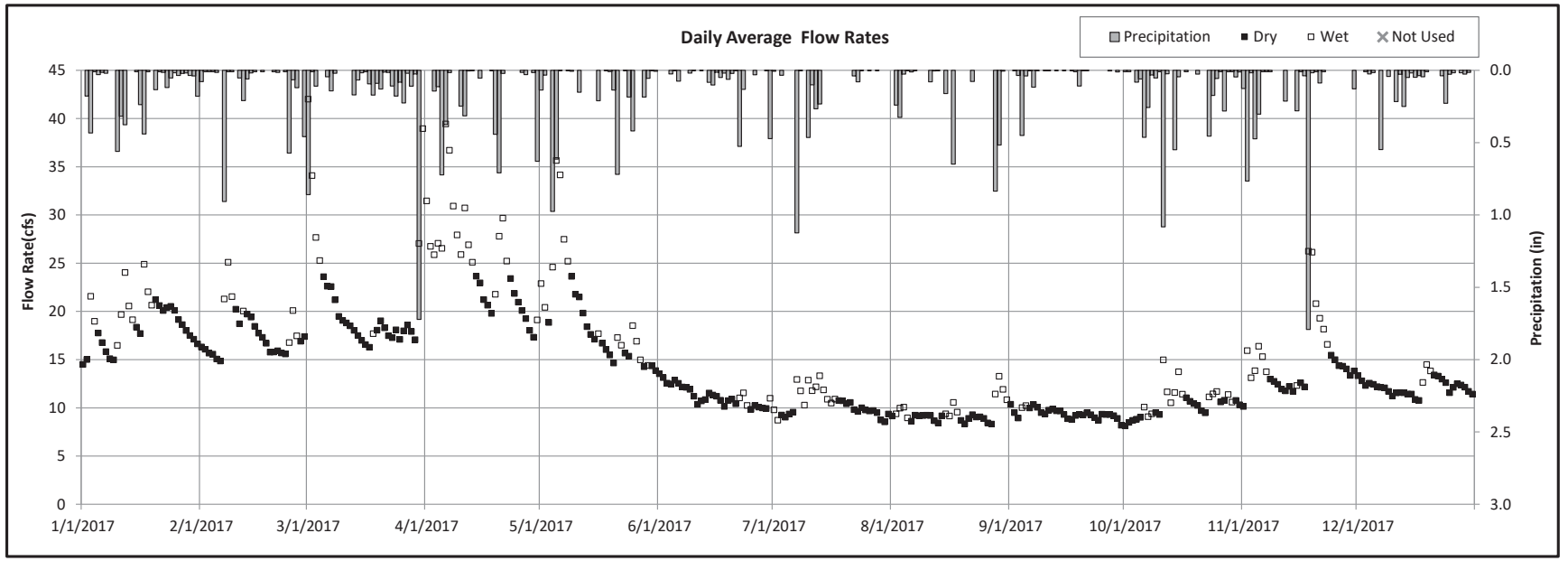
Rouge Valley Sewage Disposal System

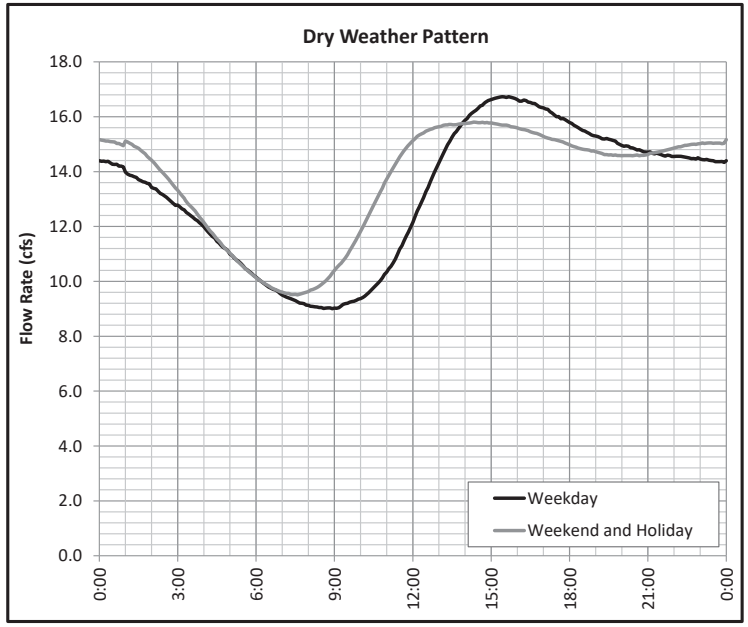
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	18.8	377.2	17.9	358.5	21	10
Feb-17	17.7	321.1	16.9	305.6	21	7
Mar-17	21.3	426.8	18.7	373.8	24	7
Apr-17	25.1	487.1	20.8	402.4	12	18
May-17	19.4	388.7	17.3	347.6	17	14
Jun-17	11.2	217.9	11.3	218.7	26	4
Jul-17	10.4	208.0	9.7	193.9	18	13
Aug-17	9.5	189.5	8.9	178.1	19	12
Sep-17	9.4	182.6	9.4	181.6	28	2
Oct-17	10.5	209.7	9.8	195.5	17	14
Nov-17	15.0	289.9	13.0	251.9	17	13
Dec-17	12.2	244.7	12.1	241.7	28	3

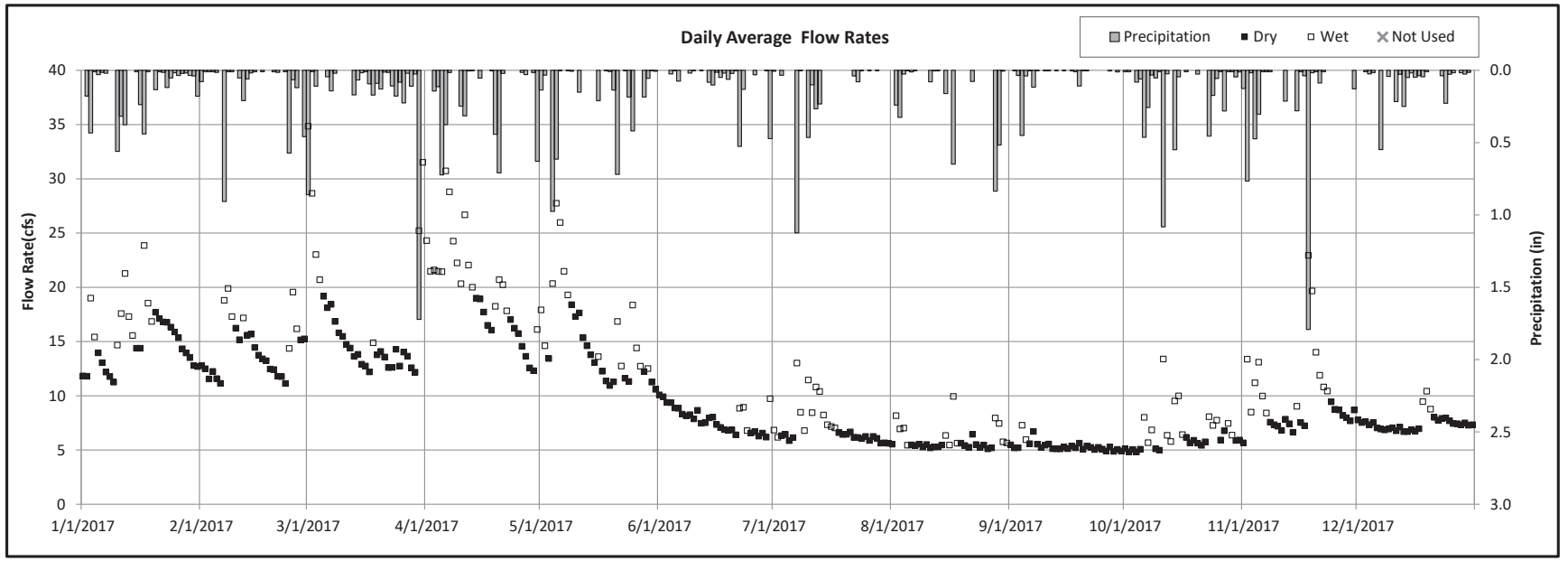
Statistics for Significant Wet Weather Events

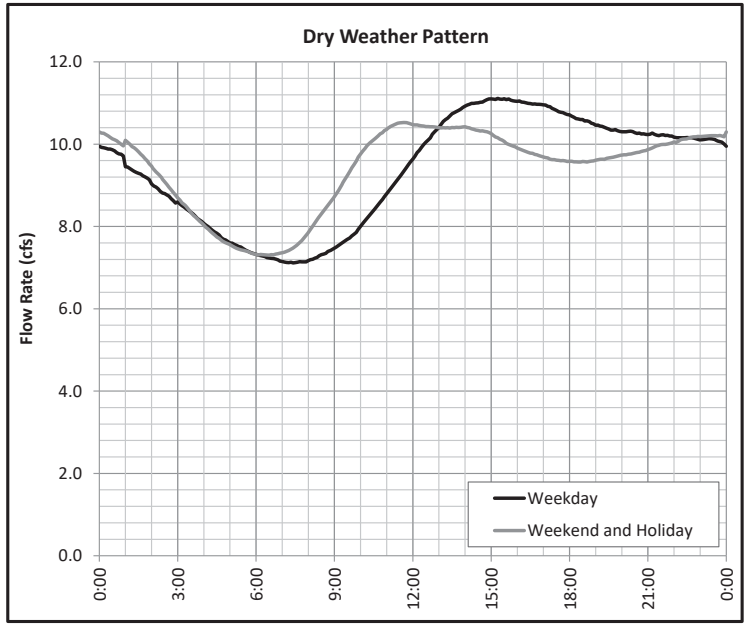
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	51.01	3/1/17 9:55	6.27	3/1/17 10:55
2	1.70	3/30/2017	3/31/2017	40.94	3/31/17 13:10	9.86	3/31/17 0:00
3	1.11	4/5/2017	4/7/2017	40.56	4/6/17 22:45	3.55	4/6/17 2:20
4	1.15	4/19/2017	4/20/2017	38.39	4/20/17 20:00	2.85	4/20/17 22:00
5	1.59	5/4/2017	5/5/2017	42.10	5/5/17 20:10	3.23	5/5/17 18:15
6	1.25	7/7/2017	7/7/2017	21.25	7/7/17 22:20	2.32	7/7/17 22:10
7	1.42	8/28/2017	8/29/2017	23.22	8/28/17 20:25	2.23	8/28/17 20:50
8	1.09	10/10/2017	10/11/2017	25.68	10/11/17 13:45	2.33	10/11/17 14:10
9	1.81	11/17/2017	11/18/2017	38.35	11/18/17 21:45	3.07	11/18/17 21:50

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	15.4	308.6	14.2	283.9	21	10
Feb-17	14.4	259.9	13.3	240.4	21	7
Mar-17	16.9	337.9	14.3	287.3	24	7
Apr-17	19.6	380.3	15.8	307.2	12	18
May-17	15.3	306.8	13.3	266.7	17	14
Jun-17	7.9	152.8	7.8	150.7	26	4
Jul-17	7.2	143.8	6.1	123.0	18	13
Aug-17	6.0	119.4	5.4	108.7	19	12
Sep-17	5.4	104.0	5.3	102.3	28	2
Oct-17	6.5	131.0	5.5	110.7	17	14
Nov-17	9.8	189.8	7.7	148.8	17	13
Dec-17	7.5	150.2	7.3	145.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	39.97	3/1/17 8:55	5.83	3/1/17 8:55
2	1.70	3/30/2017	3/31/2017	37.71	3/30/17 20:35	9.36	3/31/17 0:10
3	1.11	4/5/2017	4/7/2017	33.98	4/5/17 22:10	5.50	4/6/17 2:00
4	1.15	4/19/2017	4/20/2017	31.10	4/19/17 19:15	3.19	4/19/17 19:50
5	1.59	5/4/2017	5/5/2017	34.53	5/5/17 16:25	3.53	5/5/17 19:20
6	1.25	7/7/2017	7/7/2017	25.79	7/7/17 21:10	2.72	7/7/17 21:45
7	1.42	8/28/2017	8/29/2017	22.02	8/28/17 19:40	2.55	8/28/17 20:10
8	1.09	10/10/2017	10/11/2017	24.34	10/11/17 10:15	2.66	10/11/17 10:15
9	1.81	11/17/2017	11/18/2017	32.65	11/18/17 16:35	5.12	11/18/17 22:25

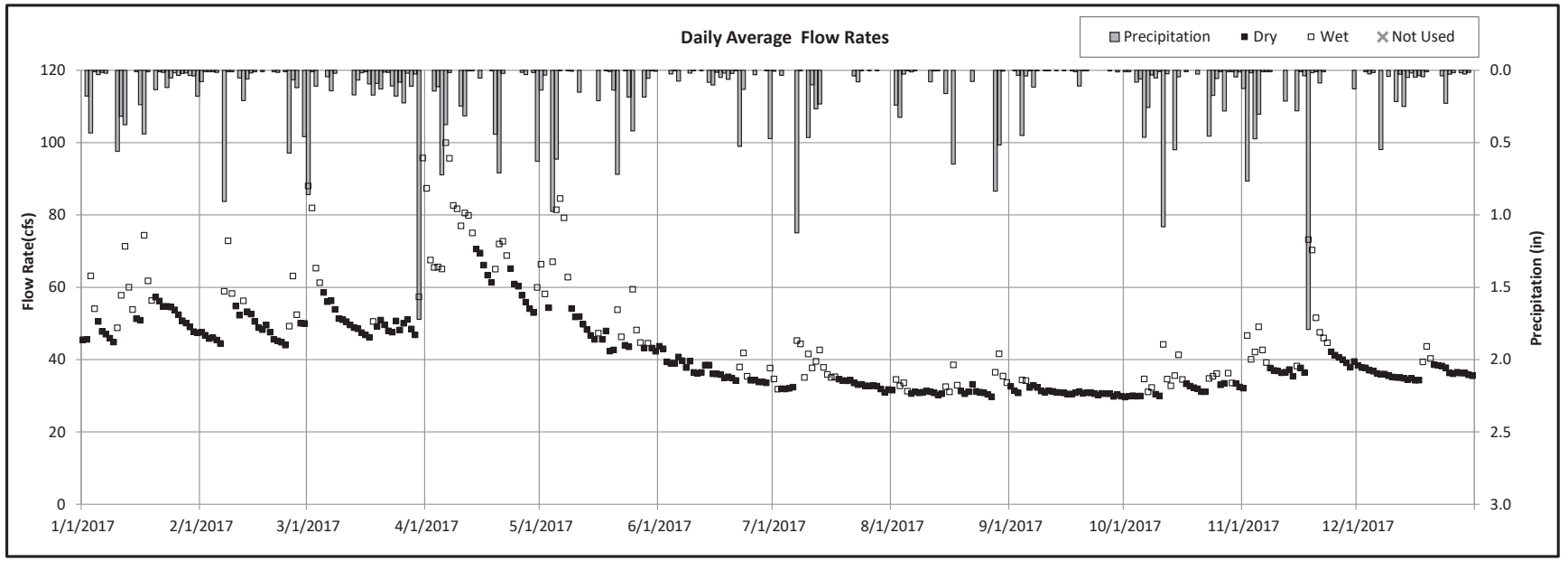
Rouge Valley Sewage Disposal System

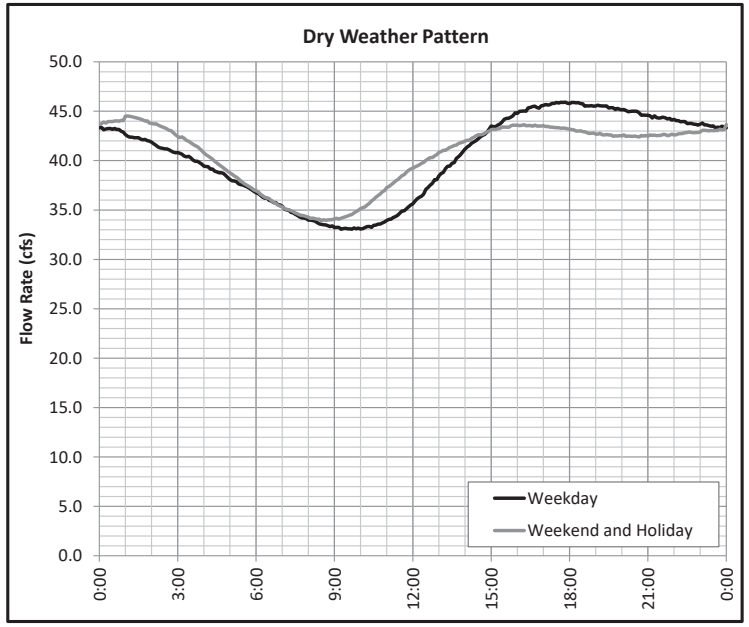
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	53.5	1072.0	50.3	1008.8	21	10
Feb-17	50.8	920.2	48.2	872.9	21	7
Mar-17	55.0	1101.9	50.2	1005.8	24	7
Apr-17	70.0	1356.6	61.5	1191.8	12	18
May-17	52.9	1060.0	46.9	939.0	17	14
Jun-17	37.2	722.0	37.1	719.2	26	4
Jul-17	35.0	702.2	32.8	657.0	18	13
Aug-17	32.3	647.5	30.9	619.9	19	12
Sep-17	31.2	604.6	31.0	600.3	28	2
Oct-17	33.2	666.1	31.4	629.2	17	14
Nov-17	42.5	823.4	37.8	733.6	17	13
Dec-17	36.7	735.3	36.2	725.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	98.49	3/1/17 16:25	7.55	3/1/17 7:50
2	1.70	3/30/2017	3/31/2017	109.90	4/1/17 1:05	12.68	3/30/17 23:50
3	1.11	4/5/2017	4/7/2017	105.16	4/6/17 12:50	9.98	4/6/17 0:35
4	1.15	4/19/2017	4/20/2017	88.63	4/19/17 20:50	7.03	4/20/17 19:40
5	1.59	5/4/2017	5/5/2017	93.27	5/5/17 15:30	7.68	5/5/17 19:40
6	1.25	7/7/2017	7/7/2017	92.96	7/7/17 22:30	4.38	7/7/17 23:10
7	1.42	8/28/2017	8/29/2017	74.97	8/28/17 23:10	5.68	8/28/17 23:00
8	1.09	10/10/2017	10/11/2017	62.89	10/11/17 13:50	3.40	10/11/17 14:20
9	1.81	11/17/2017	11/18/2017	102.41	11/19/17 2:05	9.14	11/18/17 18:10

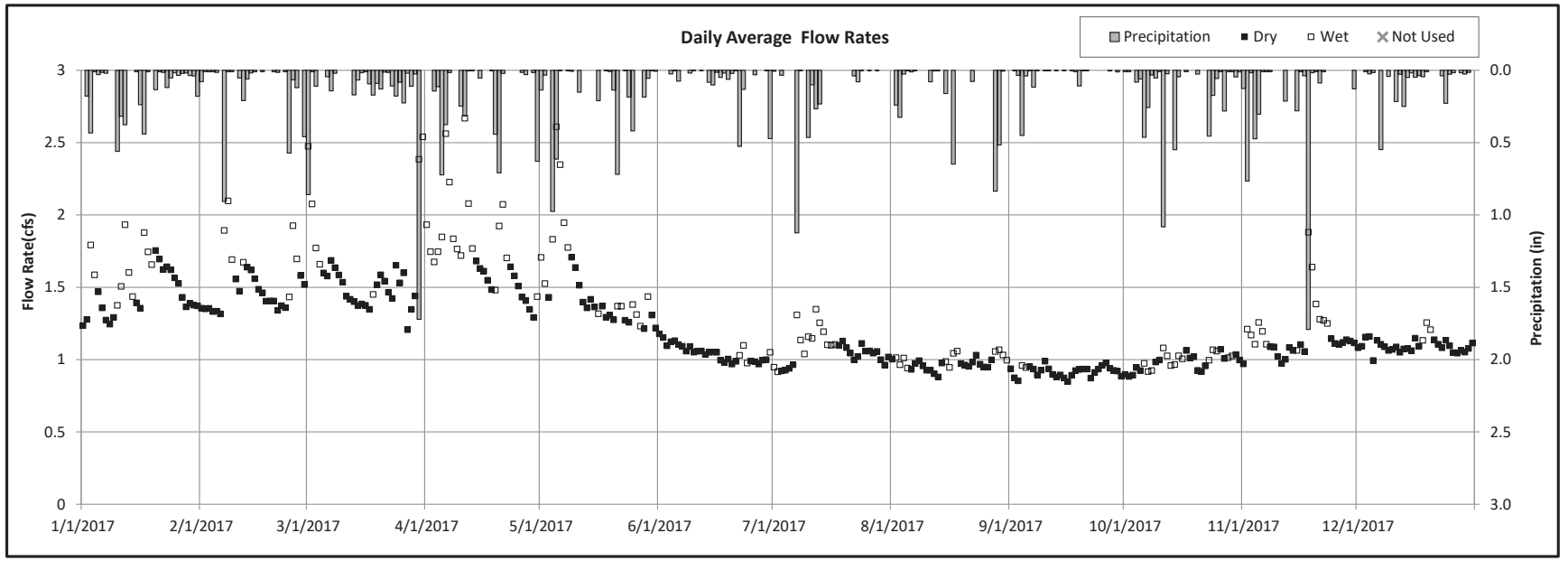
Rouge Valley Sewage Disposal System

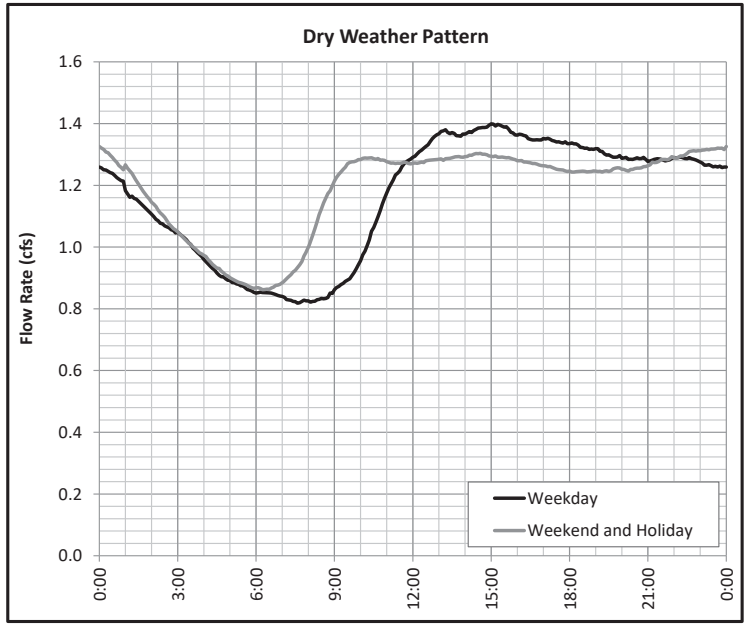
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	1.5	30.2	1.4	28.9	21	10
Feb-17	1.5	27.5	1.4	26.0	21	7
Mar-17	1.6	32.3	1.5	29.8	24	7
Apr-17	1.7	33.8	1.5	29.3	12	18
May-17	1.5	30.0	1.4	27.5	17	14
Jun-17	1.0	20.3	1.0	20.3	26	4
Jul-17	1.1	21.4	1.0	20.5	18	13
Aug-17	1.0	19.6	1.0	19.2	19	12
Sep-17	0.9	17.8	0.9	17.7	28	2
Oct-17	1.0	19.7	1.0	19.5	17	14
Nov-17	1.2	22.7	1.1	20.9	17	13
Dec-17	1.1	22.0	1.1	21.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	3.73	3/1/17 6:55	1.58	3/1/17 7:00
2	1.70	3/30/2017	3/31/2017	4.00	3/30/17 22:25	2.18	3/30/17 22:55
3	1.11	4/5/2017	4/7/2017	2.86	4/5/17 22:45	1.30	4/5/17 22:45
4	1.15	4/19/2017	4/20/2017	3.13	4/20/17 17:20	1.30	4/20/17 17:50
5	1.59	5/4/2017	5/5/2017	3.24	5/5/17 18:05	1.35	5/5/17 18:30
6	1.25	7/7/2017	7/7/2017	1.83	7/7/17 6:45	0.95	7/7/17 7:05
7	1.42	8/28/2017	8/29/2017	1.34	8/29/17 13:25	0.82	8/29/17 13:40
8	1.09	10/10/2017	10/11/2017	1.33	10/11/17 8:35	0.83	10/11/17 12:45
9	1.81	11/17/2017	11/18/2017	2.74	11/18/17 15:55	1.15	11/18/17 16:25

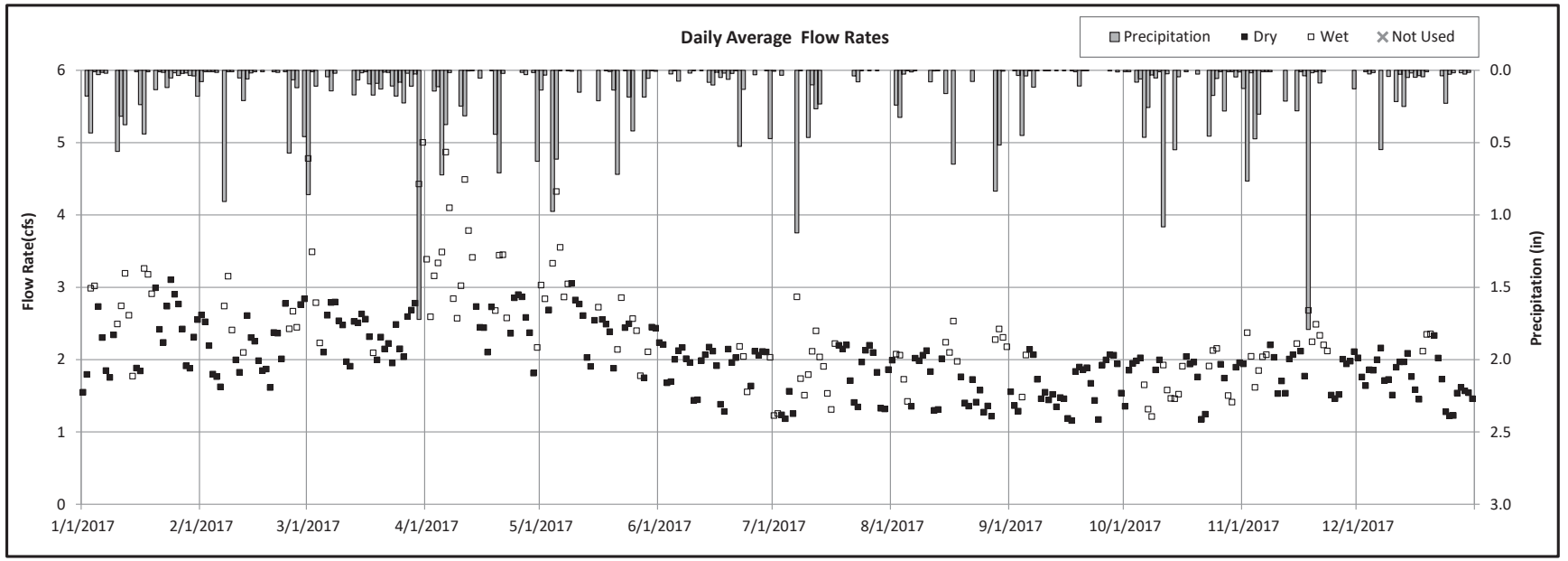
Rouge Valley Sewage Disposal System

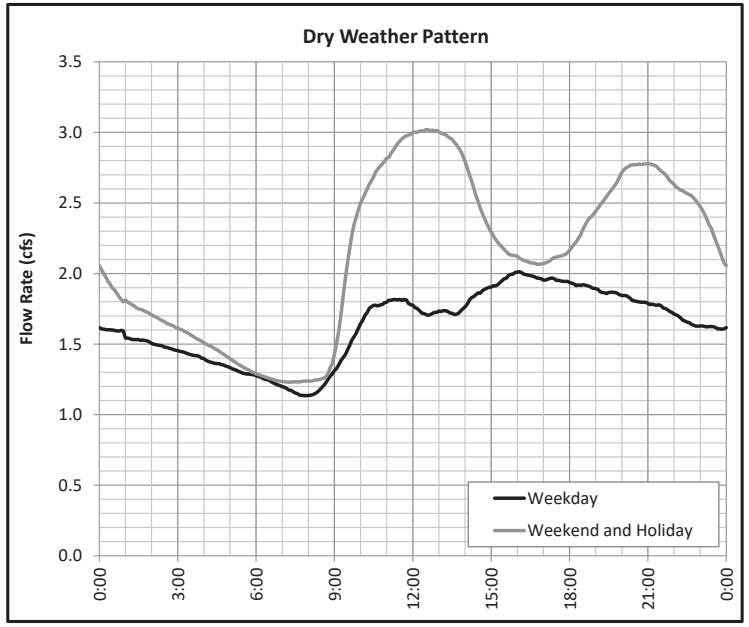
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	2.5	49.4	2.3	46.1	21	10
Feb-17	2.3	41.3	2.2	39.6	21	7
Mar-17	2.6	52.9	2.4	47.6	24	7
Apr-17	3.0	57.9	2.5	48.8	12	18
May-17	2.6	52.2	2.4	48.7	17	14
Jun-17	1.9	37.4	1.9	37.3	26	4
Jul-17	1.8	35.4	1.7	34.4	18	13
Aug-17	1.8	36.4	1.6	32.7	19	12
Sep-17	1.7	32.0	1.6	31.8	28	2
Oct-17	1.7	34.8	1.8	36.1	17	14
Nov-17	2.0	38.6	1.8	35.8	17	13
Dec-17	1.8	35.7	1.7	34.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	6.52	3/1/17 9:25	1.18	3/1/17 10:10
2	1.70	3/30/2017	3/31/2017	8.30	3/30/17 20:35	1.43	3/30/17 21:15
3	1.11	4/5/2017	4/7/2017	5.75	4/6/17 10:55	1.10	4/6/17 11:05
4	1.15	4/19/2017	4/20/2017	5.66	4/20/17 19:15	1.10	4/20/17 20:55
5	1.59	5/4/2017	5/5/2017	5.68	5/5/17 16:15	1.12	5/5/17 20:05
6	1.25	7/7/2017	7/7/2017	4.16	7/7/17 23:55	0.93	7/7/17 9:55
7	1.42	8/28/2017	8/29/2017	4.20	8/29/17 12:35	0.94	8/28/17 20:25
8	1.09	10/10/2017	10/11/2017	3.39	10/11/17 10:10	0.84	10/11/17 10:55
9	1.81	11/17/2017	11/18/2017	3.66	11/19/17 19:55	0.88	11/19/17 20:40

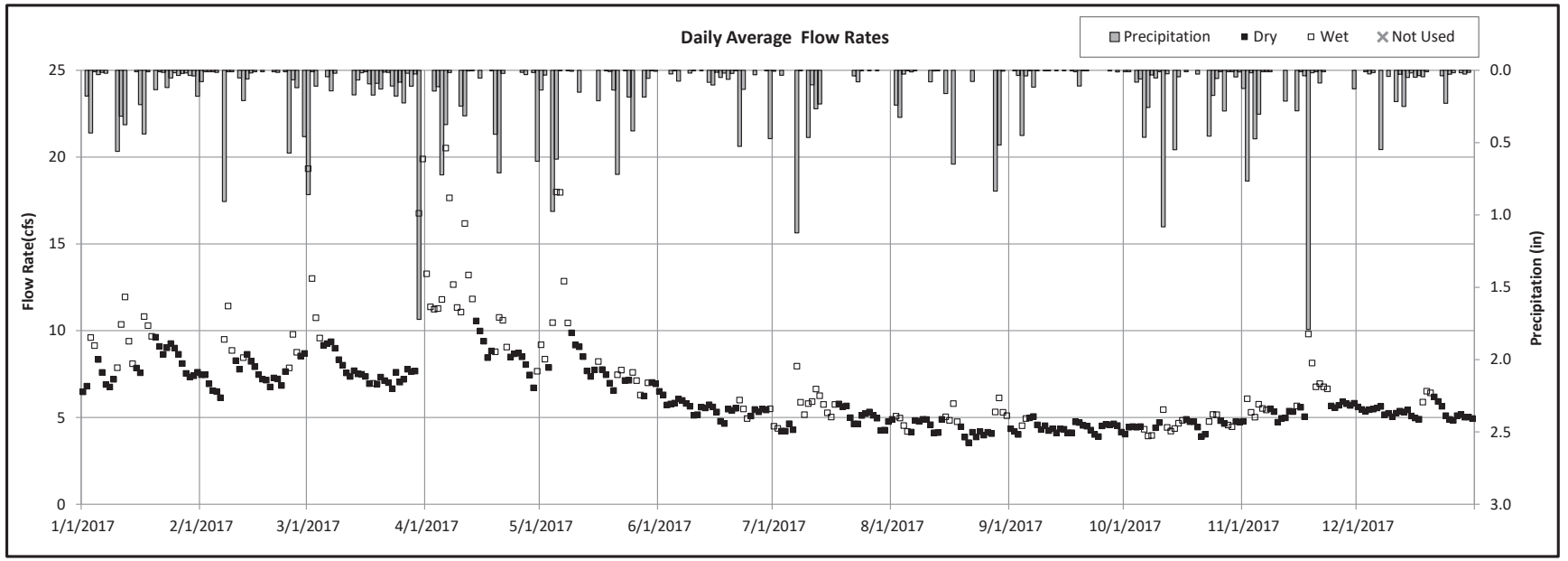
Rouge Valley Sewage Disposal System

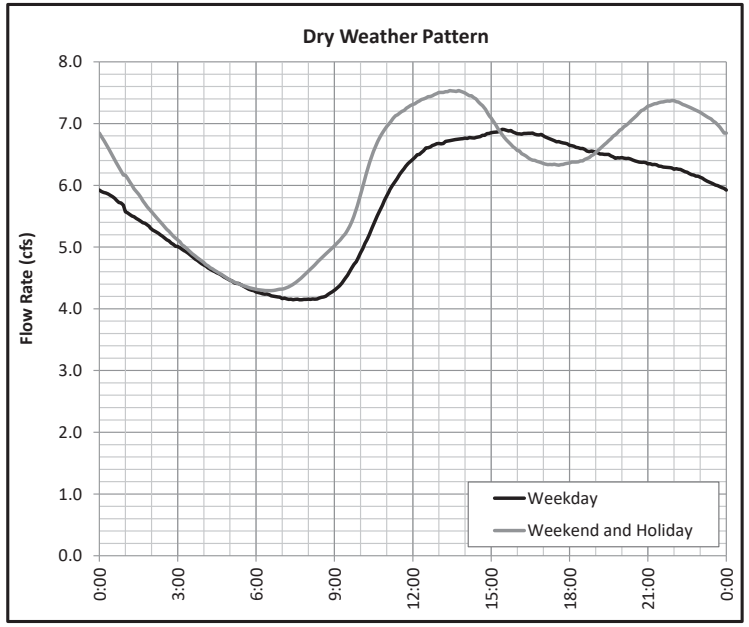
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	8.5	170.4	7.9	158.9	21	10
Feb-17	7.9	142.9	7.5	134.9	21	7
Mar-17	9.1	181.7	7.7	154.3	24	7
Apr-17	10.8	209.3	8.6	167.5	12	18
May-17	8.7	173.9	7.7	153.7	17	14
Jun-17	5.5	107.3	5.5	107.5	26	4
Jul-17	5.2	104.6	4.9	97.5	18	13
Aug-17	4.6	92.6	4.3	86.8	19	12
Sep-17	4.4	85.7	4.4	85.3	28	2
Oct-17	4.5	91.0	4.5	90.3	17	14
Nov-17	5.8	113.4	5.4	104.5	17	13
Dec-17	5.4	107.8	5.3	105.9	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	24.56	3/1/17 9:45	2.52	3/1/17 10:45
2	1.70	3/30/2017	3/31/2017	33.30	3/30/17 21:05	2.95	3/30/17 21:40
3	1.11	4/5/2017	4/7/2017	23.57	4/6/17 18:50	2.42	4/6/17 19:25
4	1.15	4/19/2017	4/20/2017	16.84	4/20/17 17:15	1.99	4/20/17 16:55
5	1.59	5/4/2017	5/5/2017	23.32	5/5/17 17:10	2.28	5/5/17 17:25
6	1.25	7/7/2017	7/7/2017	12.73	7/7/17 5:45	1.71	7/7/17 6:15
7	1.42	8/28/2017	8/29/2017	13.34	8/29/17 13:25	1.80	8/29/17 13:50
8	1.09	10/10/2017	10/11/2017	8.28	10/11/17 11:00	1.40	10/11/17 11:30
9	1.81	11/17/2017	11/18/2017	14.65	11/18/17 15:20	1.86	11/18/17 15:50

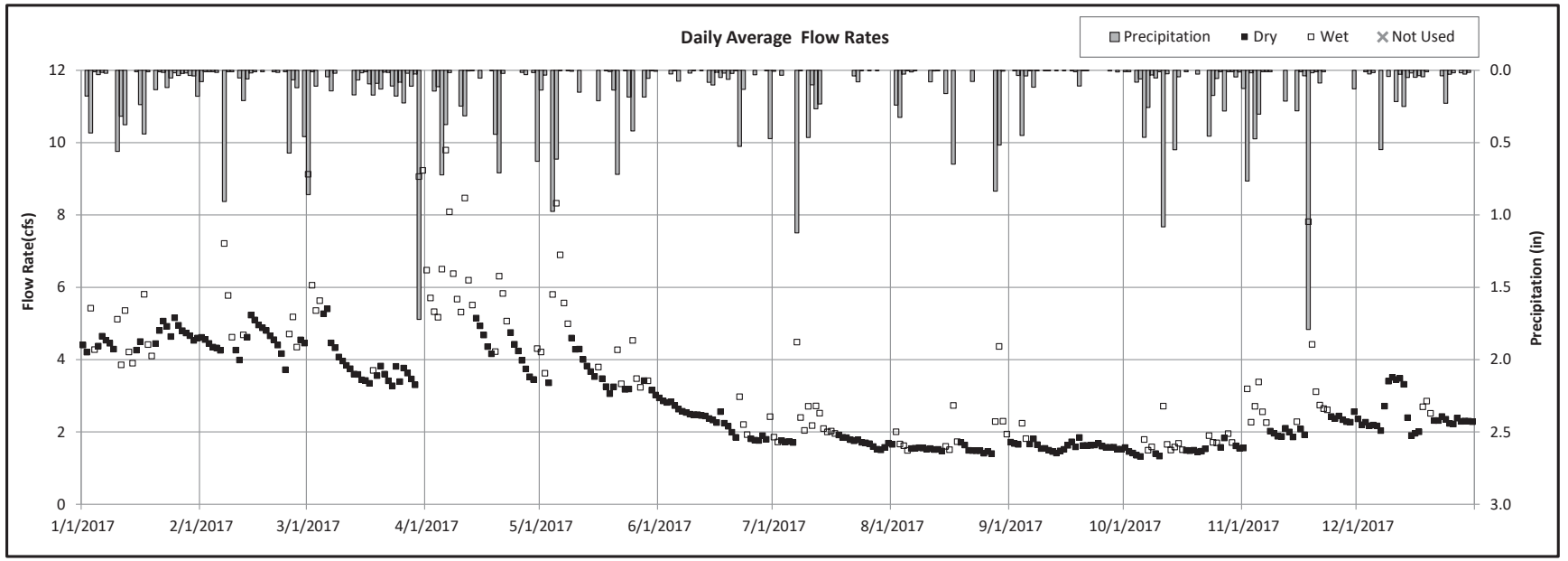
Rouge Valley Sewage Disposal System

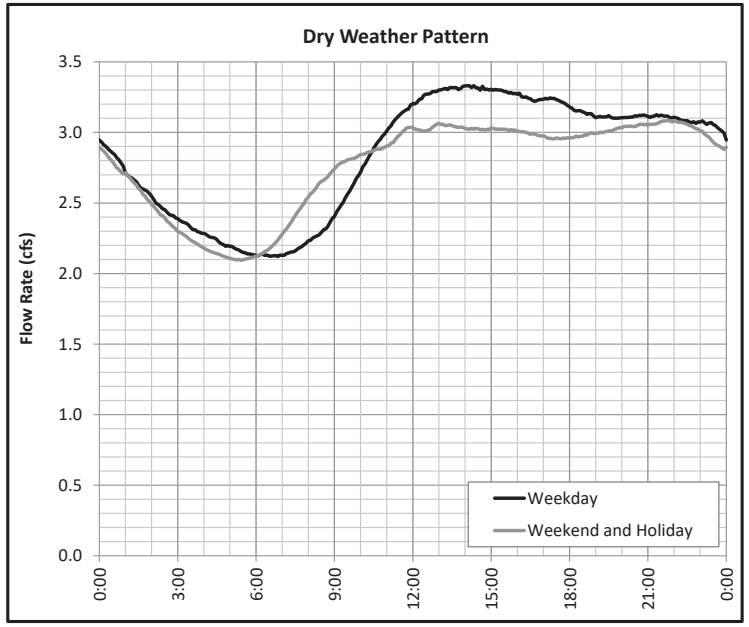
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.6	92.6	4.6	92.5	21	10
Feb-17	4.7	84.9	4.5	81.7	21	7
Mar-17	4.5	90.2	3.8	76.3	24	7
Apr-17	5.4	104.5	4.3	83.0	12	18
May-17	4.1	81.4	3.6	71.3	17	14
Jun-17	2.3	45.6	2.3	45.5	26	4
Jul-17	2.0	39.7	1.7	34.3	18	13
Aug-17	1.7	35.0	1.5	30.5	19	12
Sep-17	1.6	31.6	1.6	31.1	28	2
Oct-17	1.6	32.2	1.5	29.8	17	14
Nov-17	2.6	50.3	2.1	40.9	17	13
Dec-17	2.5	49.7	2.5	49.3	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	13.36	3/1/17 5:30	2.75	3/1/17 6:00
2	1.70	3/30/2017	3/31/2017	13.88	3/30/17 21:35	2.92	3/30/17 21:20
3	1.11	4/5/2017	4/7/2017	13.22	4/5/17 20:35	2.79	4/5/17 20:55
4	1.15	4/19/2017	4/20/2017	13.29	4/20/17 16:20	2.83	4/20/17 16:45
5	1.59	5/4/2017	5/5/2017	12.54	5/5/17 17:40	2.64	5/5/17 18:10
6	1.25	7/7/2017	7/7/2017	12.10	7/7/17 5:40	2.55	7/7/17 6:05
7	1.42	8/28/2017	8/29/2017	12.80	8/29/17 13:55	2.75	8/29/17 14:15
8	1.09	10/10/2017	10/11/2017	4.93	10/11/17 8:50	1.51	10/11/17 9:15
9	1.81	11/17/2017	11/18/2017	12.93	11/18/17 15:05	2.67	11/18/17 15:40

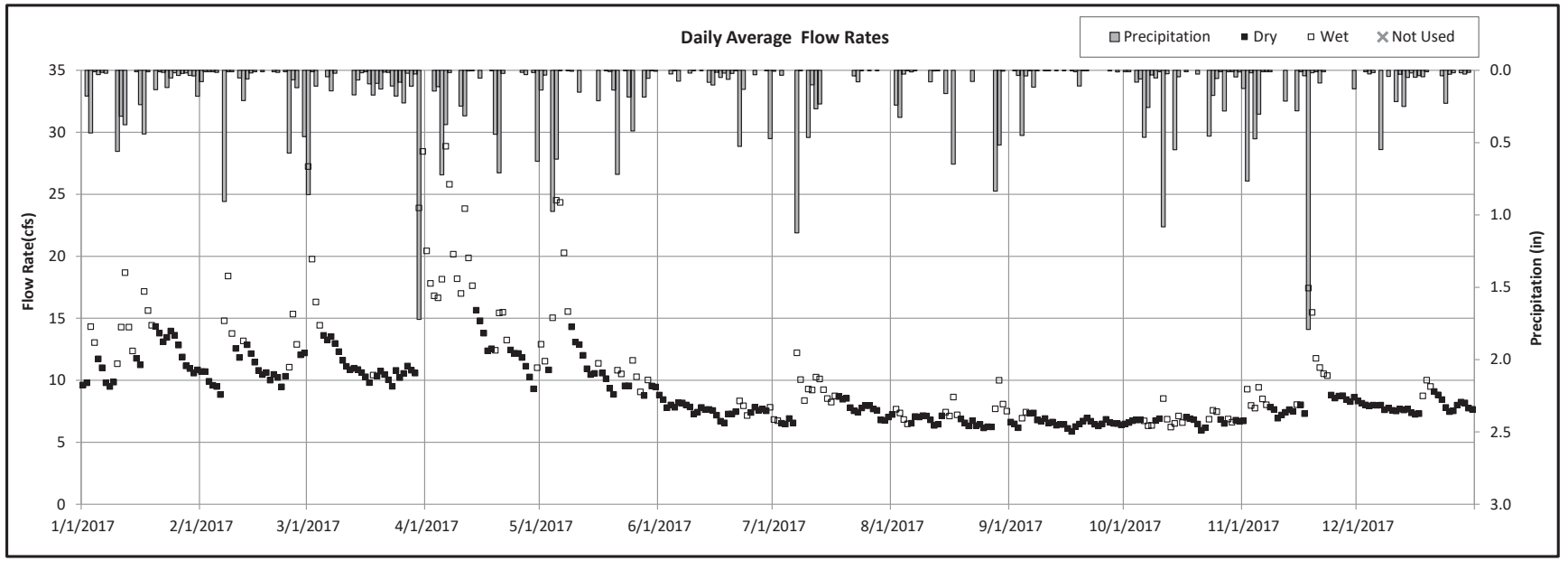
Rouge Valley Sewage Disposal System

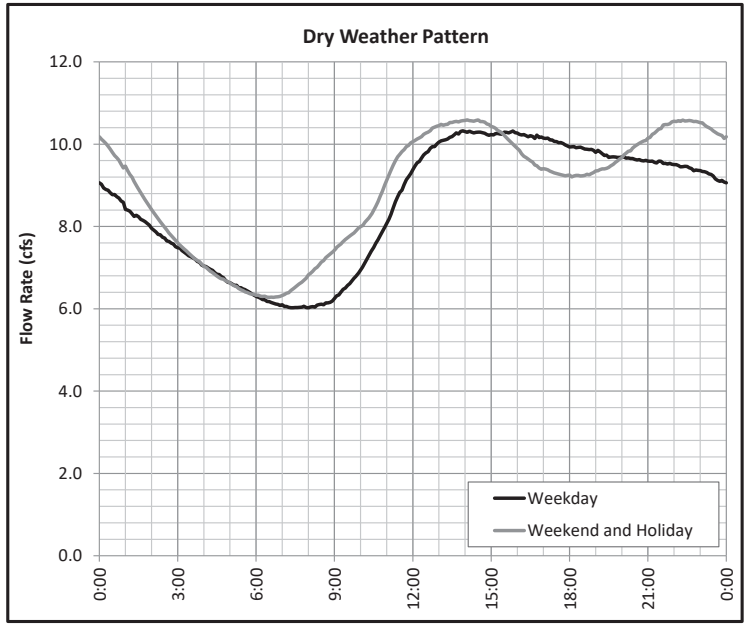
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	12.6	252.2	11.7	233.5	21	10
Feb-17	11.6	210.7	10.8	195.3	21	7
Mar-17	13.1	263.2	11.1	222.8	24	7
Apr-17	15.9	308.3	12.4	239.8	12	18
May-17	12.2	244.6	10.6	213.0	17	14
Jun-17	7.7	148.6	7.6	148.2	26	4
Jul-17	8.1	162.9	7.5	149.5	18	13
Aug-17	7.1	141.3	6.7	133.6	19	12
Sep-17	6.6	128.1	6.6	127.3	28	2
Oct-17	6.8	135.5	6.7	133.3	17	14
Nov-17	9.0	174.4	7.9	153.2	17	13
Dec-17	8.0	160.8	7.9	157.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	34.97	3/1/17 6:50	2.23	3/1/17 6:55
2	1.70	3/30/2017	3/31/2017	46.61	3/30/17 21:10	3.00	3/30/17 22:35
3	1.11	4/5/2017	4/7/2017	32.70	4/6/17 21:15	2.10	4/6/17 19:25
4	1.15	4/19/2017	4/20/2017	26.08	4/20/17 16:45	1.91	4/20/17 17:15
5	1.59	5/4/2017	5/5/2017	31.69	5/5/17 17:45	2.08	5/5/17 18:15
6	1.25	7/7/2017	7/7/2017	20.51	7/7/17 21:25	1.69	7/7/17 21:50
7	1.42	8/28/2017	8/29/2017	22.60	8/29/17 13:55	1.82	8/29/17 14:05
8	1.09	10/10/2017	10/11/2017	12.36	10/11/17 11:40	1.31	10/11/17 12:10
9	1.81	11/17/2017	11/18/2017	25.36	11/18/17 15:45	1.85	11/18/17 16:20

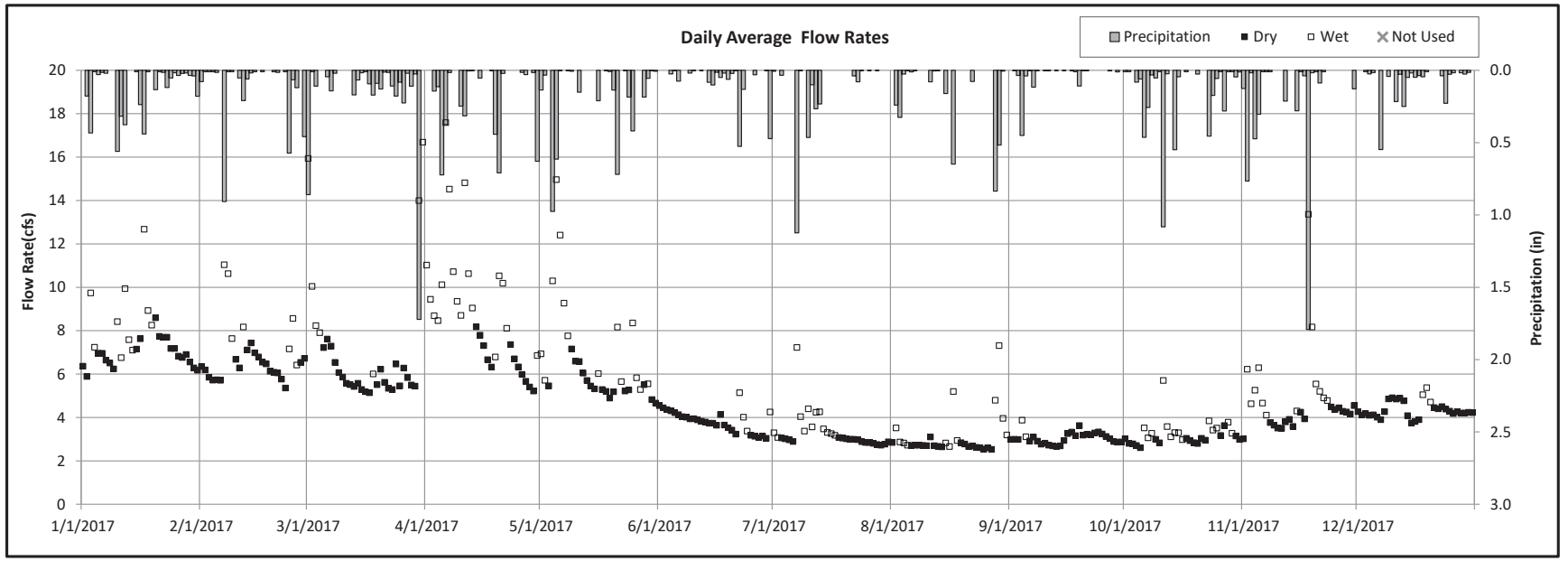
Rouge Valley Sewage Disposal System

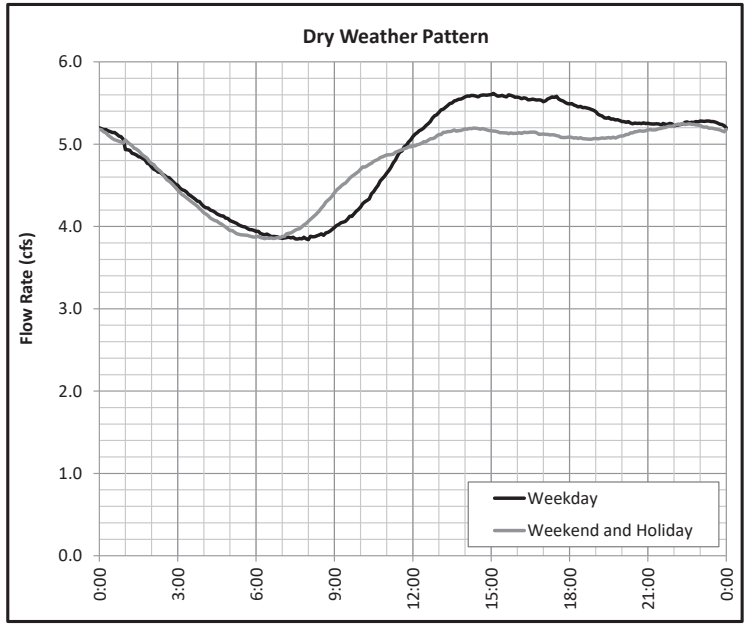
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	7.5	150.2	6.9	139.1	21	10
Feb-17	6.9	124.1	6.3	114.1	21	7
Mar-17	7.1	142.1	5.9	117.8	24	7
Apr-17	8.8	170.9	6.6	127.4	12	18
May-17	6.7	133.4	5.5	111.1	17	14
Jun-17	3.8	74.1	3.8	73.1	26	4
Jul-17	3.3	66.6	2.9	58.4	18	13
Aug-17	3.1	62.1	2.7	54.1	19	12
Sep-17	3.1	59.2	3.0	58.6	28	2
Oct-17	3.2	64.5	3.0	59.2	17	14
Nov-17	4.8	93.6	4.0	76.8	17	13
Dec-17	4.4	87.3	4.3	85.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	19.47	3/1/17 7:15	2.09	3/1/17 12:10
2	1.70	3/30/2017	3/31/2017	20.26	3/30/17 11:55	7.21	3/30/17 23:50
3	1.11	4/5/2017	4/7/2017	21.22	4/5/17 21:35	2.43	4/6/17 0:50
4	1.15	4/19/2017	4/20/2017	21.17	4/20/17 17:35	1.90	4/20/17 18:30
5	1.59	5/4/2017	5/5/2017	20.53	5/5/17 17:20	2.02	5/5/17 18:50
6	1.25	7/7/2017	7/7/2017	15.03	7/7/17 7:00	1.33	7/7/17 7:05
7	1.42	8/28/2017	8/29/2017	16.50	8/29/17 14:55	1.46	8/29/17 15:25
8	1.09	10/10/2017	10/11/2017	10.30	10/11/17 10:15	1.09	10/11/17 10:45
9	1.81	11/17/2017	11/18/2017	19.83	11/18/17 16:10	1.98	11/18/17 16:50

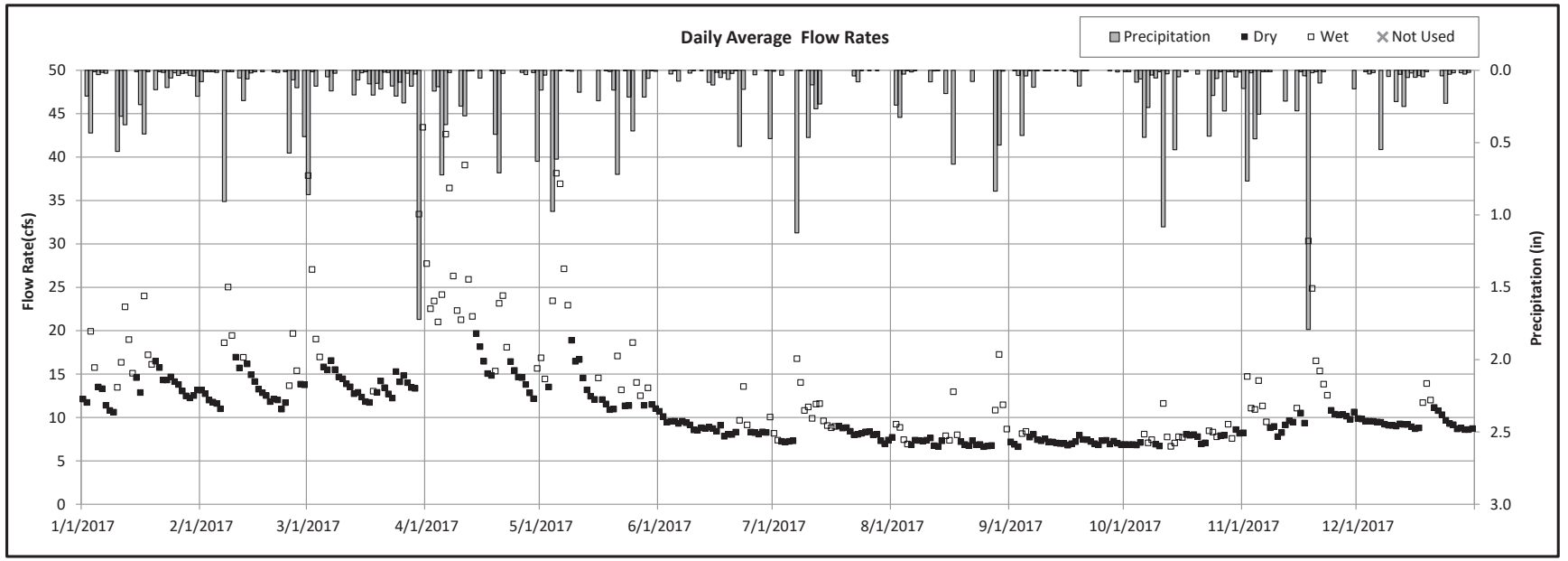
Rouge Valley Sewage Disposal System

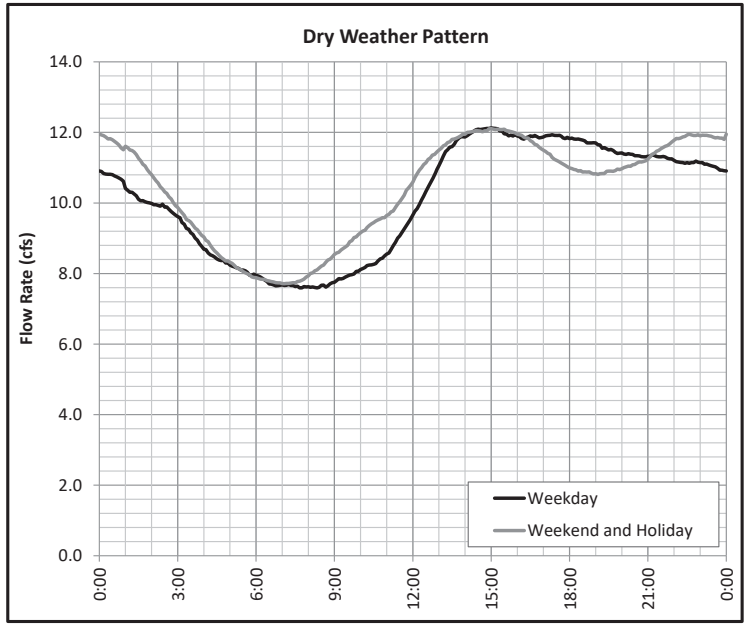
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	14.7	295.5	13.2	264.9	21	10
Feb-17	14.4	260.7	13.1	236.8	21	7
Mar-17	16.9	337.7	13.8	276.9	24	7
Apr-17	21.2	410.1	15.3	297.3	12	18
May-17	16.2	325.0	12.9	258.9	17	14
Jun-17	9.1	175.9	8.8	171.4	26	4
Jul-17	9.0	181.1	7.9	158.6	18	13
Aug-17	8.1	162.2	7.1	141.5	19	12
Sep-17	7.3	141.0	7.2	139.6	28	2
Oct-17	7.7	154.4	7.4	149.1	17	14
Nov-17	12.0	231.7	9.6	185.2	17	13
Dec-17	9.6	193.1	9.3	186.9	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	48.02	3/1/17 10:45	2.89	3/1/17 12:05
2	1.70	3/30/2017	3/31/2017	54.24	3/30/17 18:05	8.84	3/30/17 23:45
3	1.11	4/5/2017	4/7/2017	47.86	4/5/17 23:25	2.83	4/5/17 22:50
4	1.15	4/19/2017	4/20/2017	41.24	4/20/17 20:30	2.57	4/20/17 17:20
5	1.59	5/4/2017	5/5/2017	47.38	5/5/17 18:35	2.77	5/5/17 18:45
6	1.25	7/7/2017	7/7/2017	29.75	7/7/17 21:55	2.23	7/7/17 22:40
7	1.42	8/28/2017	8/29/2017	28.43	8/29/17 14:40	2.47	8/29/17 14:45
8	1.09	10/10/2017	10/11/2017	21.35	10/11/17 11:25	1.33	10/11/17 12:00
9	1.81	11/17/2017	11/18/2017	45.58	11/18/17 16:40	2.73	11/18/17 17:10

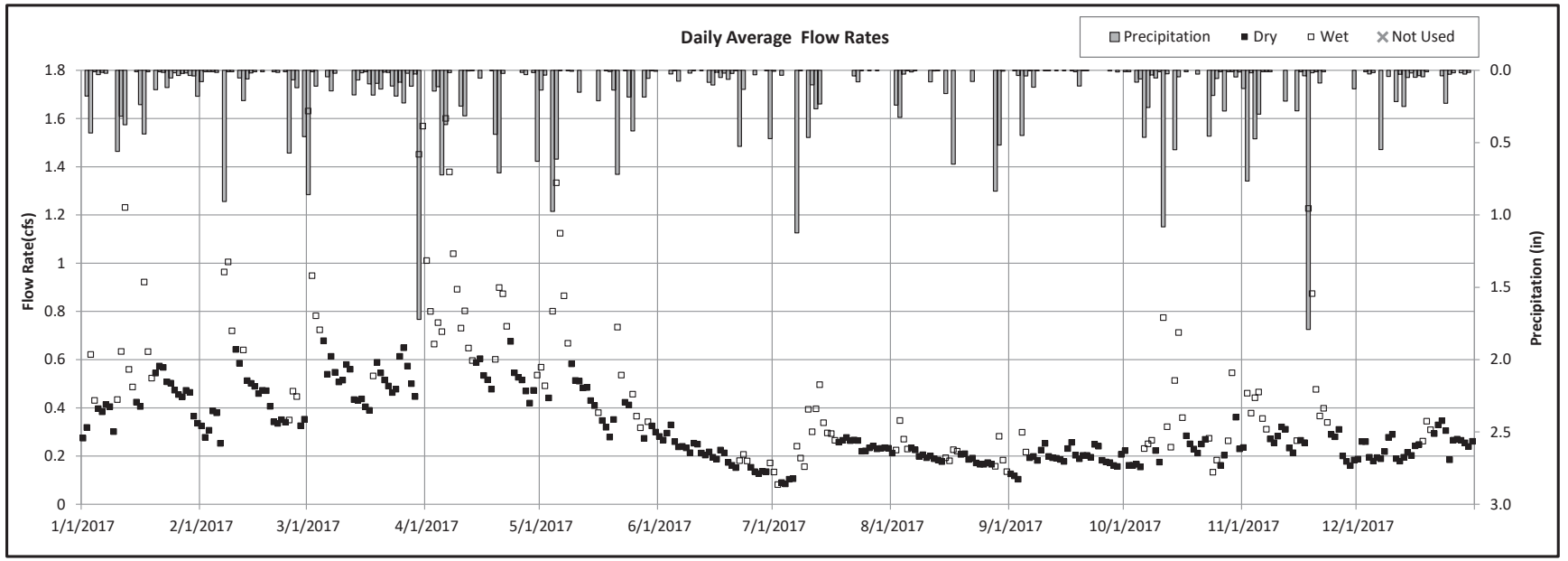
Rouge Valley Sewage Disposal System

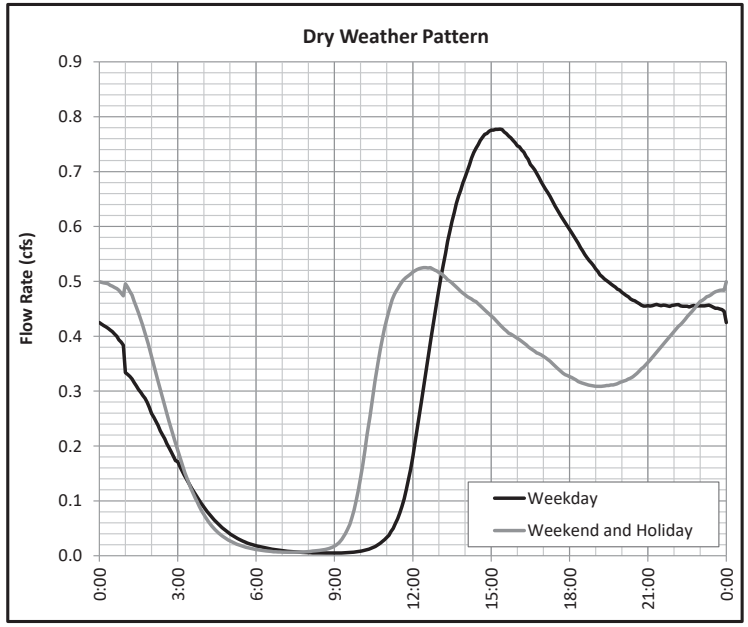
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	0.5	10.0	0.4	8.6	21	10
Feb-17	0.5	8.5	0.4	7.3	21	7
Mar-17	0.6	13.0	0.5	10.4	24	7
Apr-17	0.7	14.0	0.5	10.2	12	18
May-17	0.5	10.2	0.4	8.1	17	14
Jun-17	0.2	4.0	0.2	4.1	26	4
Jul-17	0.2	4.8	0.2	4.2	18	13
Aug-17	0.2	4.1	0.2	3.8	19	12
Sep-17	0.2	3.8	0.2	3.7	28	2
Oct-17	0.3	5.7	0.2	4.4	17	14
Nov-17	0.4	6.8	0.2	4.8	17	13
Dec-17	0.2	4.9	0.2	4.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	2.37	3/1/17 9:50	0.57	3/1/17 10:00
2	1.70	3/30/2017	3/31/2017	3.50	3/30/17 22:45	0.69	3/30/17 23:10
3	1.11	4/5/2017	4/7/2017	1.88	4/6/17 21:40	0.49	4/6/17 22:25
4	1.15	4/19/2017	4/20/2017	1.91	4/20/17 22:05	0.49	4/20/17 22:25
5	1.59	5/4/2017	5/5/2017	2.20	5/5/17 17:10	0.54	5/5/17 17:25
6	1.25	7/7/2017	7/7/2017	0.66	7/7/17 20:25	0.28	7/7/17 20:45
7	1.42	8/28/2017	8/29/2017	0.69	8/29/17 13:45	0.29	8/29/17 14:00
8	1.09	10/10/2017	10/11/2017	2.01	10/11/17 10:25	0.50	10/11/17 11:25
9	1.81	11/17/2017	11/18/2017	2.80	11/18/17 17:10	0.61	11/18/17 17:40

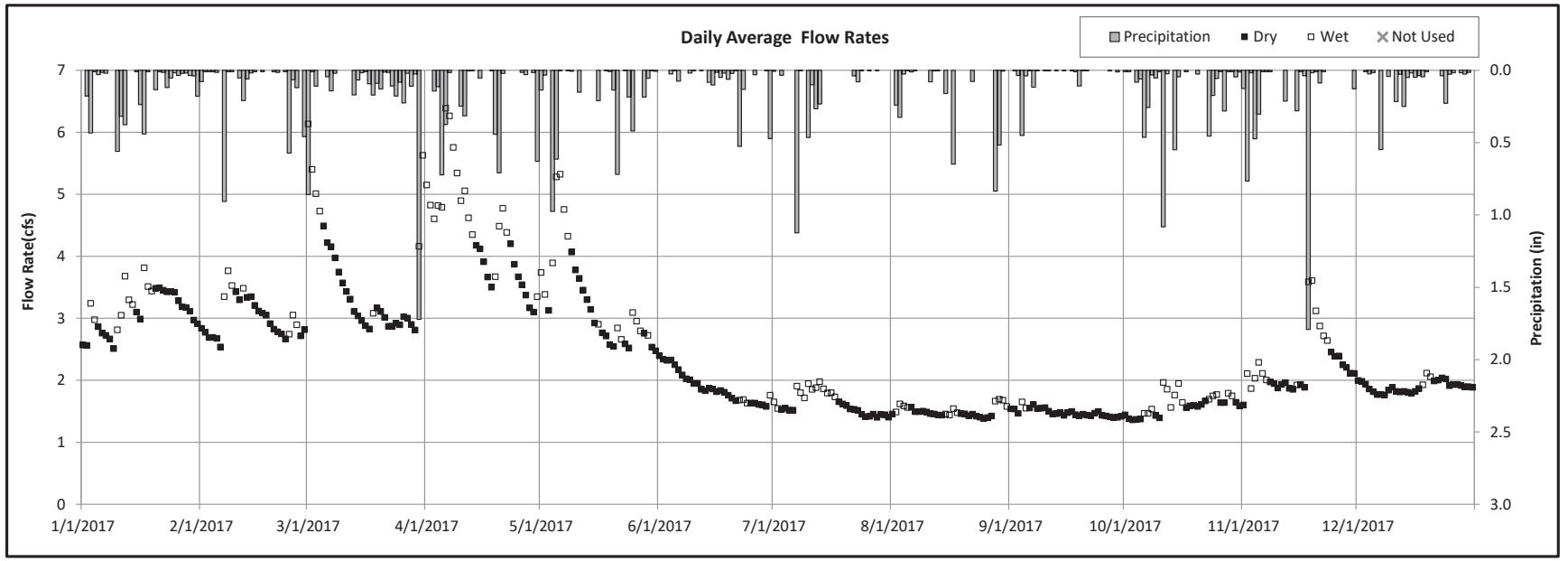
Rouge Valley Sewage Disposal System

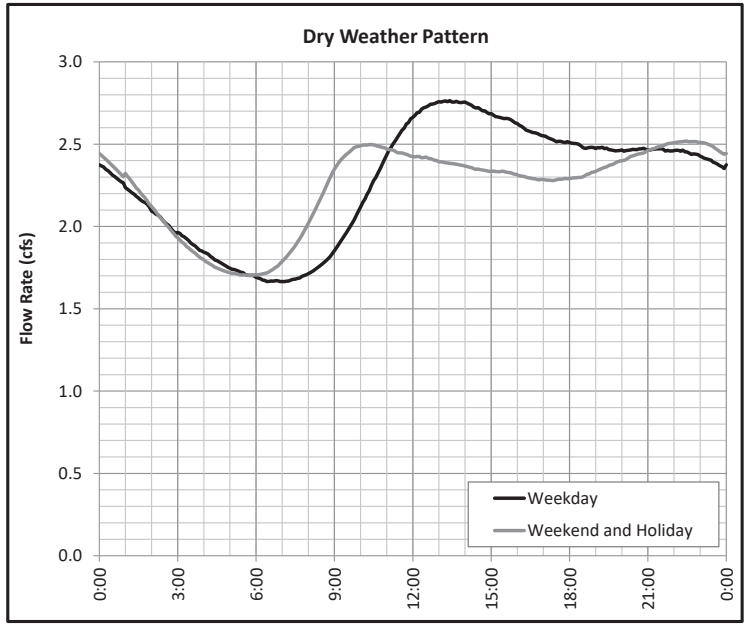
Annual Meter Report

Meter: P-28
Interceptor Manhole ID:

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	3.1	62.7	3.1	61.1	21	10
Feb-17	3.0	54.5	2.9	53.0	21	7
Mar-17	3.6	72.6	3.3	65.3	24	7
Apr-17	4.4	85.2	3.7	71.5	12	18
May-17	3.3	65.6	3.0	60.0	17	14
Jun-17	1.9	36.6	1.9	37.2	26	4
Jul-17	1.6	32.6	1.5	30.0	18	13
Aug-17	1.5	30.0	1.5	29.1	19	12
Sep-17	1.5	28.7	1.5	28.6	28	2
Oct-17	1.6	32.2	1.5	30.5	17	14
Nov-17	2.3	43.7	2.0	39.6	17	13
Dec-17	1.9	38.0	1.9	37.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	7.22	3/1/17 1:35	7.18	3/1/17 10:20
2	1.70	3/30/2017	3/31/2017	6.59	3/31/17 2:35	6.86	3/31/17 0:25
3	1.11	4/5/2017	4/7/2017	6.64	4/6/17 0:30	2.40	4/6/17 21:20
4	1.15	4/19/2017	4/20/2017	6.28	4/20/17 16:40	2.32	4/20/17 18:25
5	1.59	5/4/2017	5/5/2017	6.13	5/5/17 18:35	2.56	5/5/17 18:30
6	1.25	7/7/2017	7/7/2017	2.66	7/7/17 20:10	1.27	7/7/17 21:35
7	1.42	8/28/2017	8/29/2017	3.64	8/28/17 17:40	1.60	8/28/17 19:00
8	1.09	10/10/2017	10/11/2017	3.00	10/11/17 8:10	3.38	10/11/17 23:55
9	1.81	11/17/2017	11/18/2017	5.08	11/18/17 15:20	1.98	11/18/17 22:10

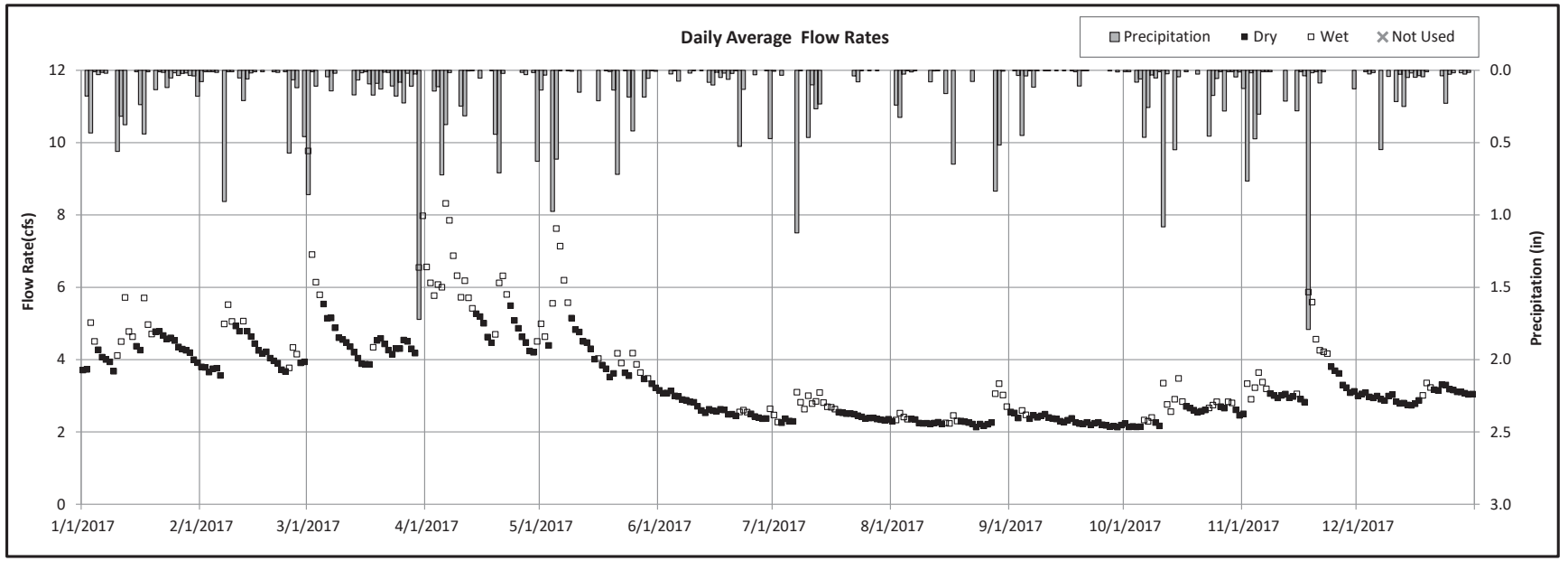
Rouge Valley Sewage Disposal System

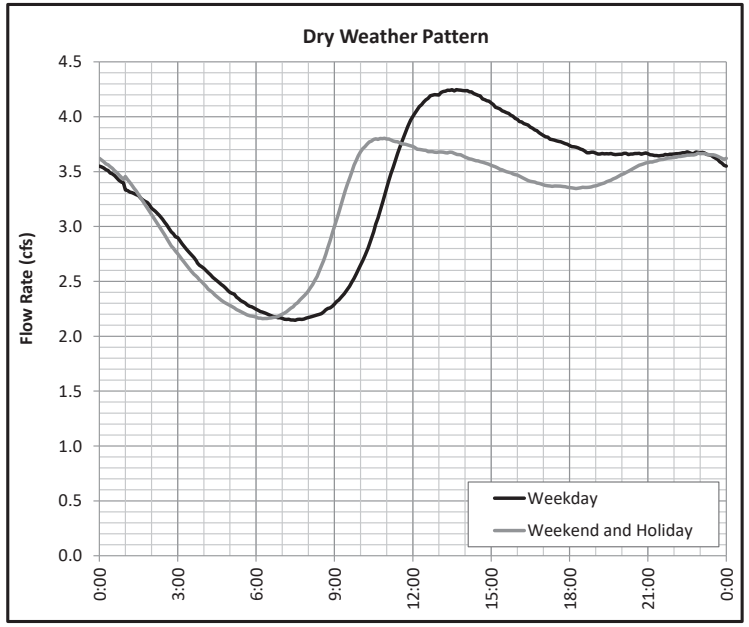
Annual Meter Report

Meter: P-29
Interceptor Manhole ID:

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.4	88.9	4.2	84.8	21	10
Feb-17	4.2	76.6	4.1	73.8	21	7
Mar-17	5.0	99.6	4.4	89.0	24	7
Apr-17	5.6	108.5	4.8	92.9	12	18
May-17	4.4	88.7	4.0	80.5	17	14
Jun-17	2.7	52.0	2.7	52.3	26	4
Jul-17	2.5	51.0	2.4	48.0	18	13
Aug-17	2.4	47.6	2.2	45.0	19	12
Sep-17	2.3	45.0	2.3	44.8	28	2
Oct-17	2.6	51.7	2.4	48.7	17	14
Nov-17	3.5	67.5	3.1	60.5	17	13
Dec-17	3.0	60.5	3.0	60.1	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	11.78	3/1/17 5:55	4.50	3/1/17 14:40
2	1.70	3/30/2017	3/31/2017	10.52	3/30/17 19:00	4.48	3/31/17 0:50
3	1.11	4/5/2017	4/7/2017	8.76	4/6/17 21:25	2.52	4/6/17 21:20
4	1.15	4/19/2017	4/20/2017	10.03	4/20/17 17:40	2.48	4/20/17 18:20
5	1.59	5/4/2017	5/5/2017	9.36	5/5/17 17:40	2.59	5/5/17 18:25
6	1.25	7/7/2017	7/7/2017	6.07	7/7/17 21:00	1.54	7/7/17 21:30
7	1.42	8/28/2017	8/29/2017	7.94	8/28/17 18:15	1.83	8/28/17 18:45
8	1.09	10/10/2017	10/11/2017	5.60	10/11/17 9:00	3.97	10/11/17 23:55
9	1.81	11/17/2017	11/18/2017	8.64	11/18/17 16:25	2.13	11/18/17 21:50

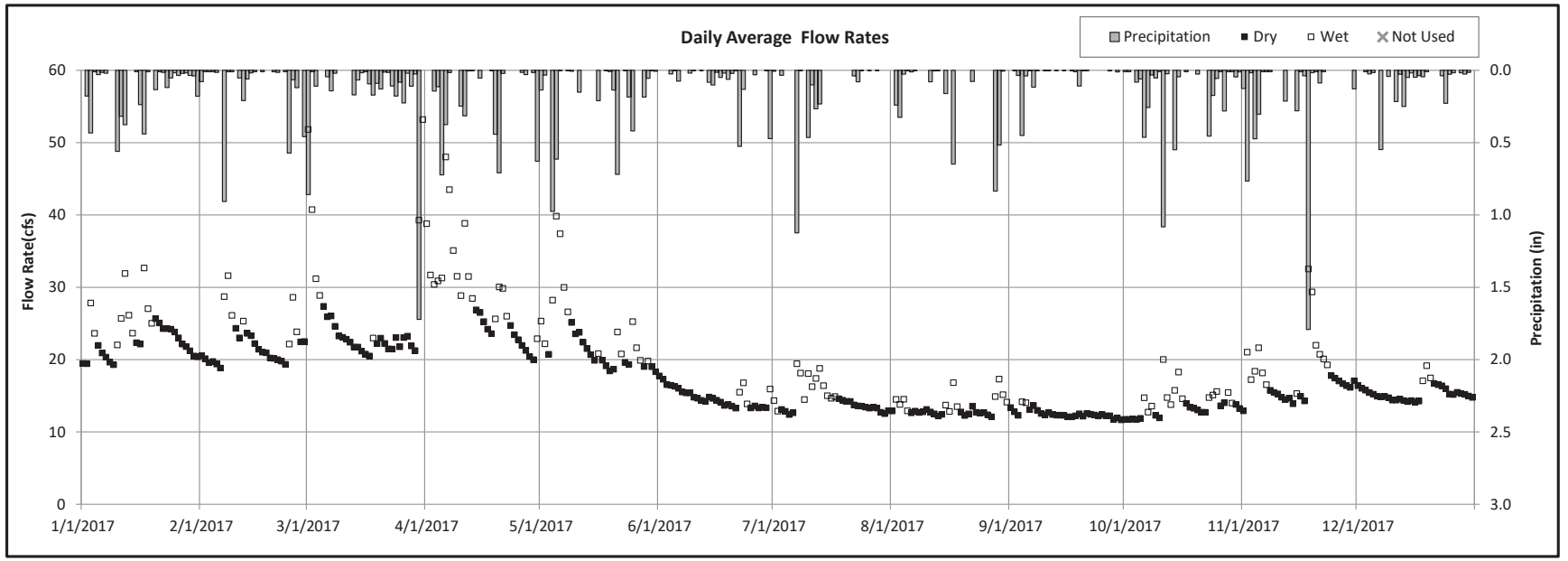
Rouge Valley Sewage Disposal System

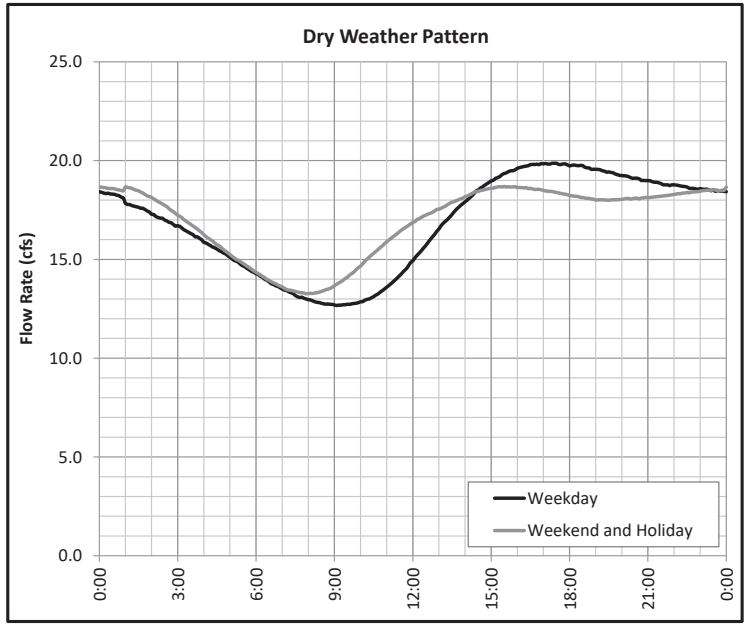
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	23.5	469.9	22.0	440.4	21	10
Feb-17	22.4	406.2	21.1	381.1	21	7
Mar-17	26.2	525.8	22.7	455.5	24	7
Apr-17	28.8	558.2	23.4	453.8	12	18
May-17	22.9	459.1	20.5	411.3	17	14
Jun-17	14.9	288.0	14.8	286.0	26	4
Jul-17	14.6	291.6	13.4	267.9	18	13
Aug-17	13.4	267.6	12.6	253.3	19	12
Sep-17	12.5	242.8	12.4	240.7	28	2
Oct-17	13.9	277.5	12.7	255.2	17	14
Nov-17	17.9	347.0	15.6	302.0	17	13
Dec-17	15.4	308.8	15.1	303.5	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	59.31	3/1/17 11:55	5.30	3/1/17 11:15
2	1.70	3/30/2017	3/31/2017	61.13	3/30/17 21:35	10.08	3/31/17 0:00
3	1.11	4/5/2017	4/7/2017	50.27	4/6/17 3:35	7.27	4/6/17 1:40
4	1.15	4/19/2017	4/20/2017	39.20	4/20/17 19:25	3.36	4/20/17 19:45
5	1.59	5/4/2017	5/5/2017	50.50	5/5/17 19:20	4.30	5/5/17 20:10
6	1.25	7/7/2017	7/7/2017	36.61	7/7/17 21:40	3.25	7/7/17 22:30
7	1.42	8/28/2017	8/29/2017	28.78	8/28/17 20:40	2.80	8/28/17 21:10
8	1.09	10/10/2017	10/11/2017	29.81	10/11/17 14:40	2.84	10/11/17 15:10
9	1.81	11/17/2017	11/18/2017	45.02	11/18/17 21:10	6.79	11/18/17 21:55

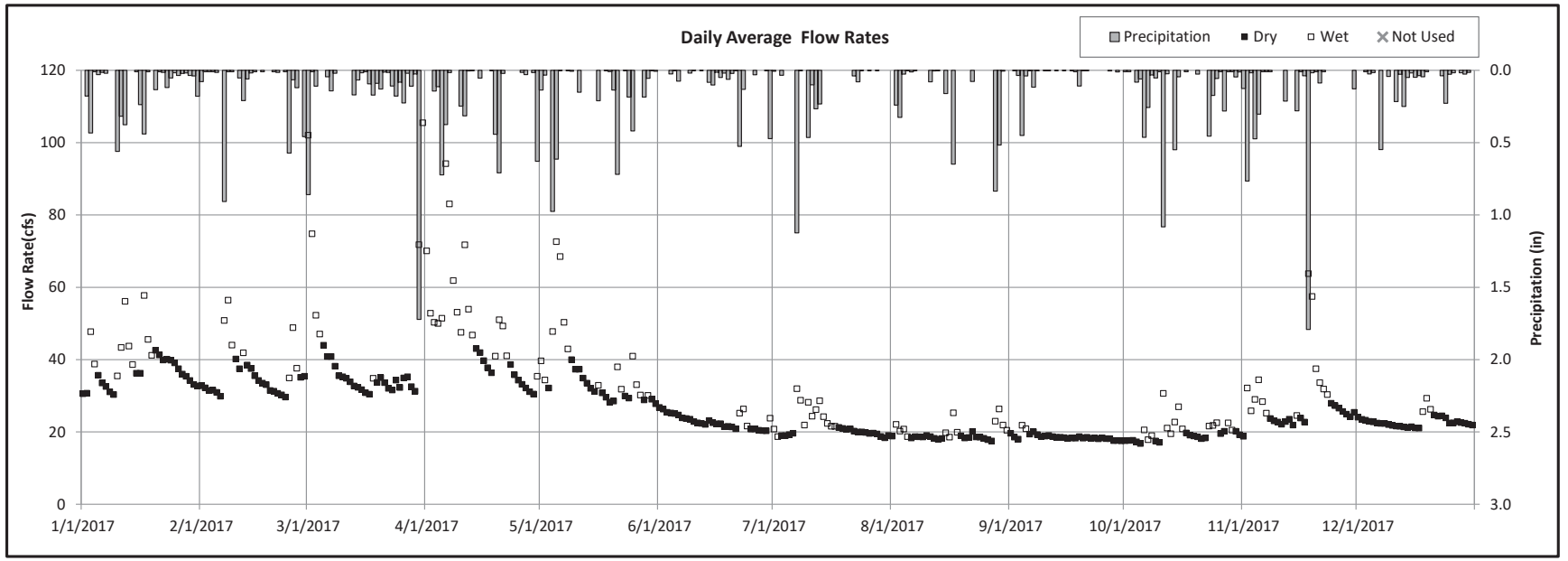
Rouge Valley Sewage Disposal System

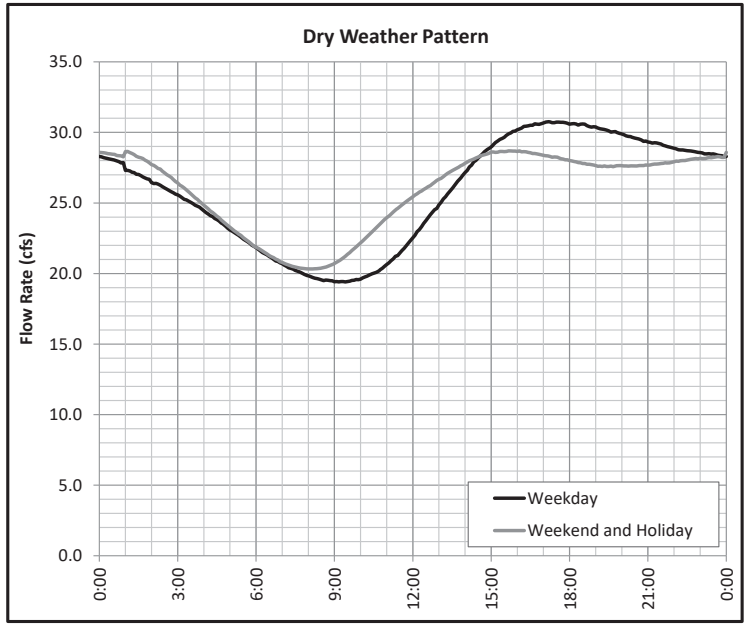
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	38.6	773.0	35.6	713.6	21	10
Feb-17	36.3	656.8	33.4	604.9	21	7
Mar-17	42.4	850.0	34.5	690.5	24	7
Apr-17	47.9	929.5	36.2	701.5	12	18
May-17	36.5	732.2	31.8	636.5	17	14
Jun-17	23.0	445.2	22.8	441.5	26	4
Jul-17	21.7	435.5	19.7	395.0	18	13
Aug-17	19.6	392.9	18.5	370.4	19	12
Sep-17	18.7	361.9	18.5	358.2	28	2
Oct-17	20.0	401.3	18.4	369.0	17	14
Nov-17	28.7	556.2	23.9	464.0	17	13
Dec-17	22.9	459.8	22.5	451.0	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	123.88	3/1/17 11:40	6.85	3/1/17 11:15
2	1.70	3/30/2017	3/31/2017	120.00	3/30/17 22:00	11.59	3/31/17 0:00
3	1.11	4/5/2017	4/7/2017	99.64	4/6/17 21:20	8.82	4/6/17 2:00
4	1.15	4/19/2017	4/20/2017	73.70	4/20/17 19:35	4.42	4/20/17 20:00
5	1.59	5/4/2017	5/5/2017	97.20	5/5/17 19:05	5.70	5/5/17 19:50
6	1.25	7/7/2017	7/7/2017	69.08	7/7/17 21:45	4.38	7/7/17 22:40
7	1.42	8/28/2017	8/29/2017	48.71	8/28/17 20:50	3.47	8/28/17 21:55
8	1.09	10/10/2017	10/11/2017	49.72	10/11/17 13:30	3.37	10/11/17 14:00
9	1.81	11/17/2017	11/18/2017	94.04	11/19/17 0:25	8.34	11/18/17 22:00

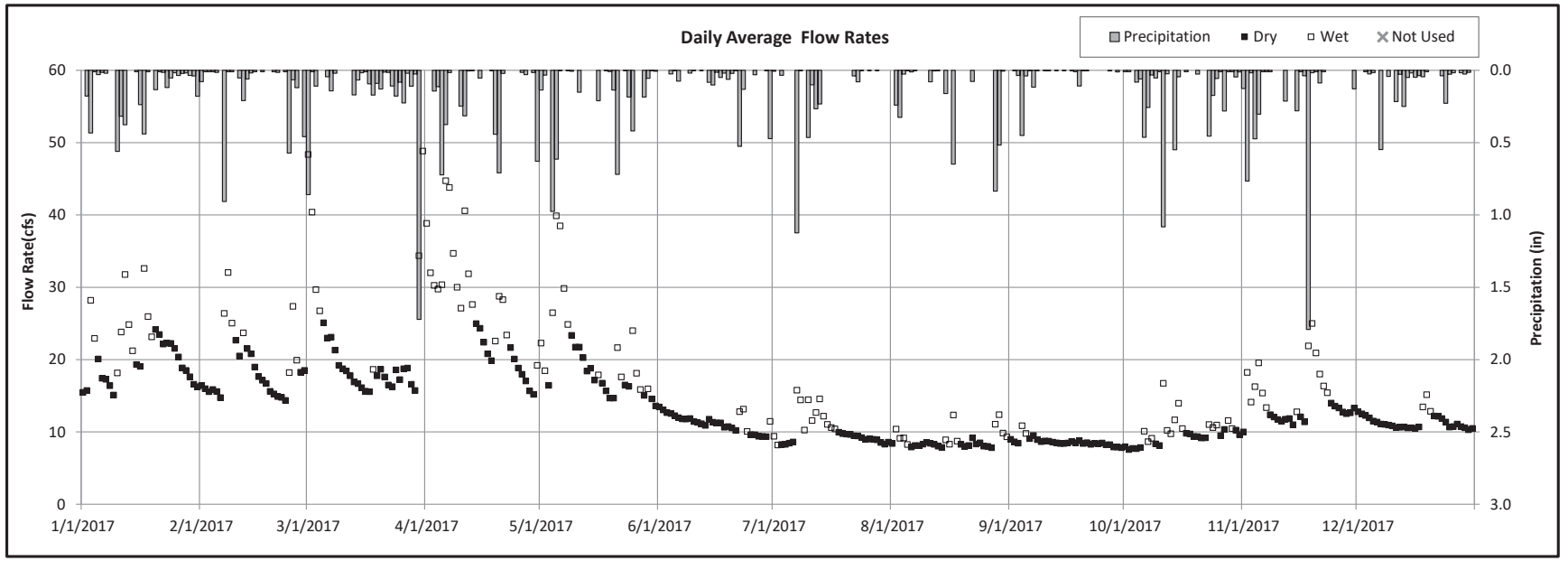
Rouge Valley Sewage Disposal System

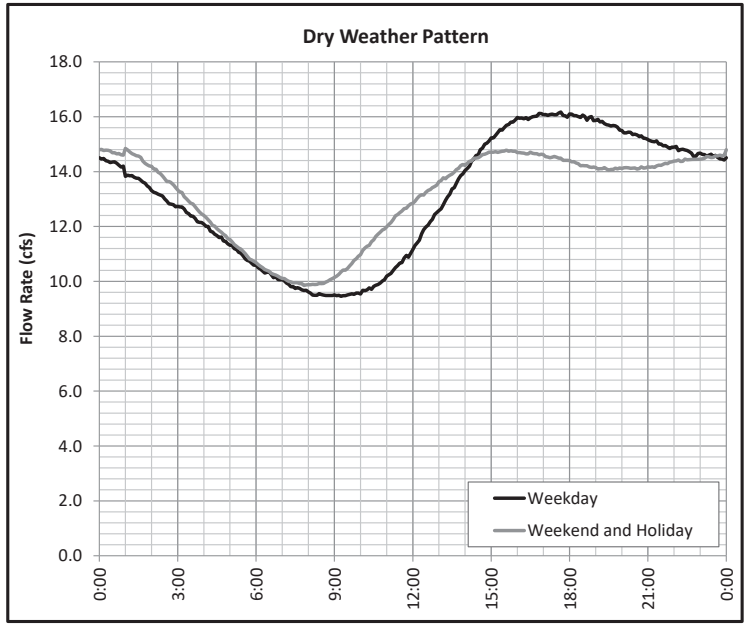
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	21.0	421.4	19.0	381.2	21	10
Feb-17	19.1	345.2	17.2	311.5	21	7
Mar-17	22.1	443.7	18.3	367.0	24	7
Apr-17	26.7	518.4	19.9	385.7	12	18
May-17	20.2	405.0	17.4	348.3	17	14
Jun-17	11.3	218.7	11.2	217.0	26	4
Jul-17	10.2	205.0	9.0	180.2	18	13
Aug-17	8.8	176.9	8.2	164.5	19	12
Sep-17	8.6	167.3	8.5	164.9	28	2
Oct-17	9.9	198.1	8.9	178.4	17	14
Nov-17	14.5	280.9	12.2	236.8	17	13
Dec-17	11.4	228.6	11.2	223.5	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	54.22	3/1/17 12:10	6.52	3/1/17 11:05
2	1.70	3/30/2017	3/31/2017	55.14	3/30/17 21:45	11.22	3/31/17 0:05
3	1.11	4/5/2017	4/7/2017	49.81	4/5/17 21:50	8.47	4/6/17 1:20
4	1.15	4/19/2017	4/20/2017	41.94	4/20/17 18:55	4.01	4/20/17 20:00
5	1.59	5/4/2017	5/5/2017	50.35	5/5/17 21:10	5.64	5/5/17 19:40
6	1.25	7/7/2017	7/7/2017	36.54	7/7/17 22:10	3.92	7/7/17 22:40
7	1.42	8/28/2017	8/29/2017	26.86	8/28/17 20:50	2.92	8/28/17 21:50
8	1.09	10/10/2017	10/11/2017	29.95	10/11/17 14:05	2.84	10/11/17 13:55
9	1.81	11/17/2017	11/18/2017	31.25	11/18/17 4:55	7.91	11/18/17 21:55

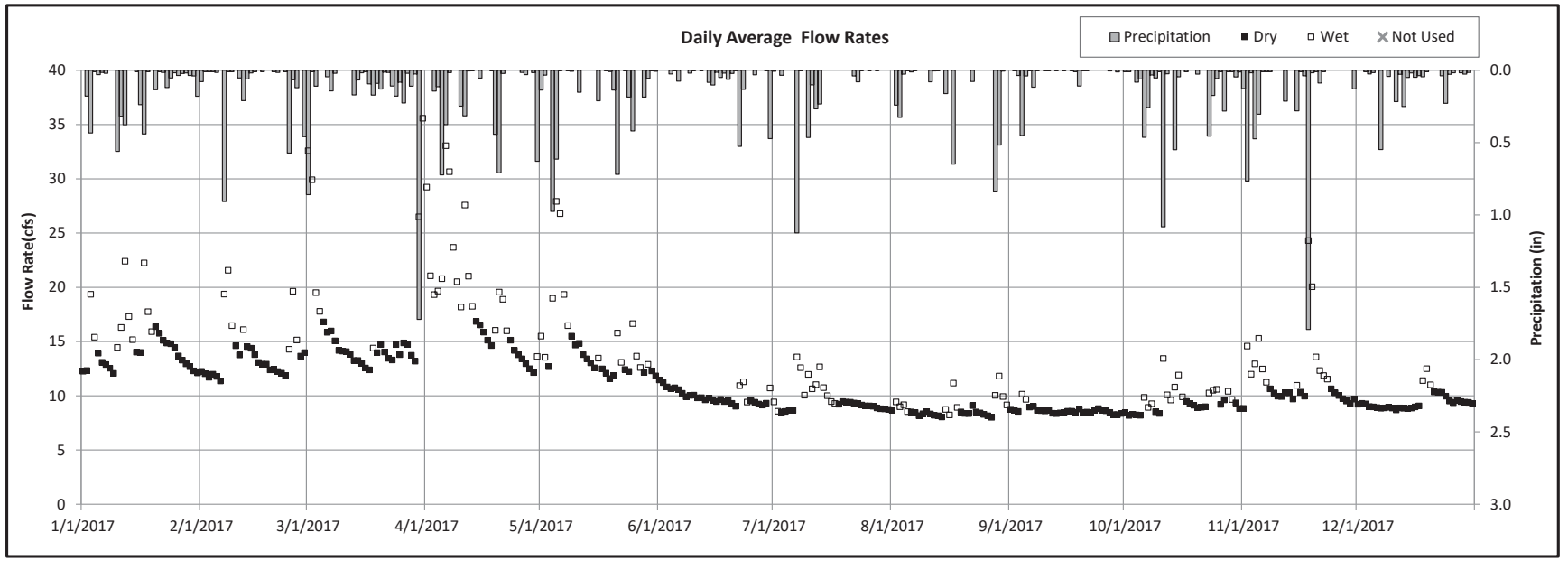
Rouge Valley Sewage Disposal System

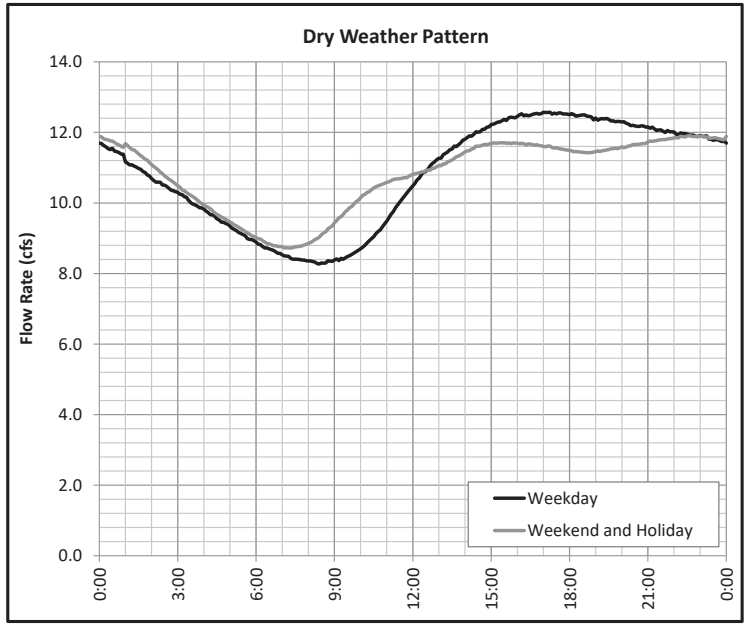
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	14.9	298.2	13.6	272.1	21	10
Feb-17	14.0	253.3	12.8	232.2	21	7
Mar-17	16.6	332.7	14.1	282.6	24	7
Apr-17	18.7	361.8	14.4	279.4	12	18
May-17	14.7	294.5	12.9	258.3	17	14
Jun-17	10.0	193.5	9.9	191.7	26	4
Jul-17	9.7	195.0	9.0	180.0	18	13
Aug-17	8.8	176.3	8.4	167.5	19	12
Sep-17	8.6	167.7	8.6	165.9	28	2
Oct-17	9.5	190.5	8.8	176.5	17	14
Nov-17	11.7	227.5	9.9	192.9	17	13
Dec-17	9.5	189.9	9.2	185.3	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	36.82	3/1/17 9:50	4.96	3/1/17 11:10
2	1.70	3/30/2017	3/31/2017	39.89	3/30/17 21:00	8.03	3/31/17 2:45
3	1.11	4/5/2017	4/7/2017	36.67	4/5/17 21:25	5.54	4/6/17 1:55
4	1.15	4/19/2017	4/20/2017	27.89	4/20/17 17:10	2.32	4/20/17 17:40
5	1.59	5/4/2017	5/5/2017	36.20	5/5/17 18:20	3.07	5/5/17 19:10
6	1.25	7/7/2017	7/7/2017	29.57	7/7/17 20:55	2.43	7/7/17 21:15
7	1.42	8/28/2017	8/29/2017	19.08	8/28/17 20:45	1.79	8/28/17 21:15
8	1.09	10/10/2017	10/11/2017	19.62	10/11/17 13:50	1.81	10/11/17 14:25
9	1.81	11/17/2017	11/18/2017	31.59	11/18/17 16:55	4.71	11/18/17 22:05

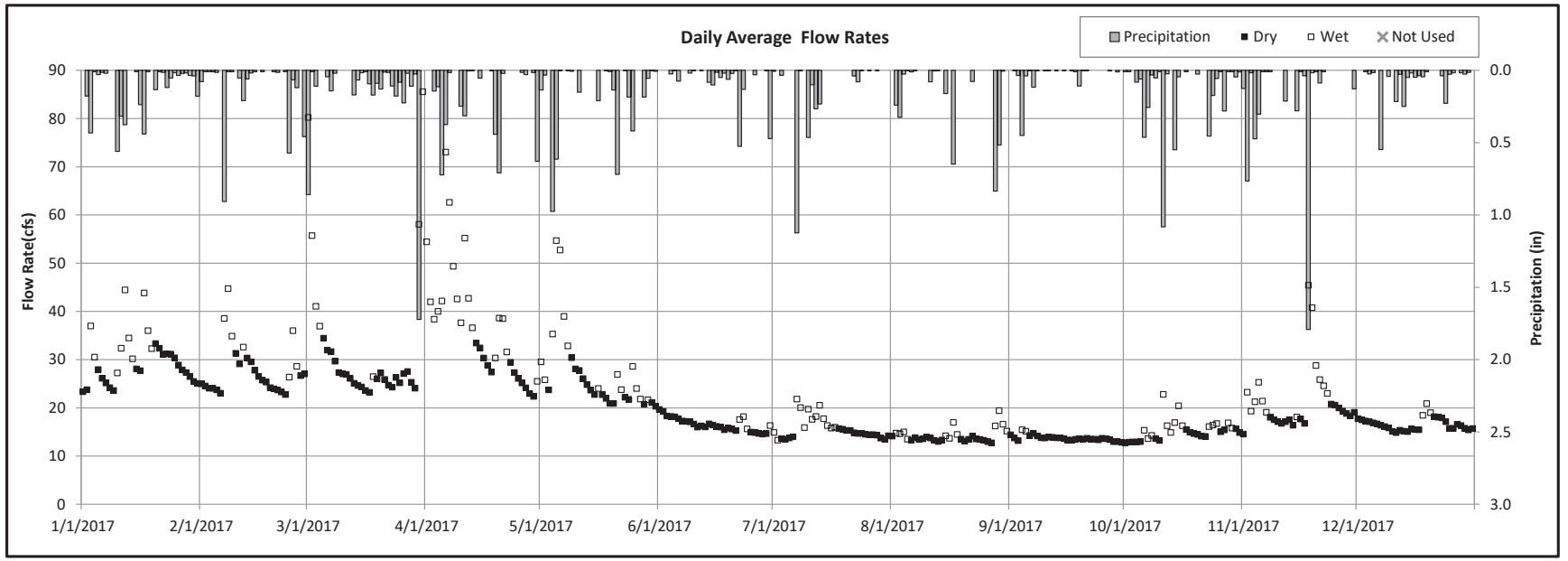
Rouge Valley Sewage Disposal System

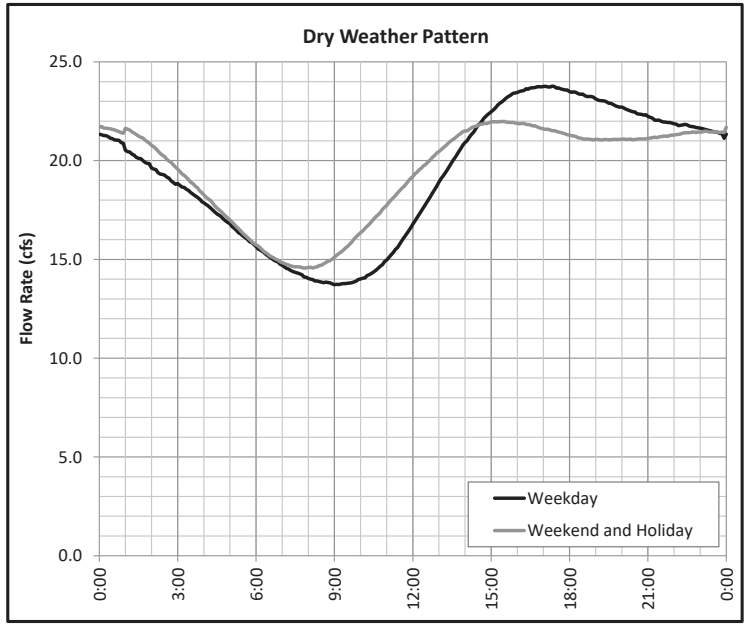
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	29.9	599.8	27.6	553.3	21	10
Feb-17	28.0	505.8	25.8	466.3	21	7
Mar-17	33.0	661.2	26.6	533.5	24	7
Apr-17	37.0	717.6	27.5	532.5	12	18
May-17	27.1	542.7	23.5	470.8	17	14
Jun-17	16.5	320.4	16.5	319.3	26	4
Jul-17	15.7	314.9	14.4	289.0	18	13
Aug-17	14.2	284.2	13.4	269.2	19	12
Sep-17	13.7	266.0	13.6	263.9	28	2
Oct-17	15.2	305.2	14.1	282.5	17	14
Nov-17	21.4	414.8	18.0	349.0	17	13
Dec-17	16.6	332.0	16.3	325.9	28	3

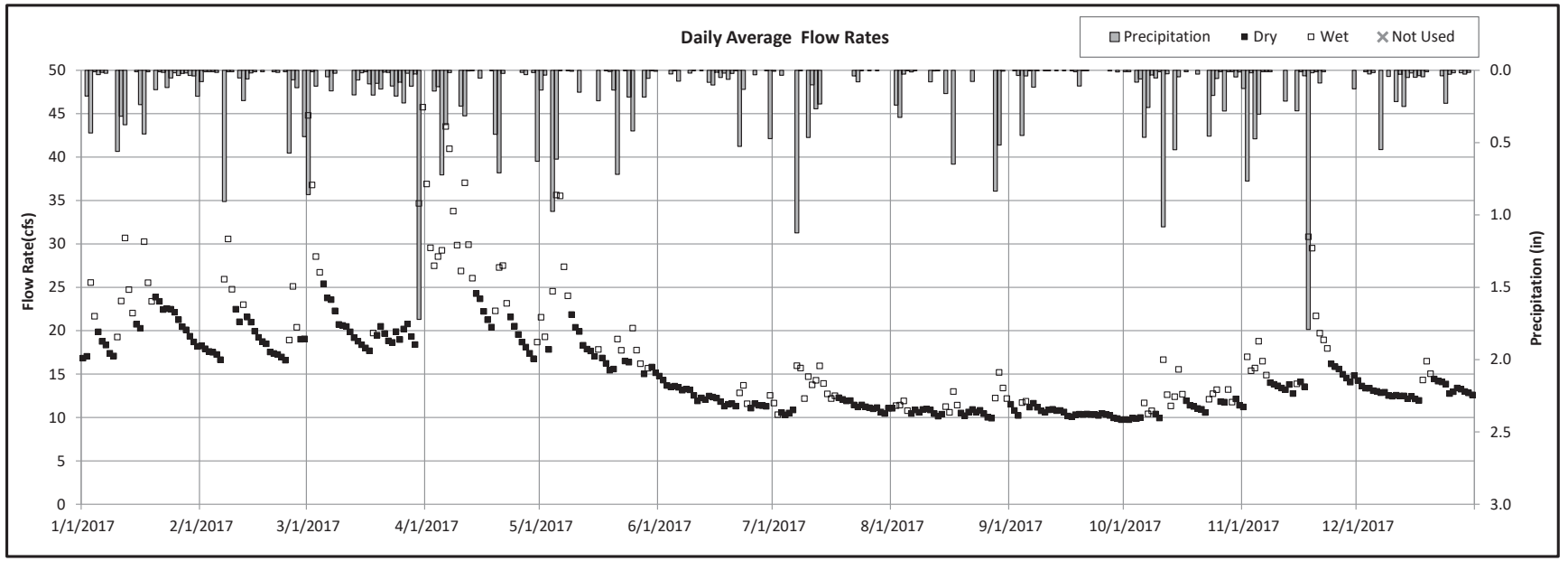
Statistics for Significant Wet Weather Events

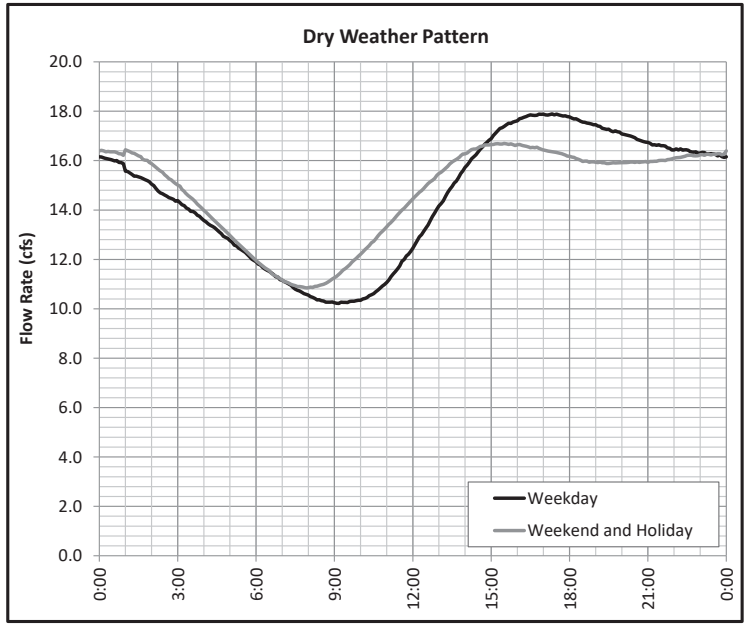
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	97.43	3/1/17 6:50	7.28	3/1/17 12:00
2	1.70	3/30/2017	3/31/2017	100.39	3/30/17 21:35	9.38	3/31/17 13:05
3	1.11	4/5/2017	4/7/2017	81.71	4/6/17 2:25	7.63	4/6/17 2:00
4	1.15	4/19/2017	4/20/2017	53.84	4/20/17 22:10	3.87	4/20/17 19:50
5	1.59	5/4/2017	5/5/2017	72.28	5/5/17 18:30	4.93	5/5/17 19:25
6	1.25	7/7/2017	7/7/2017	46.12	7/7/17 21:20	3.75	7/7/17 21:50
7	1.42	8/28/2017	8/29/2017	32.57	8/28/17 20:50	3.00	8/28/17 21:00
8	1.09	10/10/2017	10/11/2017	36.50	10/11/17 14:05	3.14	10/11/17 14:35
9	1.81	11/17/2017	11/18/2017	67.17	11/19/17 0:10	6.71	11/19/17 0:50

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	21.5	431.3	20.0	401.7	21	10
Feb-17	20.0	361.8	18.6	337.1	21	7
Mar-17	23.2	465.4	20.1	403.4	24	7
Apr-17	26.1	505.8	20.4	394.7	12	18
May-17	19.5	391.6	17.3	346.1	17	14
Jun-17	12.4	241.3	12.4	240.7	26	4
Jul-17	12.1	243.4	11.2	223.7	18	13
Aug-17	11.1	223.1	10.6	211.5	19	12
Sep-17	10.6	205.8	10.5	204.2	28	2
Oct-17	11.6	233.1	10.8	216.5	17	14
Nov-17	16.3	316.6	14.1	272.9	17	13
Dec-17	13.2	265.3	13.0	261.0	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	50.89	3/1/17 5:25	6.07	3/1/17 11:00
2	1.70	3/30/2017	3/31/2017	52.55	3/30/17 21:00	10.35	3/31/17 0:25
3	1.11	4/5/2017	4/7/2017	46.61	4/5/17 21:45	6.68	4/6/17 2:00
4	1.15	4/19/2017	4/20/2017	36.16	4/20/17 22:10	3.38	4/20/17 19:15
5	1.59	5/4/2017	5/5/2017	43.98	5/5/17 19:25	4.22	5/5/17 19:25
6	1.25	7/7/2017	7/7/2017	31.46	7/7/17 21:40	3.22	7/7/17 22:00
7	1.42	8/28/2017	8/29/2017	23.36	8/28/17 21:10	2.71	8/28/17 21:05
8	1.09	10/10/2017	10/11/2017	25.86	10/11/17 13:45	2.80	10/11/17 14:45
9	1.81	11/17/2017	11/18/2017	41.64	11/18/17 18:45	5.88	11/18/17 22:00

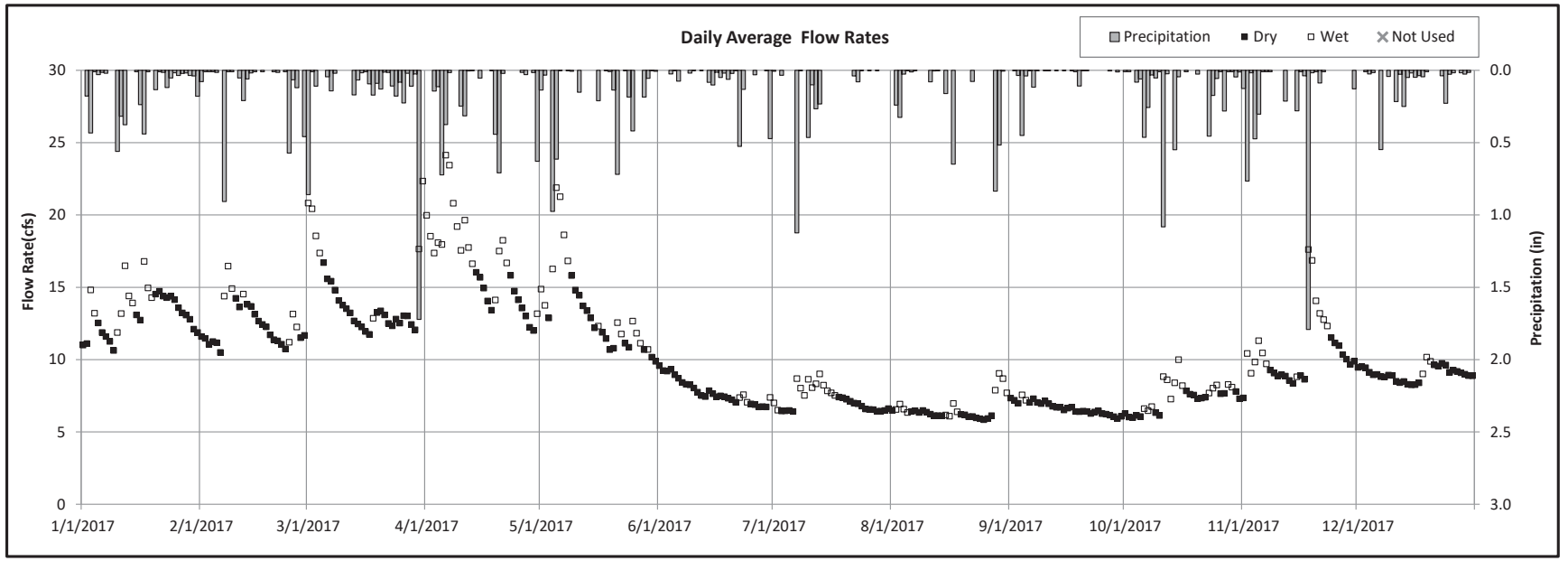
Rouge Valley Sewage Disposal System

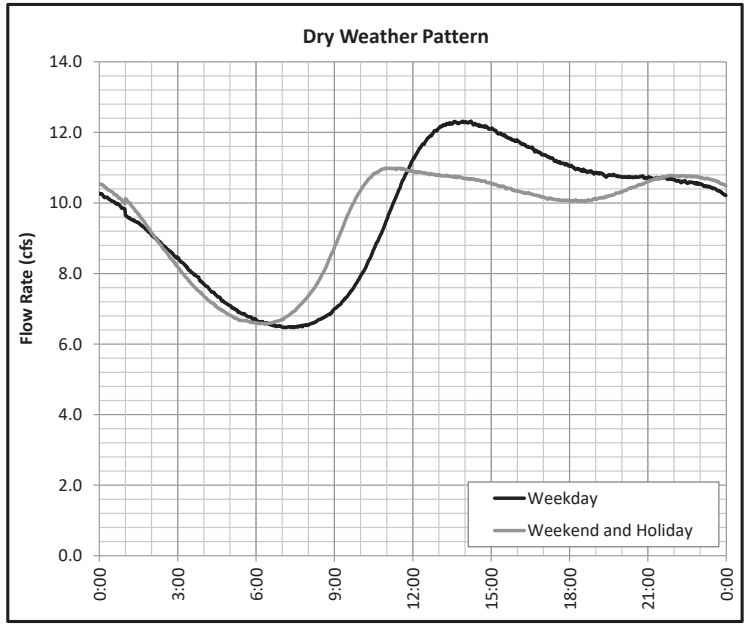
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	13.3	266.7	12.8	256.4	21	10
Feb-17	12.5	225.5	12.0	217.3	21	7
Mar-17	14.5	289.8	13.3	265.8	24	7
Apr-17	16.7	323.3	14.1	274.0	12	18
May-17	13.4	267.5	12.2	244.6	17	14
Jun-17	7.8	150.8	7.8	152.2	26	4
Jul-17	7.2	144.9	6.7	134.9	18	13
Aug-17	6.5	130.9	6.2	123.7	19	12
Sep-17	6.7	129.2	6.6	128.3	28	2
Oct-17	7.4	148.4	7.0	139.4	17	14
Nov-17	10.6	204.6	9.4	182.8	17	13
Dec-17	9.0	181.2	9.0	179.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	25.36	3/1/17 2:20	10.31	3/1/17 10:10
2	1.70	3/30/2017	3/31/2017	24.08	3/31/17 18:30	10.42	3/31/17 0:15
3	1.11	4/5/2017	4/7/2017	25.28	4/6/17 1:35	5.60	4/6/17 20:45
4	1.15	4/19/2017	4/20/2017	24.36	4/20/17 17:40	4.75	4/20/17 19:05
5	1.59	5/4/2017	5/5/2017	24.71	5/5/17 20:55	5.53	5/5/17 22:25
6	1.25	7/7/2017	7/7/2017	14.37	7/7/17 21:15	3.18	7/7/17 21:55
7	1.42	8/28/2017	8/29/2017	16.91	8/28/17 18:45	3.45	8/28/17 19:35
8	1.09	10/10/2017	10/11/2017	15.19	10/11/17 12:25	3.38	10/11/17 13:35
9	1.81	11/17/2017	11/18/2017	23.66	11/18/17 16:05	4.93	11/18/17 22:05

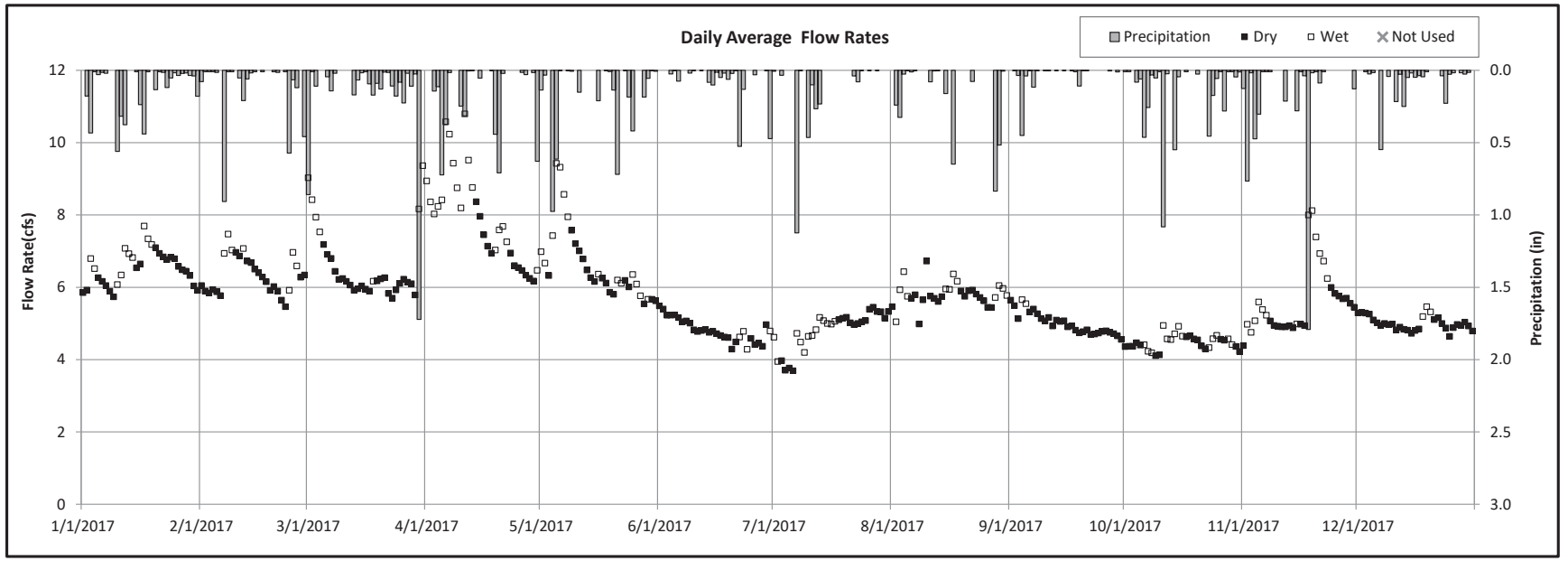
Rouge Valley Sewage Disposal System

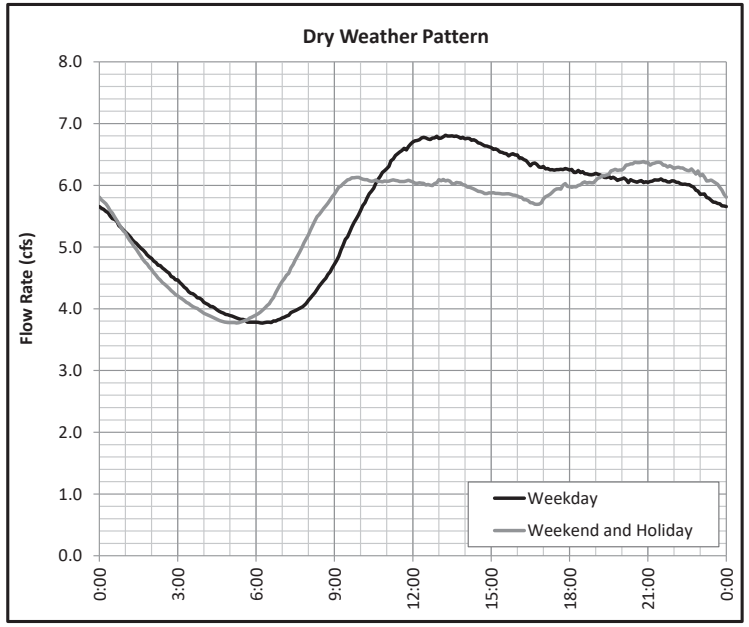
Annual Meter Report

Meter: WE-14
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	6.5	131.0	6.4	127.9	21	10
Feb-17	6.3	114.7	6.2	111.5	21	7
Mar-17	6.6	132.4	6.2	123.7	24	7
Apr-17	7.9	153.4	6.9	134.3	12	18
May-17	6.6	132.9	6.3	125.9	17	14
Jun-17	4.8	93.2	4.8	93.8	26	4
Jul-17	4.8	96.3	4.9	97.5	18	13
Aug-17	5.8	116.1	5.7	114.5	19	12
Sep-17	5.0	97.1	5.0	96.3	28	2
Oct-17	4.5	89.6	4.4	88.3	17	14
Nov-17	5.6	108.7	5.2	101.3	17	13
Dec-17	5.0	100.3	5.0	99.6	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	9.96	3/1/17 5:55	4.04	3/1/17 10:40
2	1.70	3/30/2017	3/31/2017	11.65	3/30/17 17:15	7.77	3/30/17 23:55
3	1.11	4/5/2017	4/7/2017	11.35	4/6/17 19:30	2.02	4/6/17 20:00
4	1.15	4/19/2017	4/20/2017	8.99	4/20/17 16:25	1.63	4/20/17 17:05
5	1.59	5/4/2017	5/5/2017	11.09	5/5/17 16:45	1.91	5/5/17 17:30
6	1.25	7/7/2017	7/7/2017	9.15	7/7/17 20:10	1.89	7/7/17 20:40
7	1.42	8/28/2017	8/29/2017	9.57	8/29/17 13:45	1.94	8/29/17 14:10
8	1.09	10/10/2017	10/11/2017	6.51	10/11/17 10:40	1.47	10/11/17 11:25
9	1.81	11/17/2017	11/18/2017	10.73	11/18/17 14:50	1.98	11/18/17 15:30

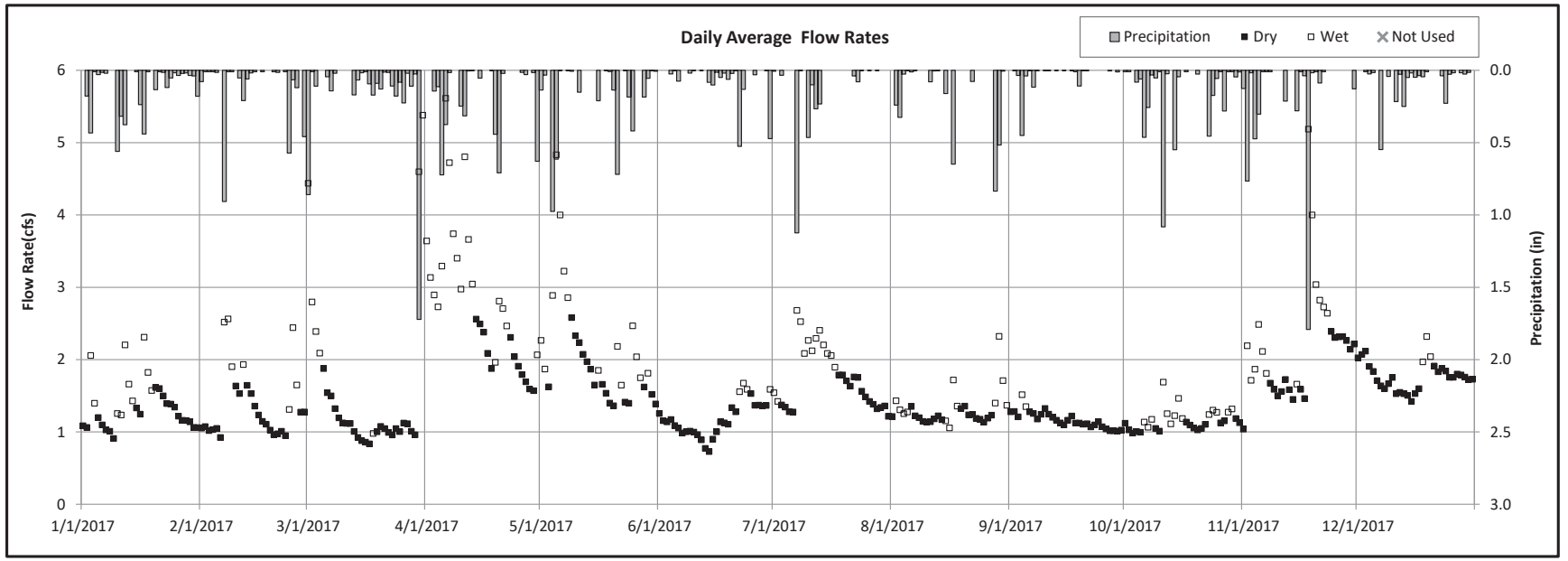
Rouge Valley Sewage Disposal System

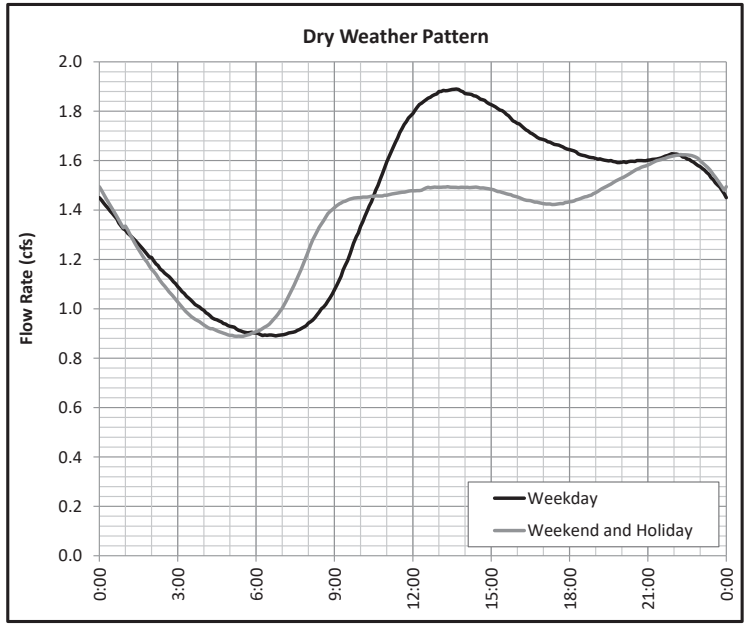
Annual Meter Report

Meter: WE-28
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	1.4	27.5	1.2	24.4	21	10
Feb-17	1.4	25.3	1.2	21.4	21	7
Mar-17	1.6	31.8	1.1	22.2	24	7
Apr-17	2.8	54.2	2.0	39.2	12	18
May-17	2.1	42.2	1.7	34.9	17	14
Jun-17	1.2	22.9	1.1	21.7	26	4
Jul-17	1.8	35.1	1.5	29.8	18	13
Aug-17	1.3	26.1	1.2	24.3	19	12
Sep-17	1.2	22.6	1.1	22.3	28	2
Oct-17	1.2	23.2	1.1	21.5	17	14
Nov-17	2.2	42.2	1.8	35.5	17	13
Dec-17	1.8	35.6	1.7	34.9	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	6.88	3/1/17 5:50	1.22	3/1/17 6:00
2	1.70	3/30/2017	3/31/2017	8.18	3/30/17 21:15	1.36	3/30/17 21:10
3	1.11	4/5/2017	4/7/2017	7.15	4/5/17 20:50	1.22	4/5/17 21:10
4	1.15	4/19/2017	4/20/2017	5.91	4/20/17 16:25	1.13	4/20/17 16:40
5	1.59	5/4/2017	5/5/2017	7.53	5/5/17 17:35	1.27	5/5/17 17:55
6	1.25	7/7/2017	7/7/2017	7.29	7/7/17 20:15	1.32	7/7/17 20:40
7	1.42	8/28/2017	8/29/2017	6.50	8/29/17 13:35	1.25	8/29/17 14:00
8	1.09	10/10/2017	10/11/2017	2.43	10/11/17 12:20	0.59	10/11/17 12:50
9	1.81	11/17/2017	11/18/2017	7.87	11/18/17 15:15	1.34	11/18/17 15:15

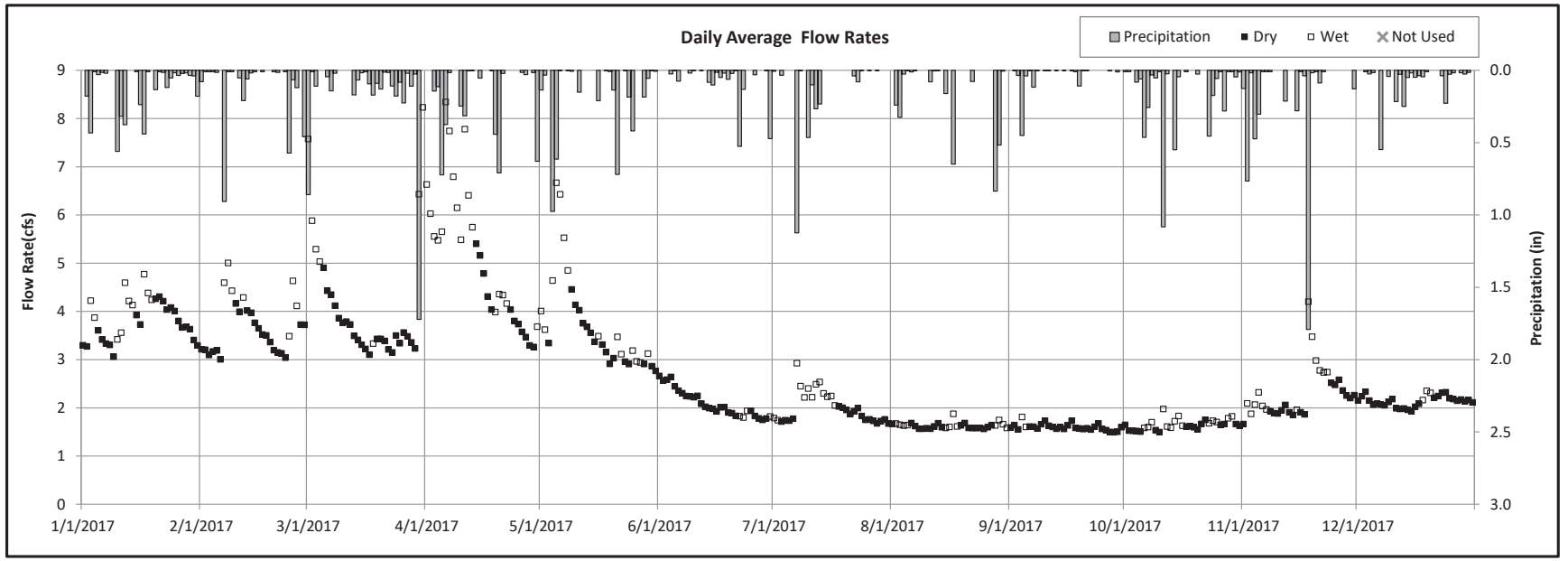
Rouge Valley Sewage Disposal System

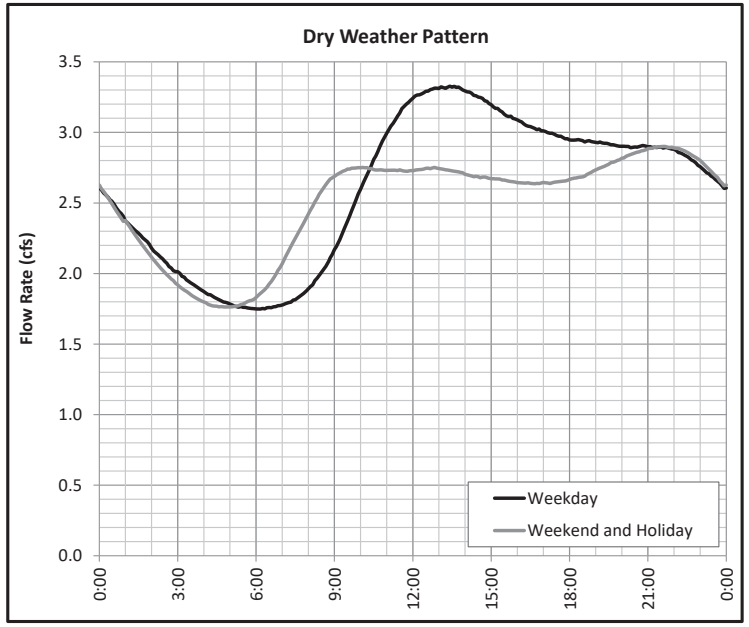
Annual Meter Report

Meter: WE-25
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	3.8	76.7	3.7	73.7	21	10
Feb-17	3.7	66.7	3.5	62.7	21	7
Mar-17	4.1	82.9	3.6	72.2	24	7
Apr-17	5.1	99.0	4.1	78.9	12	18
May-17	3.7	74.4	3.4	67.3	17	14
Jun-17	2.1	40.4	2.1	41.2	26	4
Jul-17	2.0	40.2	1.8	36.3	18	13
Aug-17	1.6	32.6	1.6	32.2	19	12
Sep-17	1.6	31.0	1.6	30.9	28	2
Oct-17	1.6	33.0	1.6	32.0	17	14
Nov-17	2.3	44.4	2.1	40.5	17	13
Dec-17	2.1	42.9	2.1	42.6	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	9.13	3/1/17 7:45	1.65	3/1/17 7:15
2	1.70	3/30/2017	3/31/2017	10.01	3/30/17 20:25	2.17	3/30/17 21:25
3	1.11	4/5/2017	4/7/2017	8.87	4/6/17 20:25	1.55	4/6/17 20:15
4	1.15	4/19/2017	4/20/2017	6.28	4/20/17 16:50	1.23	4/20/17 17:10
5	1.59	5/4/2017	5/5/2017	8.59	5/5/17 17:35	1.49	5/5/17 17:40
6	1.25	7/7/2017	7/7/2017	5.82	7/7/17 20:55	1.16	7/7/17 21:25
7	1.42	8/28/2017	8/29/2017	2.51	8/28/17 19:30	0.75	8/29/17 14:15
8	1.09	10/10/2017	10/11/2017	3.13	10/11/17 10:50	0.83	10/11/17 11:15
9	1.81	11/17/2017	11/18/2017	6.56	11/18/17 15:20	1.23	11/18/17 16:10

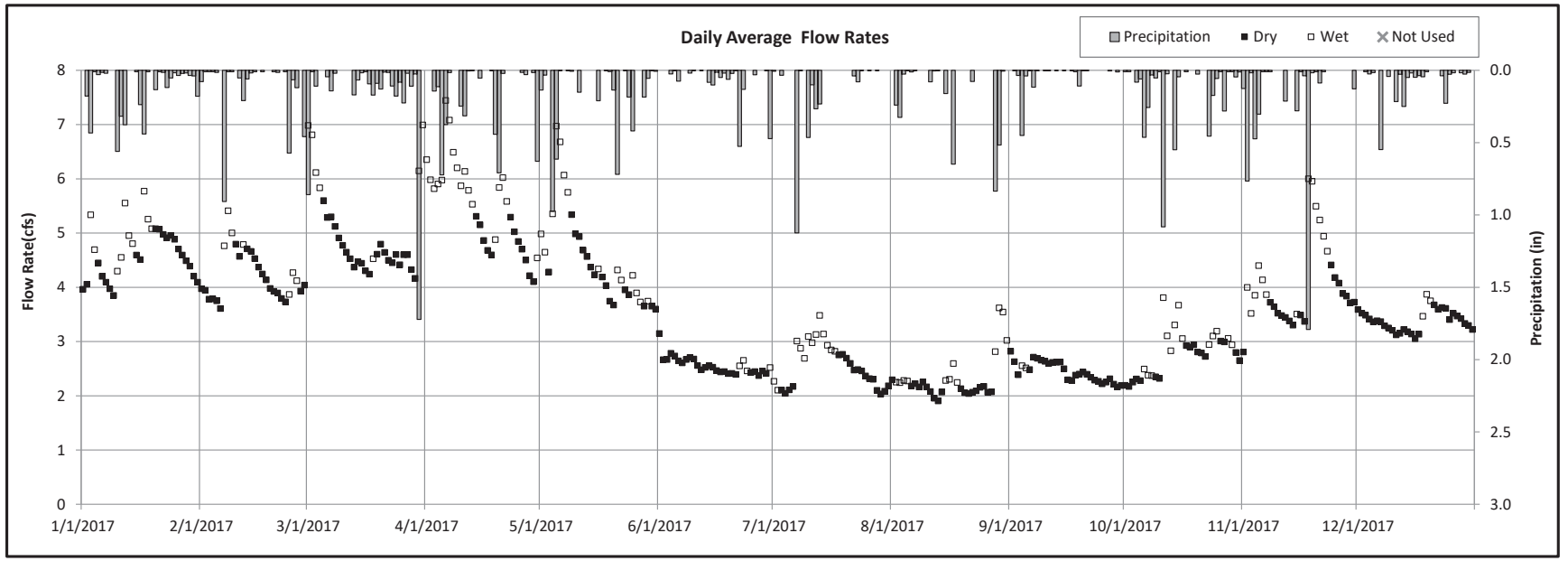
Rouge Valley Sewage Disposal System

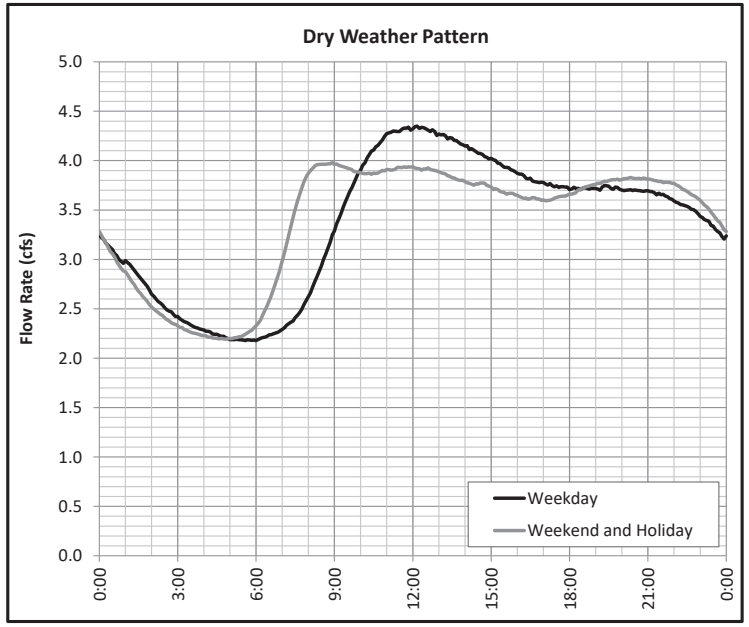
Annual Meter Report

Meter: LV-4
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.7	93.2	4.5	89.7	21	10
Feb-17	4.2	76.5	4.1	74.2	21	7
Mar-17	5.0	100.2	4.7	93.2	24	7
Apr-17	5.5	106.4	4.8	92.5	12	18
May-17	4.5	90.8	4.2	84.5	17	14
Jun-17	2.6	49.6	2.6	49.6	26	4
Jul-17	2.6	51.3	2.3	46.7	18	13
Aug-17	2.3	46.2	2.1	42.3	19	12
Sep-17	2.4	47.4	2.4	47.3	28	2
Oct-17	2.8	56.0	2.6	52.3	17	14
Nov-17	4.1	78.5	3.6	70.7	17	13
Dec-17	3.4	67.9	3.4	67.3	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	8.44	3/1/17 6:10	2.35	3/1/17 5:45
2	1.70	3/30/2017	3/31/2017	8.09	3/30/17 19:55	2.34	3/30/17 20:40
3	1.11	4/5/2017	4/7/2017	7.67	4/6/17 18:05	2.01	4/6/17 20:15
4	1.15	4/19/2017	4/20/2017	7.81	4/20/17 16:05	2.11	4/20/17 16:35
5	1.59	5/4/2017	5/5/2017	7.83	5/5/17 14:30	2.08	5/5/17 14:40
6	1.25	7/7/2017	7/7/2017	5.26	7/7/17 19:20	1.73	7/7/17 19:40
7	1.42	8/28/2017	8/29/2017	6.65	8/29/17 13:35	2.18	8/29/17 14:20
8	1.09	10/10/2017	10/11/2017	5.78	10/11/17 10:05	1.69	10/11/17 10:35
9	1.81	11/17/2017	11/18/2017	7.91	11/18/17 14:45	2.13	11/18/17 15:05

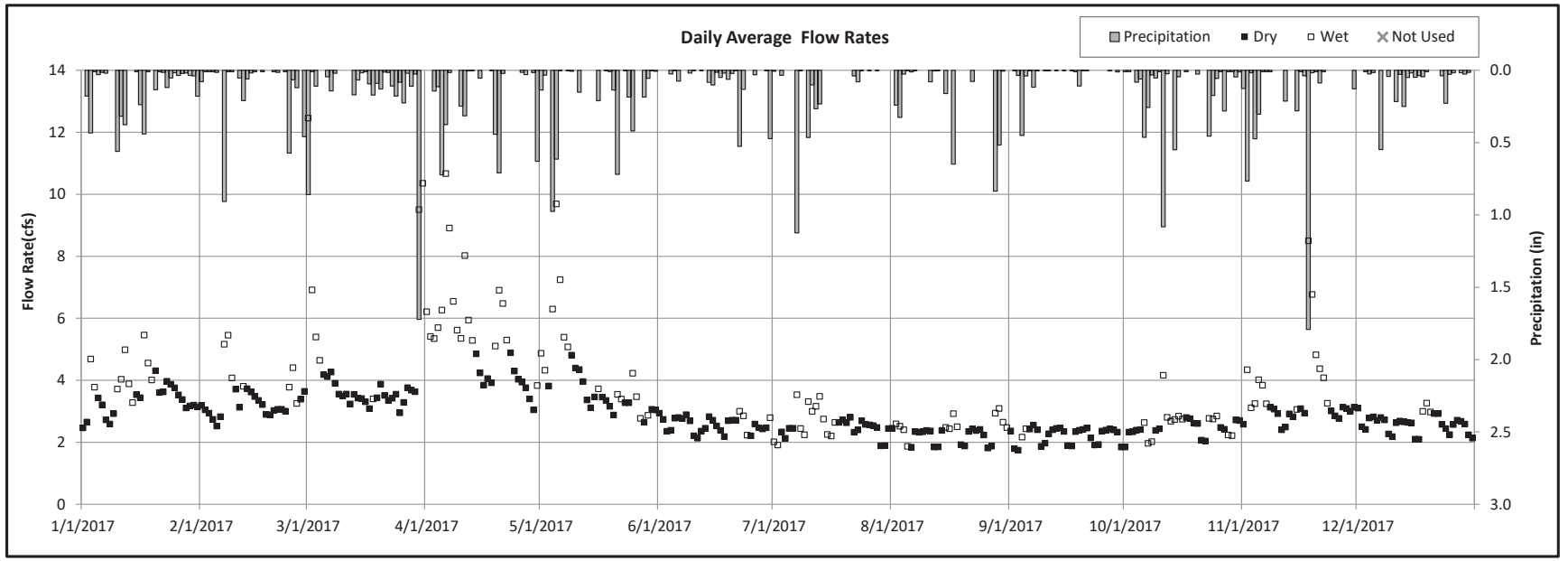
Rouge Valley Sewage Disposal System

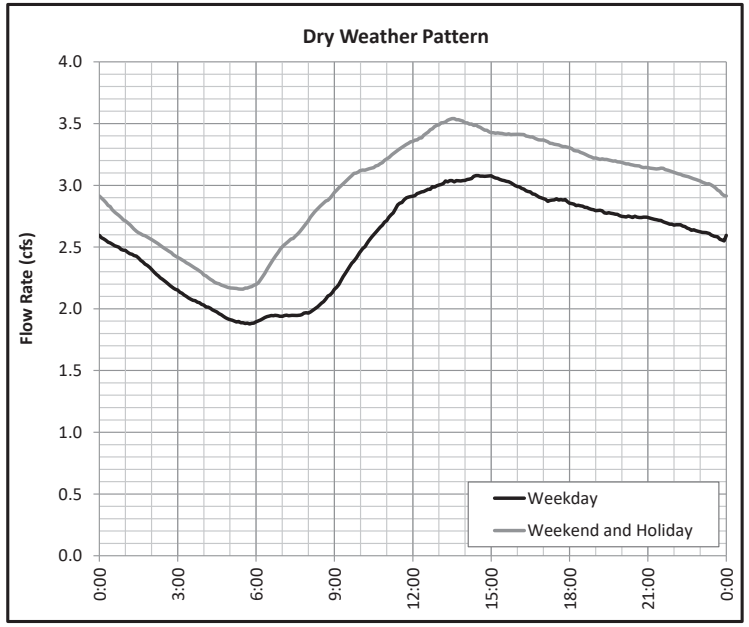
Annual Meter Report

Meter: LV-11
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	3.6	72.3	3.3	66.3	21	10
Feb-17	3.4	62.2	3.2	57.2	21	7
Mar-17	4.5	89.3	3.6	71.3	24	7
Apr-17	5.4	104.1	4.0	77.9	12	18
May-17	4.1	81.6	3.5	70.0	17	14
Jun-17	2.6	49.9	2.6	49.5	26	4
Jul-17	2.5	50.9	2.4	48.8	18	13
Aug-17	2.3	46.6	2.2	43.6	19	12
Sep-17	2.2	43.1	2.2	43.0	28	2
Oct-17	2.5	50.8	2.4	48.6	17	14
Nov-17	3.5	68.4	2.9	56.2	17	13
Dec-17	2.6	52.3	2.6	51.3	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	16.49	3/1/17 9:10	5.17	3/1/17 10:00
2	1.70	3/30/2017	3/31/2017	16.64	3/30/17 22:25	5.45	3/31/17 0:20
3	1.11	4/5/2017	4/7/2017	12.40	4/6/17 0:05	1.27	4/6/17 0:25
4	1.15	4/19/2017	4/20/2017	10.71	4/20/17 18:35	1.18	4/20/17 19:20
5	1.59	5/4/2017	5/5/2017	13.86	5/5/17 17:20	1.34	5/5/17 17:40
6	1.25	7/7/2017	7/7/2017	5.70	7/7/17 20:10	0.87	7/7/17 20:40
7	1.42	8/28/2017	8/29/2017	6.27	8/29/17 16:55	0.91	8/29/17 17:35
8	1.09	10/10/2017	10/11/2017	7.72	10/11/17 13:30	1.01	10/11/17 13:55
9	1.81	11/17/2017	11/18/2017	13.06	11/18/17 18:50	1.30	11/18/17 18:20

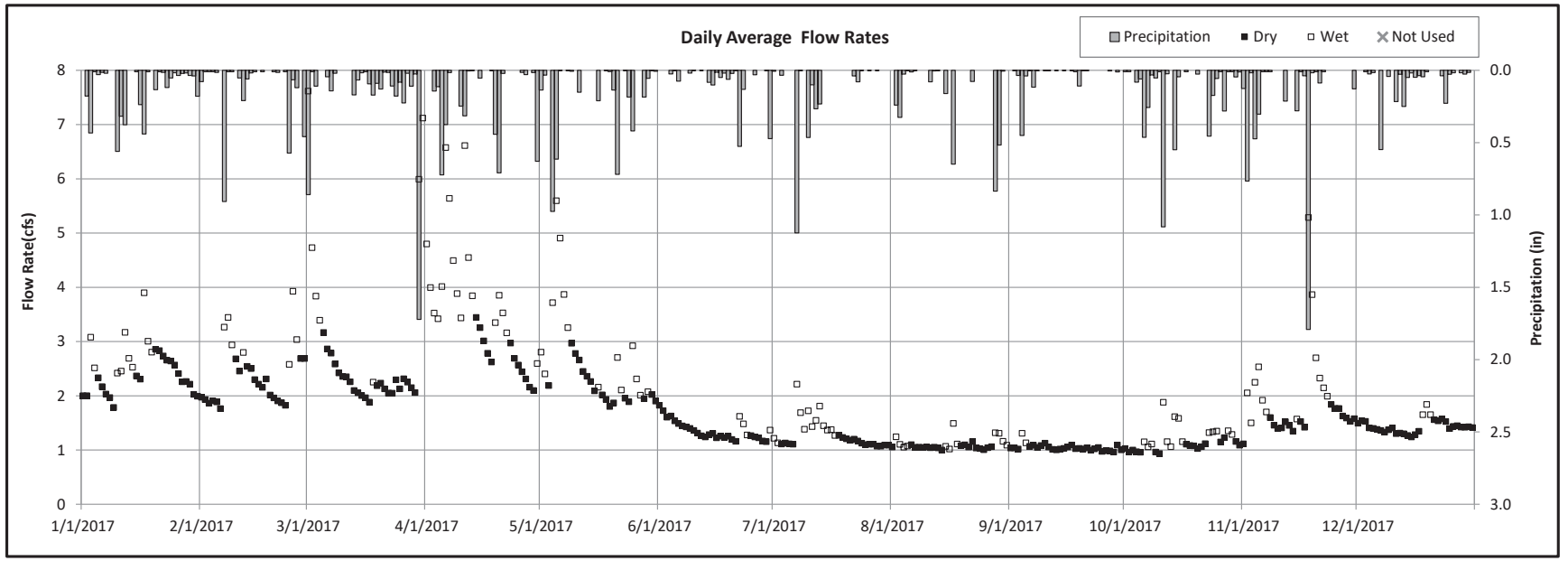
Rouge Valley Sewage Disposal System

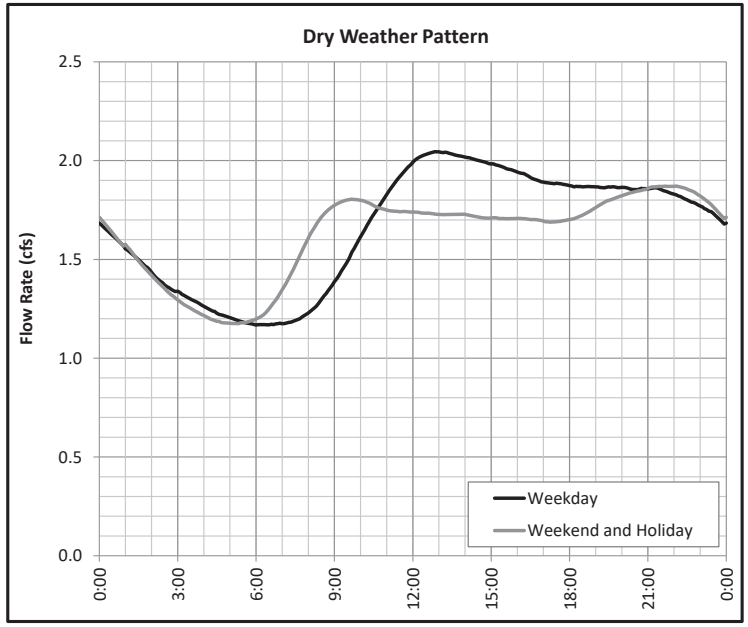
Annual Meter Report

Meter: LV-14
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	2.5	49.7	2.3	46.1	21	10
Feb-17	2.4	43.5	2.2	39.1	21	7
Mar-17	2.9	57.9	2.3	45.6	24	7
Apr-17	3.6	69.5	2.7	52.2	12	18
May-17	2.6	51.6	2.2	43.7	17	14
Jun-17	1.4	26.4	1.4	26.2	26	4
Jul-17	1.3	25.9	1.1	22.8	18	13
Aug-17	1.1	22.0	1.1	21.1	19	12
Sep-17	1.0	20.3	1.0	20.0	28	2
Oct-17	1.2	23.4	1.1	21.1	17	14
Nov-17	1.9	37.3	1.5	29.5	17	13
Dec-17	1.4	28.8	1.4	28.2	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	11.22	3/1/17 5:20	1.33	3/1/17 5:55
2	1.70	3/30/2017	3/31/2017	11.80	3/30/17 20:30	4.33	3/31/17 1:20
3	1.11	4/5/2017	4/7/2017	7.99	4/5/17 20:55	1.08	4/5/17 21:30
4	1.15	4/19/2017	4/20/2017	7.76	4/19/17 17:35	1.10	4/19/17 17:50
5	1.59	5/4/2017	5/5/2017	7.75	5/5/17 17:35	1.06	5/5/17 18:00
6	1.25	7/7/2017	7/7/2017	8.83	7/7/17 19:50	1.19	7/7/17 20:15
7	1.42	8/28/2017	8/29/2017	3.29	8/28/17 18:50	0.70	8/28/17 19:05
8	1.09	10/10/2017	10/11/2017	3.94	10/11/17 13:00	0.77	10/11/17 13:25
9	1.81	11/17/2017	11/18/2017	8.61	11/18/17 15:05	1.15	11/18/17 15:35

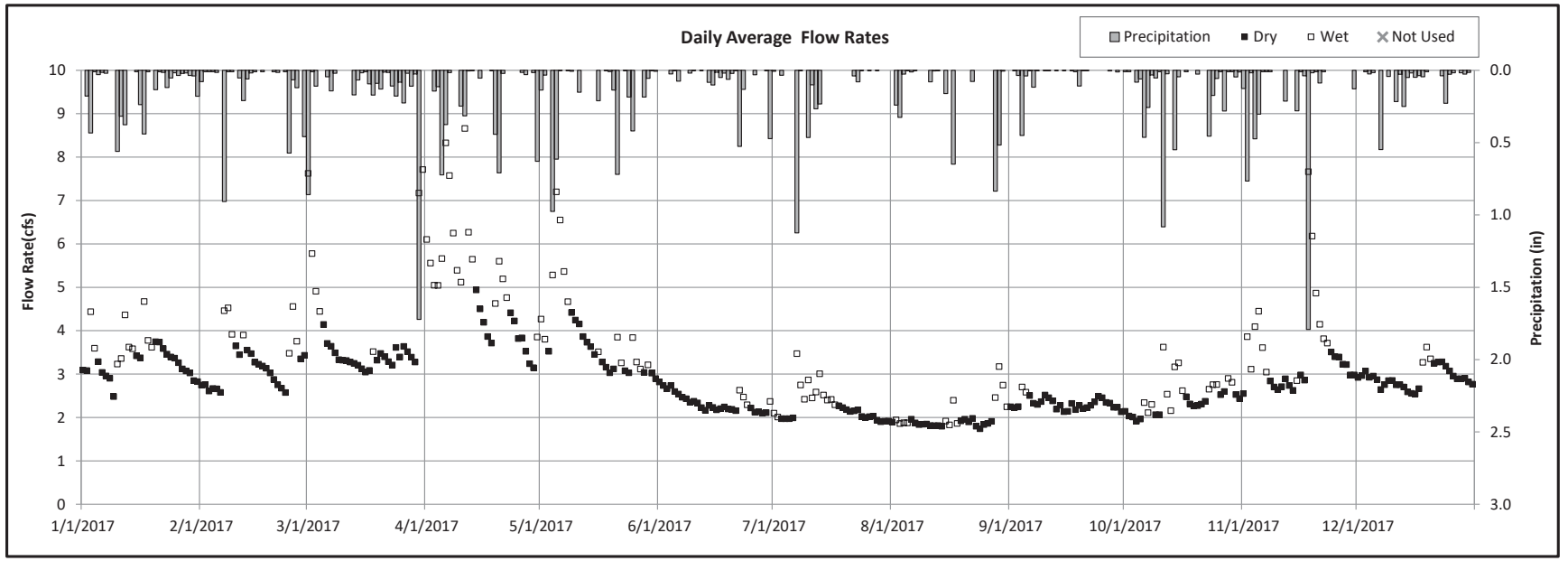
Rouge Valley Sewage Disposal System

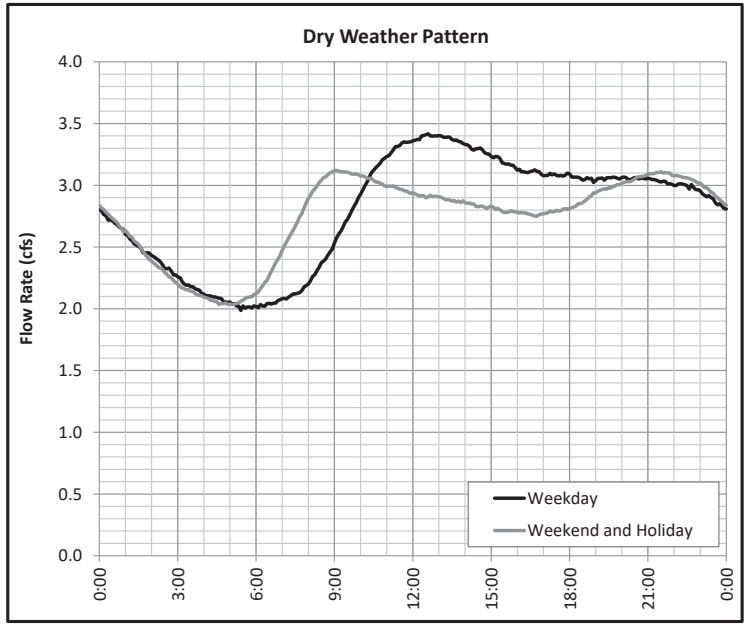
Annual Meter Report

Meter: LV-15
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	3.4	68.0	3.2	64.0	21	10
Feb-17	3.3	59.6	3.0	54.8	21	7
Mar-17	4.0	79.2	3.4	67.9	24	7
Apr-17	5.1	98.2	3.9	76.5	12	18
May-17	3.9	77.4	3.4	69.1	17	14
Jun-17	2.3	45.6	2.3	45.3	26	4
Jul-17	2.3	45.2	2.0	40.9	18	13
Aug-17	2.0	39.8	1.9	37.3	19	12
Sep-17	2.3	45.0	2.3	44.5	28	2
Oct-17	2.5	49.2	2.2	45.1	17	14
Nov-17	3.5	68.2	3.0	57.3	17	13
Dec-17	2.9	58.7	2.9	57.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	10.55	3/1/17 4:55	3.09	3/1/17 10:45
2	1.70	3/30/2017	3/31/2017	13.51	3/30/17 23:00	5.00	3/31/17 5:35
3	1.11	4/5/2017	4/7/2017	9.62	4/5/17 20:35	1.90	4/6/17 1:05
4	1.15	4/19/2017	4/20/2017	9.46	4/19/17 17:10	1.82	4/19/17 17:50
5	1.59	5/4/2017	5/5/2017	9.36	5/5/17 18:40	1.89	5/5/17 18:05
6	1.25	7/7/2017	7/7/2017	10.93	7/7/17 19:30	1.91	7/7/17 20:00
7	1.42	8/28/2017	8/29/2017	5.97	8/29/17 13:30	1.49	8/29/17 14:15
8	1.09	10/10/2017	10/11/2017	6.77	10/11/17 12:30	1.60	10/11/17 12:55
9	1.81	11/17/2017	11/18/2017	11.52	11/18/17 14:35	2.14	11/18/17 21:20

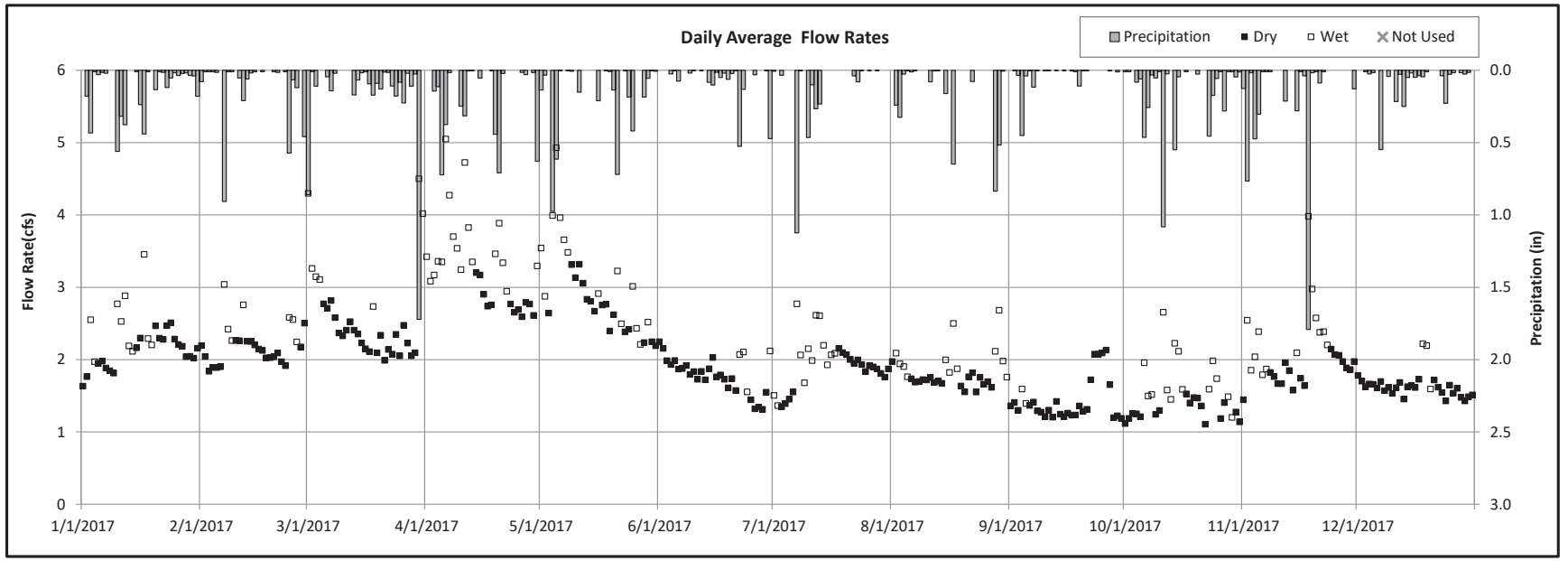
Rouge Valley Sewage Disposal System

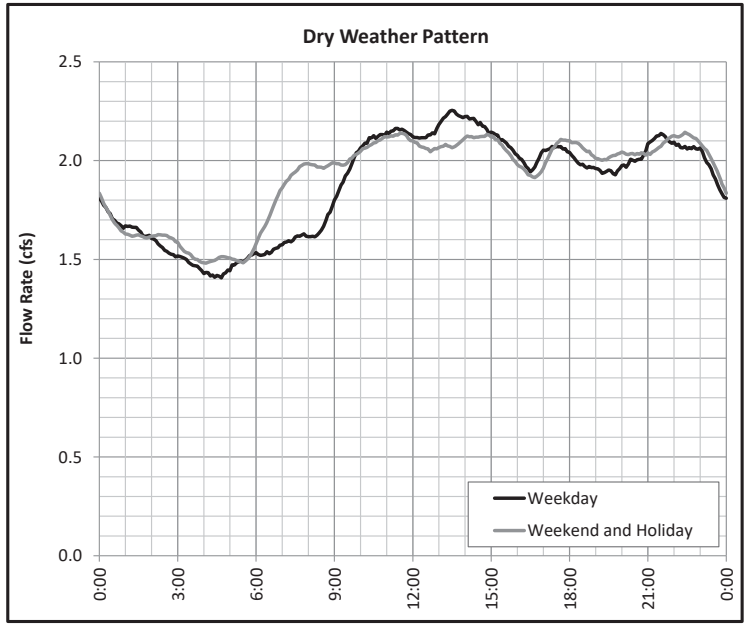
Annual Meter Report

Meter: LV-16
Interceptor Manhole ID: --

Location: 8914 Farmington Road
Interceptor Branch: Middle Rouge

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	2.2	44.7	2.1	42.2	21	10
Feb-17	2.2	40.0	2.1	37.9	21	7
Mar-17	2.6	52.1	2.3	46.4	24	7
Apr-17	3.3	63.7	2.8	54.3	12	18
May-17	2.9	58.8	2.7	53.9	17	14
Jun-17	1.8	34.8	1.8	34.2	26	4
Jul-17	1.9	38.7	1.8	36.6	18	13
Aug-17	1.8	36.7	1.7	34.1	19	12
Sep-17	1.4	27.8	1.4	27.7	28	2
Oct-17	1.5	30.0	1.3	25.8	17	14
Nov-17	2.1	40.2	1.8	35.4	17	13
Dec-17	1.6	32.8	1.6	32.0	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	5.61	3/1/17 0:20	1.15	3/1/17 0:45
2	1.70	3/30/2017	3/31/2017	7.32	3/30/17 16:40	1.50	3/30/17 17:30
3	1.11	4/5/2017	4/7/2017	6.30	4/6/17 18:10	1.18	4/6/17 18:45
4	1.15	4/19/2017	4/20/2017	7.54	4/19/17 16:50	1.36	4/19/17 17:10
5	1.59	5/4/2017	5/5/2017	6.59	5/4/17 22:00	1.15	5/4/17 22:35
6	1.25	7/7/2017	7/7/2017	8.08	7/7/17 19:35	1.28	7/7/17 20:05
7	1.42	8/28/2017	8/29/2017	5.84	8/29/17 14:00	1.09	8/29/17 14:35
8	1.09	10/10/2017	10/11/2017	5.60	10/11/17 12:20	1.07	10/11/17 12:45
9	1.81	11/17/2017	11/18/2017	5.58	11/18/17 14:30	1.05	11/18/17 14:50

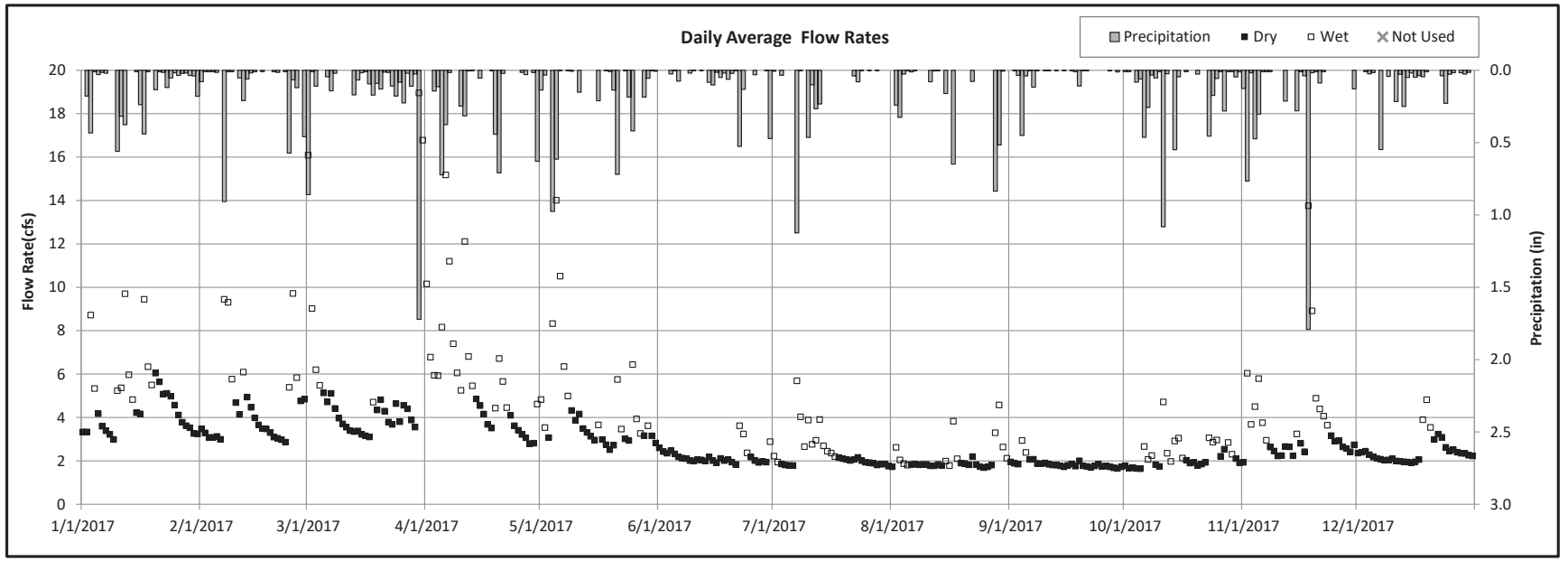
Rouge Valley Sewage Disposal System

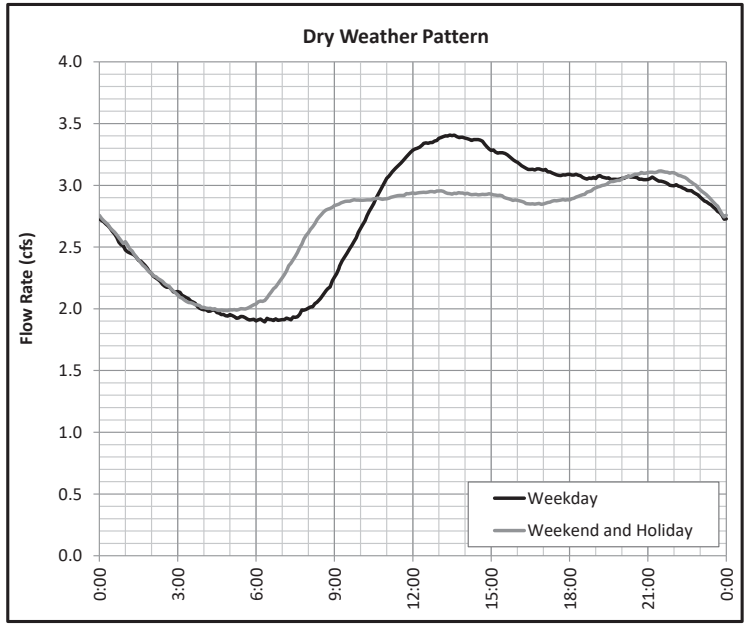
Annual Meter Report

Meter: M-1
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.9	98.0	4.1	81.4	21	10
Feb-17	4.6	82.8	3.7	66.1	21	7
Mar-17	5.6	111.9	4.0	80.0	24	7
Apr-17	5.9	113.7	3.6	70.6	12	18
May-17	4.4	88.5	3.2	64.0	17	14
Jun-17	2.2	43.2	2.1	40.8	26	4
Jul-17	2.4	48.1	1.9	38.7	18	13
Aug-17	2.1	42.1	1.8	36.4	19	12
Sep-17	1.9	36.3	1.8	35.2	28	2
Oct-17	2.3	45.3	1.9	37.8	17	14
Nov-17	3.8	73.1	2.6	49.7	17	13
Dec-17	2.5	49.4	2.3	45.9	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	30.66	3/1/17 5:40	8.68	3/1/17 6:00
2	1.70	3/30/2017	3/31/2017	38.60	3/30/17 20:45	10.02	3/31/17 0:05
3	1.11	4/5/2017	4/7/2017	21.21	4/5/17 23:35	7.68	4/5/17 23:50
4	1.15	4/19/2017	4/20/2017	14.77	4/20/17 16:10	3.98	4/20/17 17:35
5	1.59	5/4/2017	5/5/2017	20.90	5/5/17 18:25	7.88	5/5/17 18:50
6	1.25	7/7/2017	7/7/2017	17.04	7/7/17 19:30	5.53	7/7/17 21:10
7	1.42	8/28/2017	8/29/2017	12.33	8/29/17 14:00	2.27	8/29/17 15:00
8	1.09	10/10/2017	10/11/2017	8.66	10/11/17 9:05	1.52	10/11/17 9:35
9	1.81	11/17/2017	11/18/2017	19.43	11/18/17 20:30	7.49	11/18/17 21:20

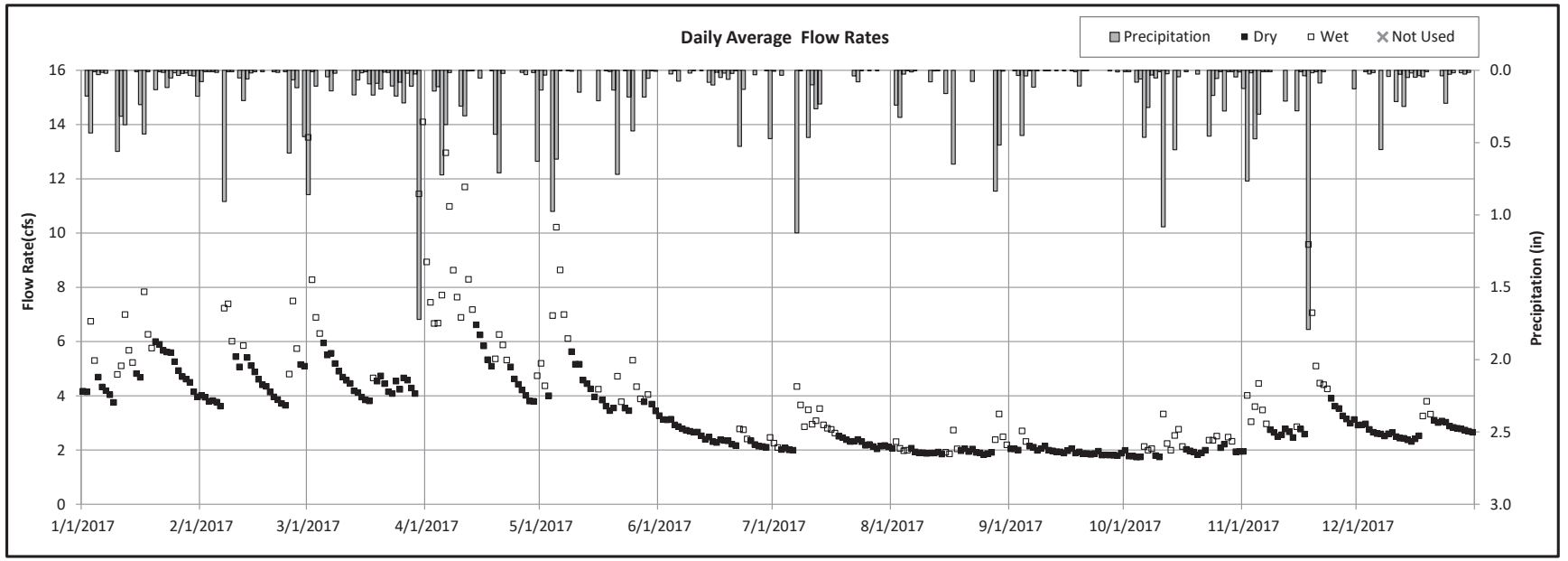
Rouge Valley Sewage Disposal System

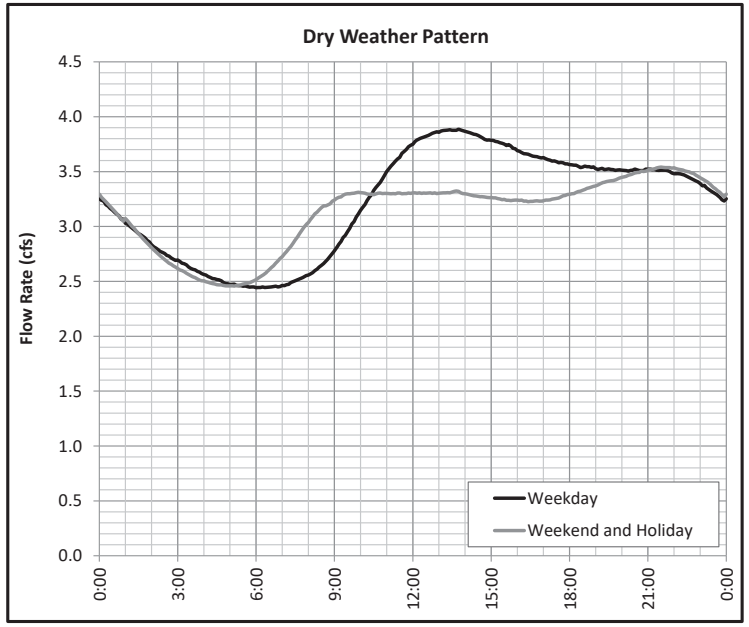
Annual Meter Report

Meter: M-2
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	5.1	102.9	4.7	95.0	21	10
Feb-17	4.9	88.0	4.4	79.0	21	7
Mar-17	5.6	112.5	4.5	91.0	24	7
Apr-17	6.6	128.1	4.9	95.4	12	18
May-17	4.8	95.8	4.1	81.9	17	14
Jun-17	2.6	49.5	2.5	49.4	26	4
Jul-17	2.5	51.1	2.2	44.2	18	13
Aug-17	2.1	41.3	1.9	38.6	19	12
Sep-17	2.0	38.3	1.9	37.6	28	2
Oct-17	2.1	42.3	1.9	38.1	17	14
Nov-17	3.6	70.1	2.9	56.1	17	13
Dec-17	2.8	55.6	2.7	54.1	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	17.96	3/1/17 5:50	4.23	3/1/17 10:55
2	1.70	3/30/2017	3/31/2017	19.91	3/30/17 21:00	8.21	3/31/17 0:00
3	1.11	4/5/2017	4/7/2017	14.82	4/5/17 23:25	2.07	4/6/17 0:20
4	1.15	4/19/2017	4/20/2017	9.26	4/20/17 16:25	1.56	4/20/17 16:35
5	1.59	5/4/2017	5/5/2017	13.38	5/5/17 17:10	1.90	5/5/17 17:35
6	1.25	7/7/2017	7/7/2017	12.13	7/7/17 20:10	1.83	7/7/17 20:30
7	1.42	8/28/2017	8/29/2017	7.83	8/29/17 14:00	1.40	8/29/17 14:40
8	1.09	10/10/2017	10/11/2017	5.94	10/11/17 10:25	1.22	10/11/17 10:45
9	1.81	11/17/2017	11/18/2017	13.28	11/18/17 15:00	1.92	11/18/17 15:40

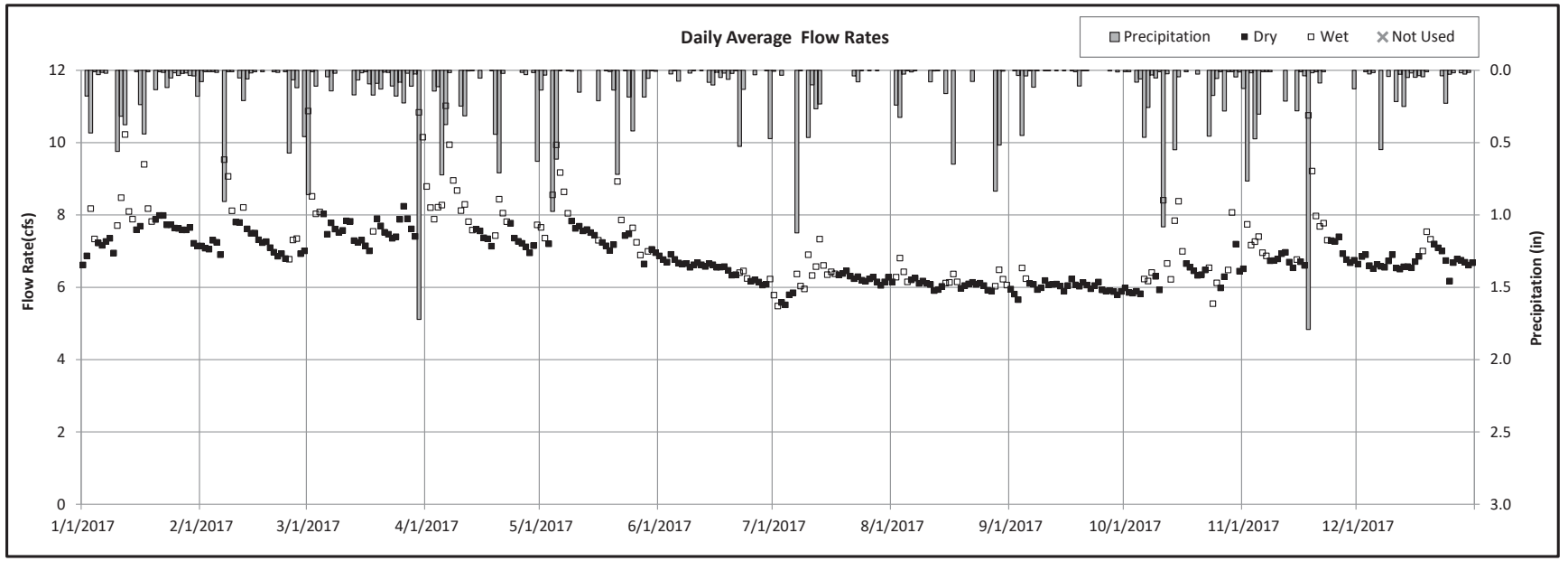
Rouge Valley Sewage Disposal System

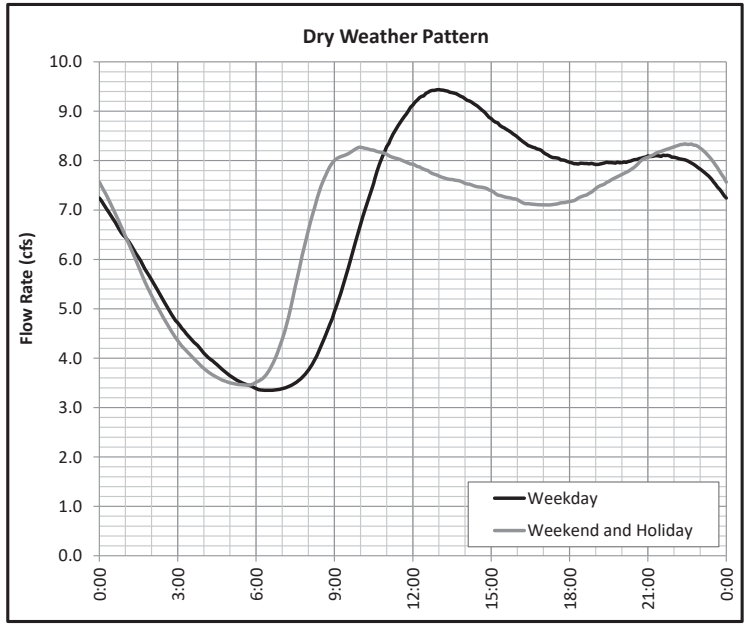
Annual Meter Report

Meter: BG-1
Interceptor Manhole ID: NT 25

Location: 8 Mile Road
Interceptor Branch: Middle Rouge

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	7.7	154.9	7.4	149.2	21	10
Feb-17	7.4	134.2	7.2	130.3	21	7
Mar-17	7.9	158.9	7.6	151.9	24	7
Apr-17	8.0	154.4	7.3	141.9	12	18
May-17	7.6	153.0	7.3	146.8	17	14
Jun-17	6.5	126.1	6.5	126.6	26	4
Jul-17	6.2	124.5	6.1	122.7	18	13
Aug-17	6.1	123.0	6.1	121.5	19	12
Sep-17	6.0	116.7	6.0	116.2	28	2
Oct-17	6.5	130.8	6.3	125.3	17	14
Nov-17	7.2	140.3	6.8	132.6	17	13
Dec-17	6.8	135.3	6.7	134.2	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	13.53	3/1/17 8:10	-	-
2	1.70	3/30/2017	3/31/2017	16.84	3/30/17 20:25	-	-
3	1.11	4/5/2017	4/7/2017	12.13	4/6/17 19:55	-	-
4	1.15	4/19/2017	4/20/2017	12.84	4/20/17 19:50	-	-
5	1.59	5/4/2017	5/5/2017	13.14	5/5/17 15:15	-	-
6	1.25	7/7/2017	7/7/2017	8.47	7/7/17 19:30	-	-
7	1.42	8/28/2017	8/29/2017	8.53	8/29/17 14:55	-	-
8	1.09	10/10/2017	10/11/2017	14.16	10/11/17 9:25	-	-
9	1.81	11/17/2017	11/18/2017	16.15	11/18/17 15:10	-	-

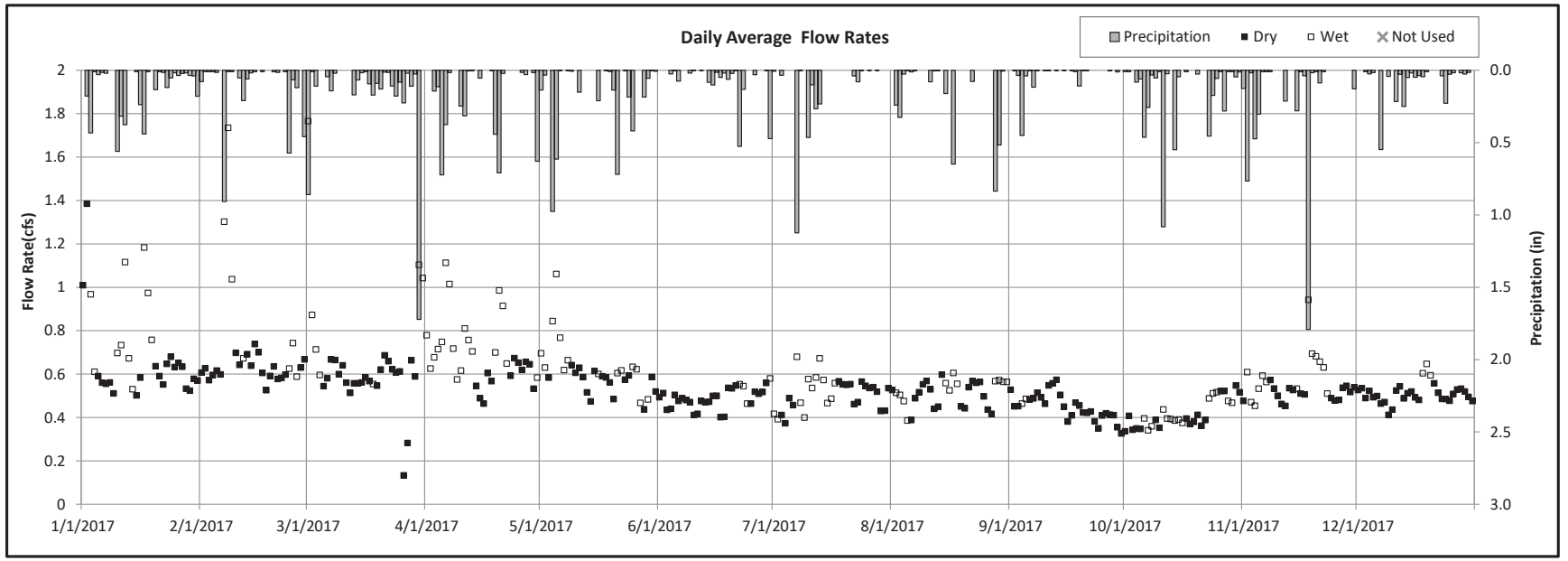
Rouge Valley Sewage Disposal System

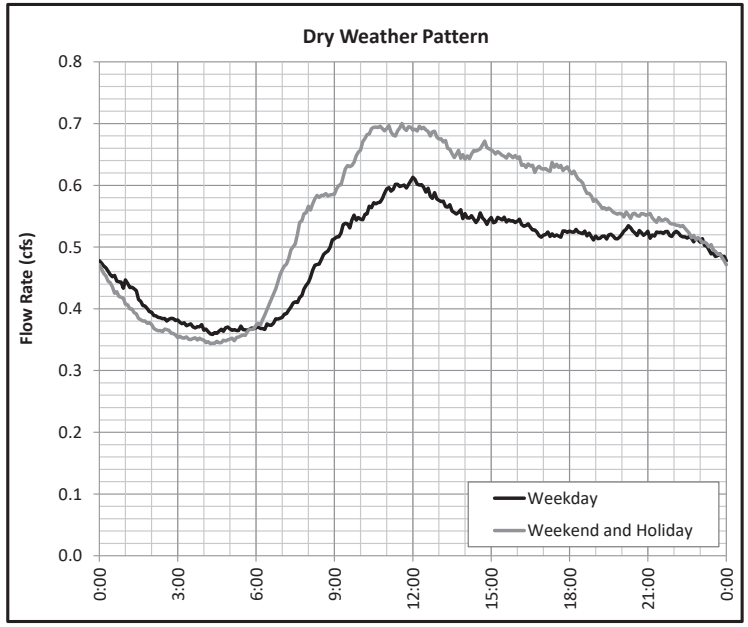
Annual Meter Report

Meter: A
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	0.7	14.0	0.6	12.9	21	10
Feb-17	0.7	12.8	0.6	11.3	21	7
Mar-17	0.7	13.1	0.6	11.4	24	7
Apr-17	0.7	13.4	0.6	11.4	12	18
May-17	0.6	12.2	0.6	11.3	17	14
Jun-17	0.5	9.5	0.5	9.3	26	4
Jul-17	0.5	10.2	0.5	10.0	18	13
Aug-17	0.5	10.3	0.5	10.0	19	12
Sep-17	0.4	8.7	0.4	8.7	28	2
Oct-17	0.4	8.3	0.4	8.2	17	14
Nov-17	0.6	10.7	0.5	9.9	17	13
Dec-17	0.5	10.2	0.5	10.0	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	3.65	3/1/17 0:50	1.02	3/1/17 1:00
2	1.70	3/30/2017	3/31/2017	1.81	3/30/17 16:40	0.68	3/30/17 17:15
3	1.11	4/5/2017	4/7/2017	1.33	4/6/17 16:35	0.60	4/6/17 16:30
4	1.15	4/19/2017	4/20/2017	2.16	4/20/17 15:25	0.72	4/20/17 16:15
5	1.59	5/4/2017	5/5/2017	1.49	5/5/17 14:40	0.60	5/5/17 14:50
6	1.25	7/7/2017	7/7/2017	1.59	7/7/17 19:25	0.66	7/7/17 19:55
7	1.42	8/28/2017	8/29/2017	0.79	8/29/17 16:20	0.48	8/28/17 17:05
8	1.09	10/10/2017	10/11/2017	0.75	10/11/17 9:10	0.56	10/11/17 9:10
9	1.81	11/17/2017	11/18/2017	1.62	11/18/17 14:15	0.67	11/18/17 14:45

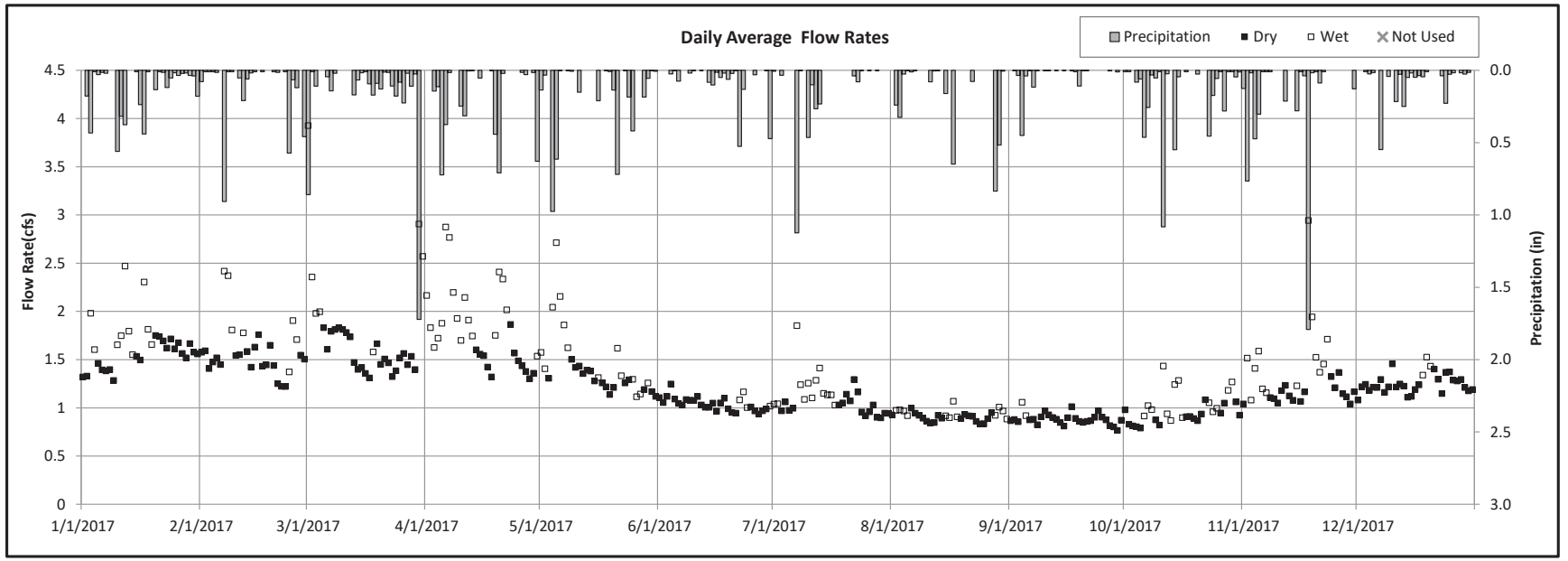
Rouge Valley Sewage Disposal System

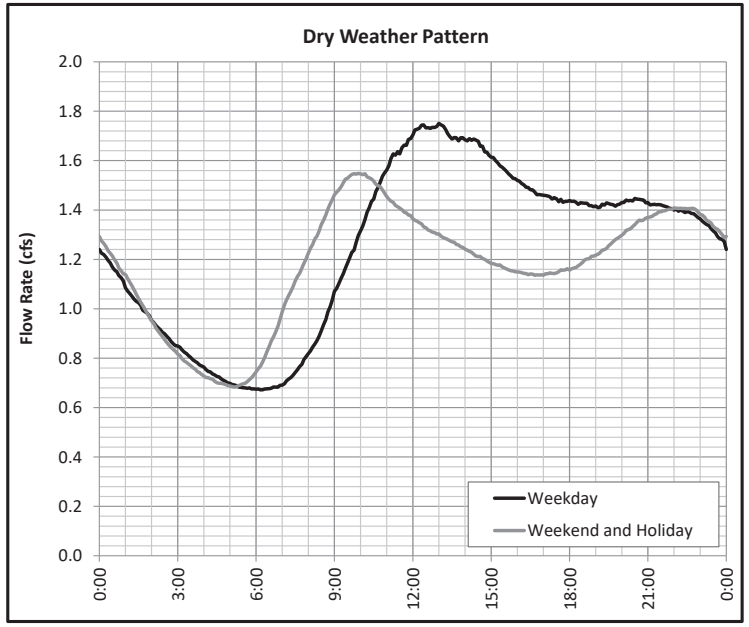
Annual Meter Report

Meter: B
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	1.6	32.8	1.5	30.8	21	10
Feb-17	1.6	28.8	1.5	26.9	21	7
Mar-17	1.8	35.4	1.6	31.2	24	7
Apr-17	1.8	35.1	1.5	28.8	12	18
May-17	1.4	28.7	1.3	25.8	17	14
Jun-17	1.0	20.2	1.0	20.1	26	4
Jul-17	1.1	22.0	1.0	20.3	18	13
Aug-17	0.9	18.4	0.9	18.0	19	12
Sep-17	0.9	17.1	0.9	17.0	28	2
Oct-17	1.0	19.7	0.9	18.2	17	14
Nov-17	1.3	25.6	1.1	22.2	17	13
Dec-17	1.3	25.1	1.2	24.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	5.93	3/1/17 0:55	0.92	3/1/17 1:05
2	1.70	3/30/2017	3/31/2017	4.37	3/30/17 16:55	0.82	3/30/17 17:30
3	1.11	4/5/2017	4/7/2017	3.36	4/6/17 0:35	0.74	4/7/17 8:25
4	1.15	4/19/2017	4/20/2017	4.70	4/20/17 16:10	0.85	4/20/17 16:40
5	1.59	5/4/2017	5/5/2017	3.96	5/5/17 14:30	0.78	5/5/17 14:45
6	1.25	7/7/2017	7/7/2017	4.70	7/7/17 19:50	0.84	7/7/17 20:15
7	1.42	8/28/2017	8/29/2017	1.48	8/29/17 13:10	0.53	8/29/17 13:25
8	1.09	10/10/2017	10/11/2017	2.51	10/11/17 8:50	0.61	10/11/17 10:20
9	1.81	11/17/2017	11/18/2017	4.78	11/18/17 14:55	0.82	11/18/17 15:30

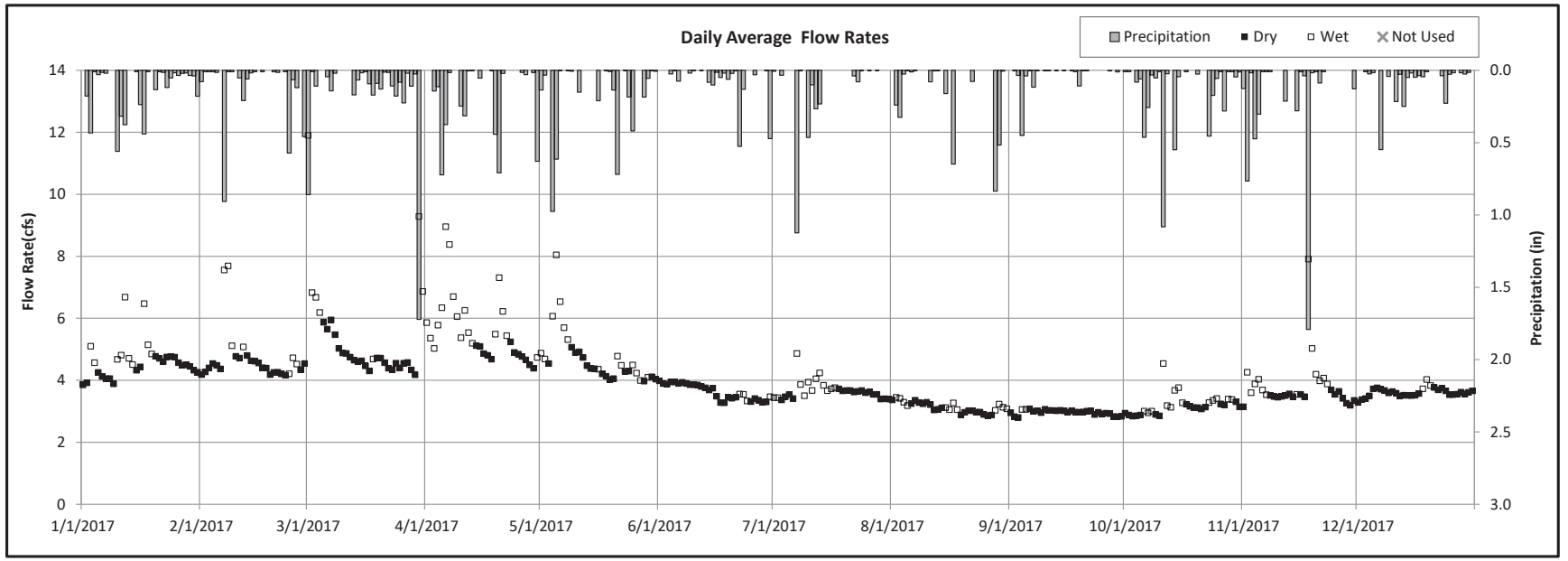
Rouge Valley Sewage Disposal System

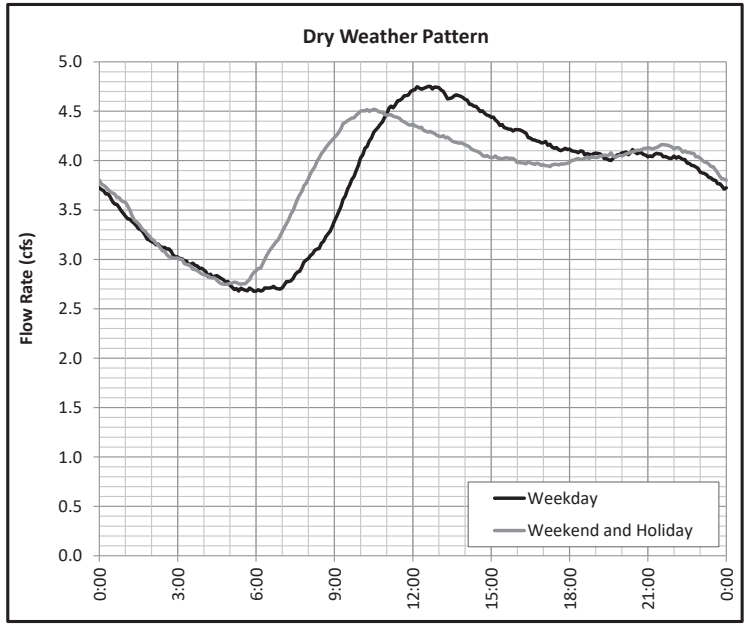
Annual Meter Report

Meter: C
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.6	92.6	4.4	87.5	21	10
Feb-17	4.7	85.2	4.4	80.1	21	7
Mar-17	5.4	107.8	4.8	95.4	24	7
Apr-17	5.6	108.4	4.8	93.4	12	18
May-17	4.7	94.4	4.4	87.7	17	14
Jun-17	3.6	70.3	3.6	70.8	26	4
Jul-17	3.7	73.6	3.5	71.1	18	13
Aug-17	3.1	62.6	3.1	61.8	19	12
Sep-17	3.0	57.4	3.0	57.3	28	2
Oct-17	3.2	64.1	3.0	61.1	17	14
Nov-17	3.8	73.8	3.5	66.9	17	13
Dec-17	3.6	72.2	3.6	71.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	18.75	3/1/17 4:40	1.28	3/1/17 4:50
2	1.70	3/30/2017	3/31/2017	14.25	3/30/17 20:15	1.11	3/30/17 20:45
3	1.11	4/5/2017	4/7/2017	9.47	4/6/17 19:40	0.94	4/6/17 1:15
4	1.15	4/19/2017	4/20/2017	14.94	4/20/17 16:25	1.12	4/20/17 16:40
5	1.59	5/4/2017	5/5/2017	12.83	5/5/17 15:50	1.01	5/5/17 15:05
6	1.25	7/7/2017	7/7/2017	13.10	7/7/17 20:00	1.08	7/7/17 20:15
7	1.42	8/28/2017	8/29/2017	5.32	8/29/17 13:10	0.70	8/29/17 13:25
8	1.09	10/10/2017	10/11/2017	7.41	10/11/17 7:20	0.81	10/11/17 8:00
9	1.81	11/17/2017	11/18/2017	13.48	11/18/17 14:55	2.50	11/19/17 7:50

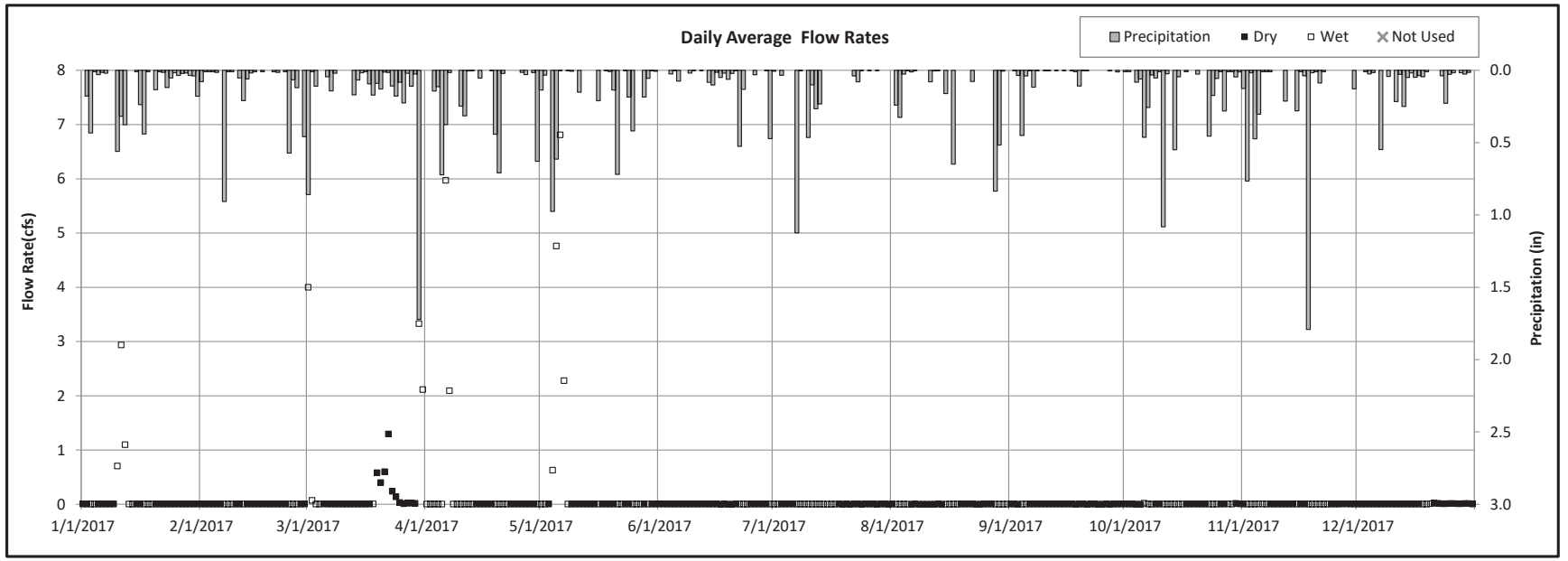
Rouge Valley Sewage Disposal System

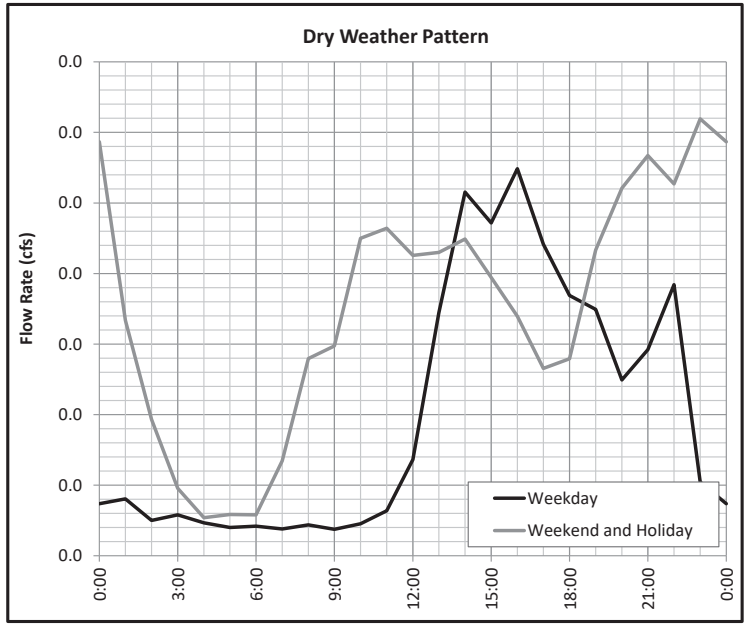
Annual Meter Report

Meter: FE-19
Interceptor Manhole ID: --

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	0.2	3.1	0.0	0.0	21	10
Feb-17	0.0	0.0	0.0	0.0	21	7
Mar-17	0.4	8.3	0.1	2.8	24	7
Apr-17	0.3	5.2	0.0	0.0	12	18
May-17	0.5	9.4	0.0	0.0	17	14
Jun-17	0.0	0.0	0.0	0.0	26	4
Jul-17	0.0	0.0	0.0	0.0	18	13
Aug-17	0.0	0.0	0.0	0.0	19	12
Sep-17	0.0	0.0	0.0	0.0	28	2
Oct-17	0.0	0.0	0.0	0.0	17	14
Nov-17	0.0	0.0	0.0	0.0	17	13
Dec-17	0.0	0.1	0.0	0.1	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	6.81	3/1/17 6:05	-	-
2	1.70	3/30/2017	3/31/2017	6.82	3/30/17 19:05	-	-
3	1.11	4/5/2017	4/7/2017	6.83	4/6/17 9:05	-	-
4	1.15	4/19/2017	4/20/2017	0.00	4/21/17 14:05	-	-
5	1.59	5/4/2017	5/5/2017	6.82	5/4/17 21:05	-	-
6	1.25	7/7/2017	7/7/2017	0.00	7/7/17 23:05	-	-
7	1.42	8/28/2017	8/29/2017	0.00	8/29/17 18:05	-	-
8	1.09	10/10/2017	10/11/2017	0.00	10/11/17 18:05	-	-
9	1.81	11/17/2017	11/18/2017	0.00	11/18/17 15:05	-	-

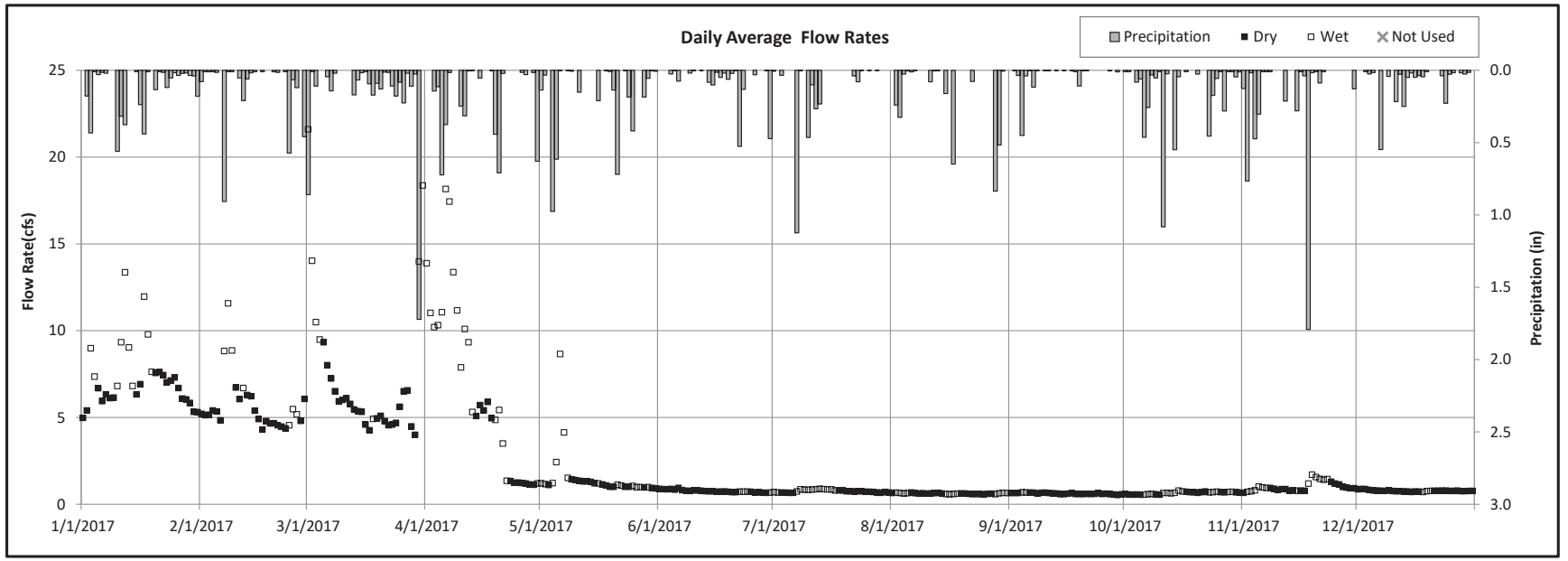
Rouge Valley Sewage Disposal System

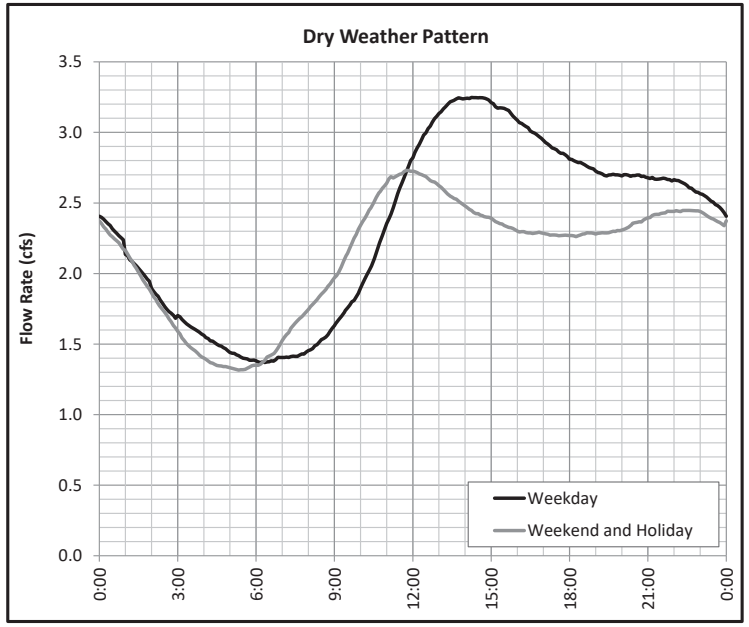
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	7.3	145.5	6.4	127.9	21	10
Feb-17	5.7	103.7	5.2	94.2	21	7
Mar-17	7.4	147.7	5.7	113.2	24	7
Apr-17	6.7	129.9	3.0	57.4	12	18
May-17	1.5	30.5	1.1	22.9	17	14
Jun-17	0.8	14.7	0.8	14.8	26	4
Jul-17	0.8	15.1	0.7	14.2	18	13
Aug-17	0.6	12.3	0.6	12.3	19	12
Sep-17	0.6	11.9	0.6	11.8	28	2
Oct-17	0.6	13.0	0.6	12.7	17	14
Nov-17	1.0	19.5	0.9	17.7	17	13
Dec-17	0.8	15.4	0.8	15.5	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	27.71	3/1/17 7:40	2.06	3/1/17 7:05
2	1.70	3/30/2017	3/31/2017	26.84	3/30/17 21:05	2.03	3/30/17 21:25
3	1.11	4/5/2017	4/7/2017	20.00	4/6/17 21:00	1.87	4/7/17 9:15
4	1.15	4/19/2017	4/20/2017	15.95	4/20/17 20:20	1.67	4/20/17 20:20
5	1.59	5/4/2017	5/5/2017	15.45	5/6/17 12:25	1.61	5/6/17 12:25
6	1.25	7/7/2017	7/7/2017	0.94	7/7/17 20:40	0.48	7/7/17 21:20
7	1.42	8/28/2017	8/29/2017	0.81	8/29/17 17:35	0.45	8/29/17 17:40
8	1.09	10/10/2017	10/11/2017	0.84	10/11/17 18:55	0.45	10/11/17 19:50
9	1.81	11/17/2017	11/18/2017	2.00	11/19/17 12:00	0.60	11/19/17 10:45

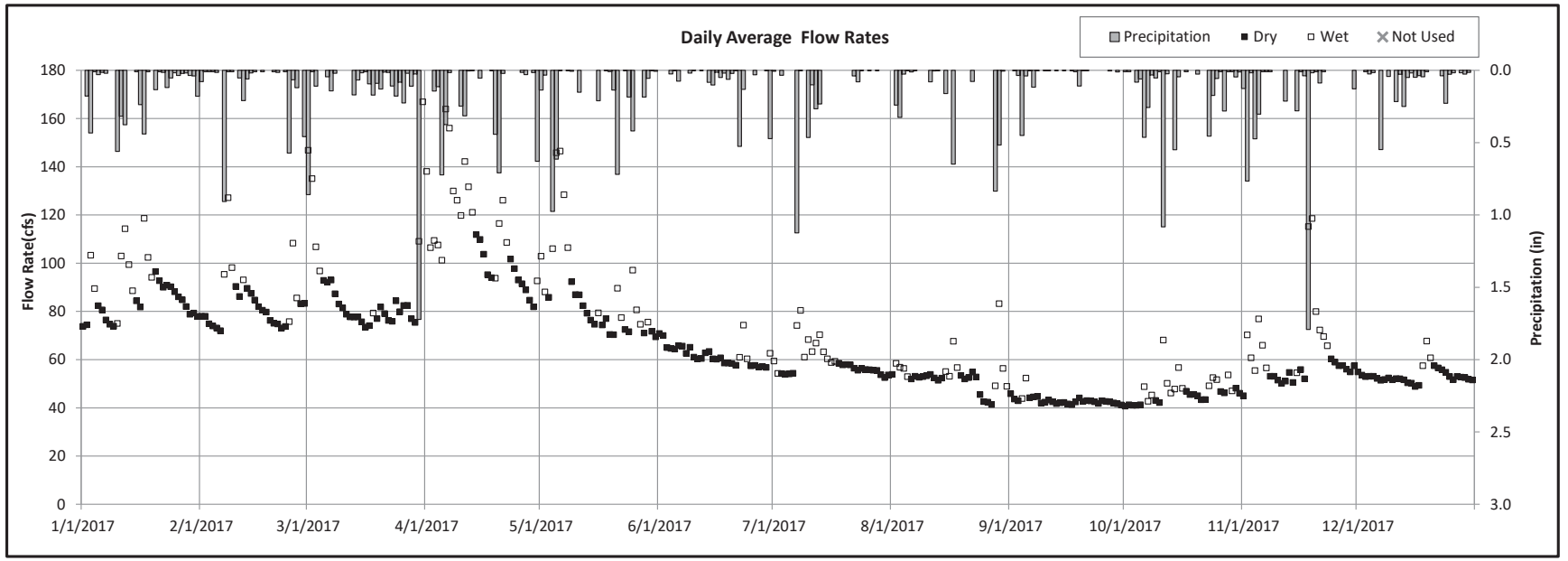
Rouge Valley Sewage Disposal System

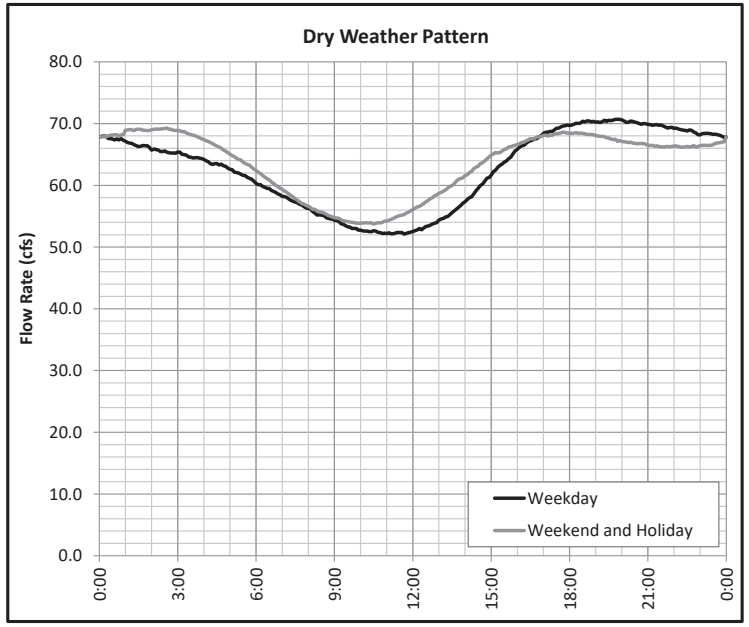
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	88.0	1762.2	82.8	1659.1	21	10
Feb-17	84.0	1520.1	79.5	1438.2	21	7
Mar-17	89.5	1793.9	80.6	1615.5	24	7
Apr-17	111.4	2160.9	96.1	1863.5	12	18
May-17	87.4	1751.5	77.2	1546.5	17	14
Jun-17	62.0	1201.5	61.6	1193.8	26	4
Jul-17	59.3	1188.0	55.5	1112.0	18	13
Aug-17	53.5	1071.8	50.8	1016.9	19	12
Sep-17	43.1	835.1	42.7	828.2	28	2
Oct-17	46.9	939.6	43.9	880.0	17	14
Nov-17	62.7	1215.1	54.1	1048.0	17	13
Dec-17	53.5	1070.9	52.5	1052.7	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	180.27	3/1/17 13:25	15.91	3/1/17 6:45
2	1.70	3/30/2017	3/31/2017	177.02	3/31/17 1:50	19.13	3/30/17 21:40
3	1.11	4/5/2017	4/7/2017	179.35	4/6/17 23:10	16.74	4/5/17 23:55
4	1.15	4/19/2017	4/20/2017	150.63	4/20/17 20:10	16.50	4/20/17 18:40
5	1.59	5/4/2017	5/5/2017	167.72	5/6/17 0:40	15.38	5/5/17 20:30
6	1.25	7/7/2017	7/7/2017	143.23	7/7/17 23:55	-	-
7	1.42	8/28/2017	8/29/2017	124.92	8/28/17 23:50	16.53	8/28/17 22:55
8	1.09	10/10/2017	10/11/2017	116.66	10/11/17 13:35	10.18	10/11/17 10:20
9	1.81	11/17/2017	11/18/2017	165.31	11/19/17 1:10	16.28	11/18/17 17:05

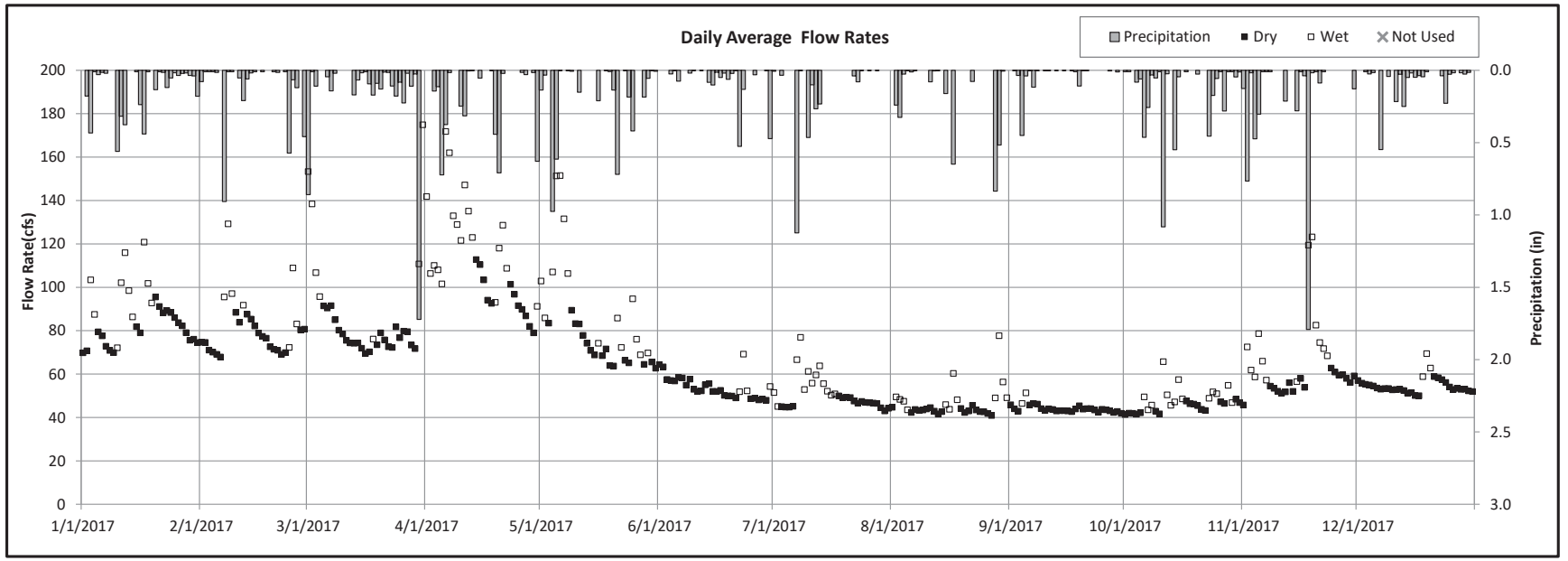
Rouge Valley Sewage Disposal System

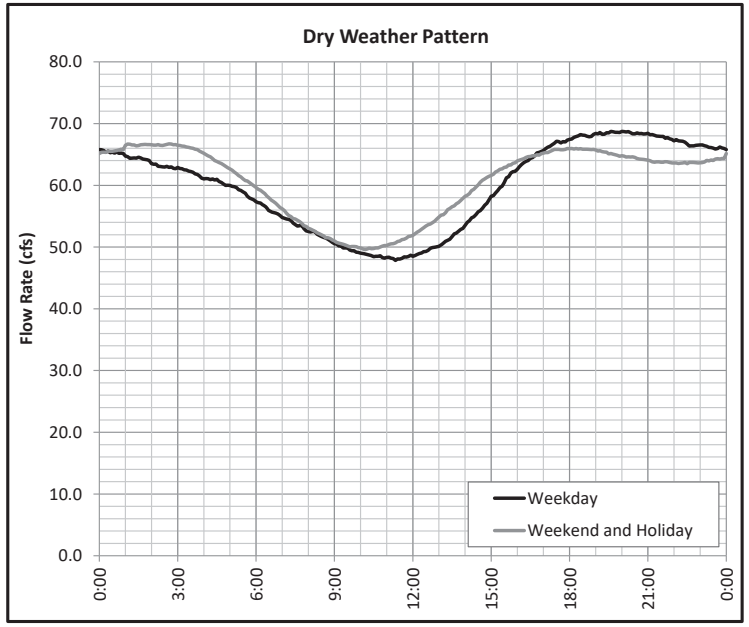
Annual Meter Report

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

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

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	85.9	1720.1	80.0	1603.5	21	10
Feb-17	81.4	1473.0	76.3	1380.2	21	7
Mar-17	87.7	1756.5	77.6	1554.4	24	7
Apr-17	112.3	2177.4	95.0	1842.1	12	18
May-17	83.9	1680.2	71.9	1440.5	17	14
Jun-17	54.0	1047.1	53.6	1038.5	26	4
Jul-17	50.9	1020.0	46.5	931.1	18	13
Aug-17	46.4	928.8	43.1	863.2	19	12
Sep-17	44.1	854.4	43.7	847.8	28	2
Oct-17	47.1	943.7	44.4	888.6	17	14
Nov-17	64.5	1250.3	55.5	1076.8	17	13
Dec-17	54.7	1095.9	53.7	1076.7	28	3

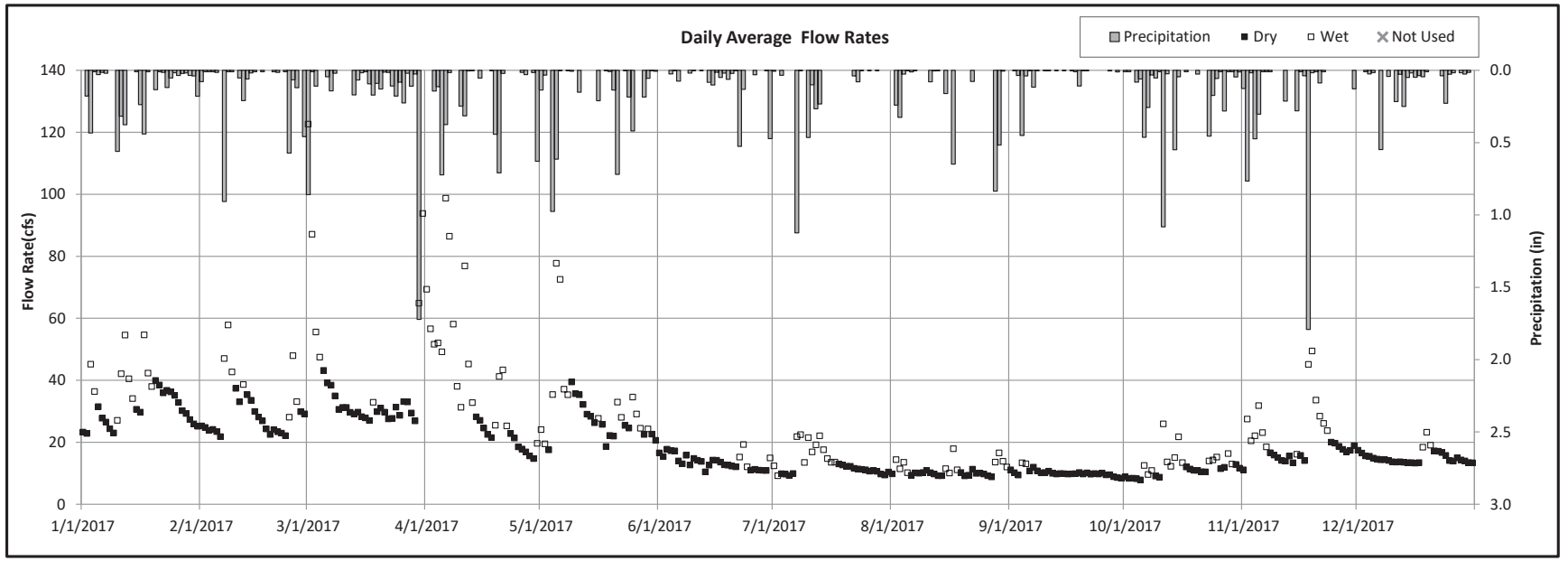
Statistics for Significant Wet Weather Events

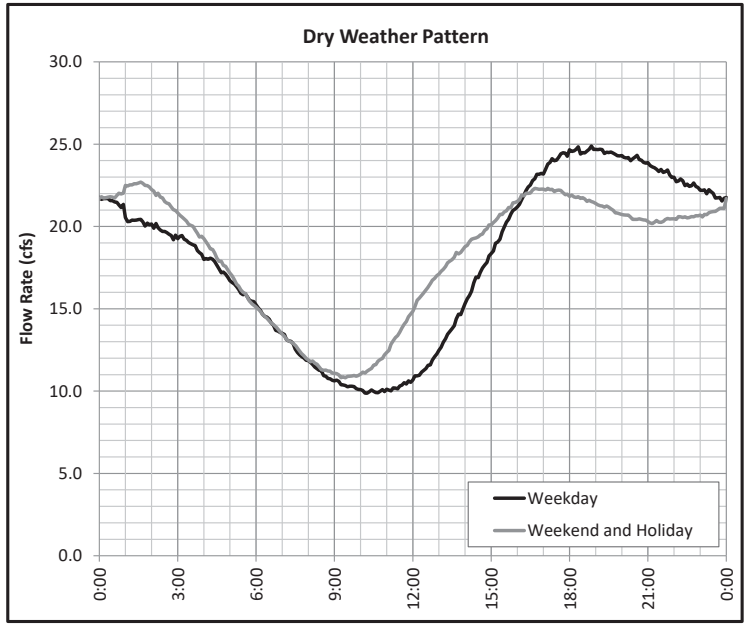
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	189.93	3/1/17 13:05	-	-
2	1.70	3/30/2017	3/31/2017	186.27	3/31/17 1:30	-	-
3	1.11	4/5/2017	4/7/2017	188.89	4/6/17 22:50	-	-
4	1.15	4/19/2017	4/20/2017	156.52	4/20/17 19:50	-	-
5	1.59	5/4/2017	5/5/2017	175.77	5/6/17 0:20	-	-
6	1.25	7/7/2017	7/7/2017	133.05	7/7/17 23:55	-	-
7	1.42	8/28/2017	8/29/2017	121.22	8/29/17 1:40	-	-
8	1.09	10/10/2017	10/11/2017	95.81	10/11/17 14:15	-	-
9	1.81	11/17/2017	11/18/2017	174.92	11/18/17 22:30	-	-

Meter: WC-S-2 + WC-S-3
Interceptor Manhole ID: MR 1A-C2 & MRIR 1-01B

Location: Ford Road West of Evergreen Road & Southfield Road and Mercury Drive
Interceptor Branch: Middle Rouge

Period: 1/1/2017 through 12/31/2017





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	33.8	676.5	30.1	603.1	21	10
Feb-17	30.7	556.2	26.9	487.3	21	7
Mar-17	40.4	809.2	31.2	624.5	24	7
Apr-17	38.4	744.5	20.9	405.8	12	18
May-17	30.6	614.1	26.3	527.7	17	14
Jun-17	13.8	266.9	13.5	262.2	26	4
Jul-17	13.3	267.2	10.9	217.4	18	13
Aug-17	11.0	221.1	9.8	196.4	19	12
Sep-17	10.1	196.6	9.9	192.4	28	2
Oct-17	12.3	246.0	10.2	204.0	17	14
Nov-17	21.3	413.6	16.1	312.9	17	13
Dec-17	15.2	303.7	14.6	292.8	28	3

Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.31	2/28/2017	3/1/2017	161.97	3/1/17 11:25	-	-
2	1.70	3/30/2017	3/31/2017	121.08	3/30/17 21:25	-	-
3	1.11	4/5/2017	4/7/2017	130.28	4/6/17 0:00	-	-
4	1.15	4/19/2017	4/20/2017	93.32	4/20/17 20:25	-	-
5	1.59	5/4/2017	5/5/2017	128.28	5/5/17 21:10	-	-
6	1.25	7/7/2017	7/7/2017	73.17	7/7/17 23:00	-	-
7	1.42	8/28/2017	8/29/2017	52.06	8/28/17 22:05	-	-
8	1.09	10/10/2017	10/11/2017	53.03	10/11/17 14:30	-	-
9	1.81	11/17/2017	11/18/2017	76.16	11/18/17 23:30	-	-

Appendix A

System Reach Maps

WESTLAND
WAYNE
ROMULUS
PALMER
GLENWOOD
MICHIGAN AVE
VAN BORN
ANNAPOLIS
ECORSE
HANNAN
NEWBURGH
HAGGERTY
COGWELL
VENOY
4TH STREET
HENRY RUFF
WTUA LOWER ROUGE EQUALIZATION BASIN
FE-19
TO RVSDS
TO YCUA
WTUA-LR
WTUA CONNECTION
WE-25
P-17
P-19
P-15
WAYNE EQUALIZATION BASIN
Reg 53 (L-34)
Reg 52 (L-35)
Reg 51 (L-37)
Reg 50 (L-36)
WAYNE COUNTY AIRPORT AUTHORITY (WCAA) CONNECTION
WCAA FORCEMAIN
MATCH LINE - FIGURE A2
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)
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY
- EQUALIZATION BASIN

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM
LOWER ROUGE INTERCEPTOR SCHEMATIC
HANNAN TO VENOY

SYSTEM MONITORING PLAN
FIGURE A1 OF 8

REVISION DATE: FEBRUARY 22, 2017

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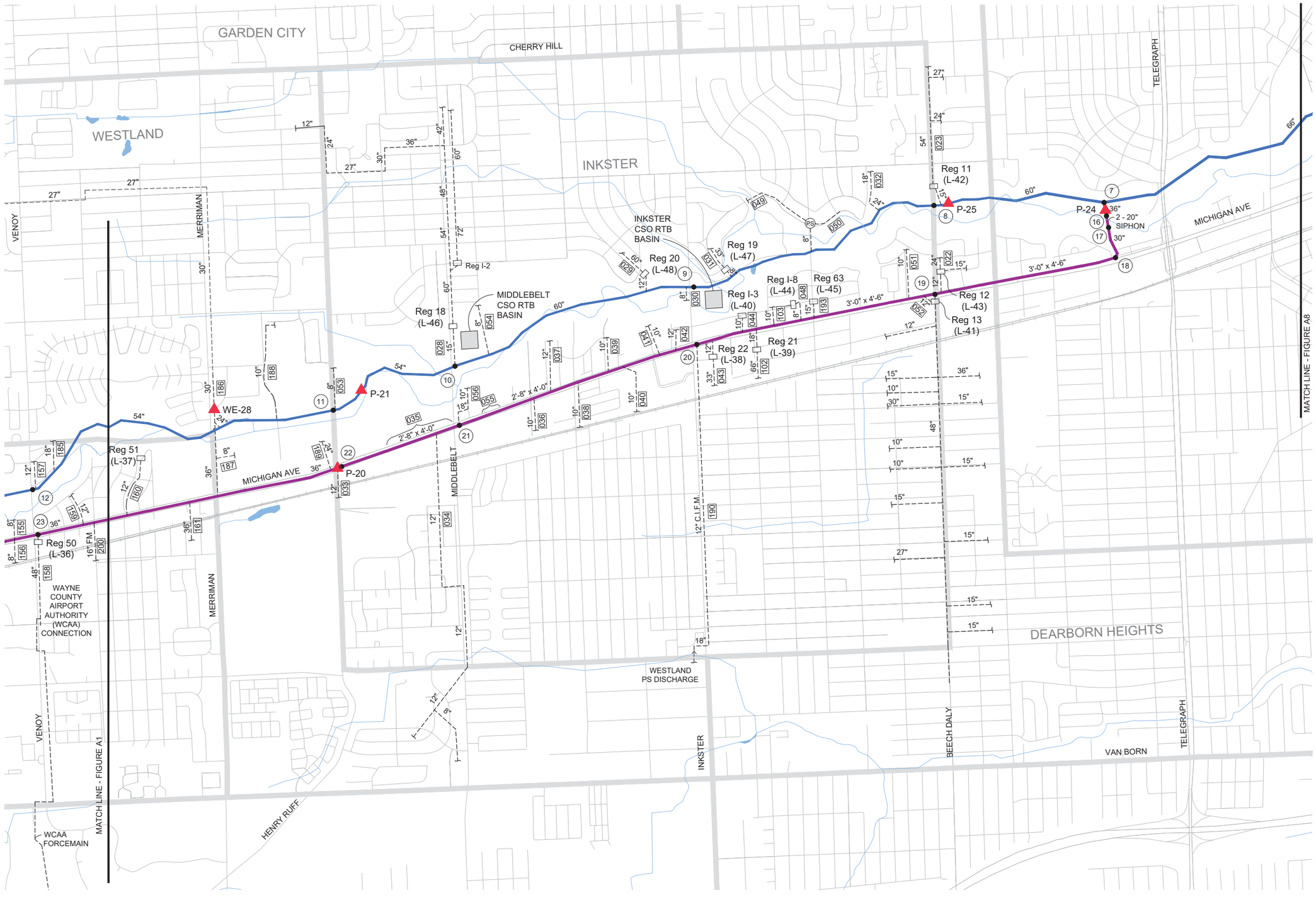

N
W E
S

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 INTERCEPTOR (WI-1)
- ROUGE VALLEY INTERCEPTOR (RVI)
- 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: FEBRUARY 22, 2017

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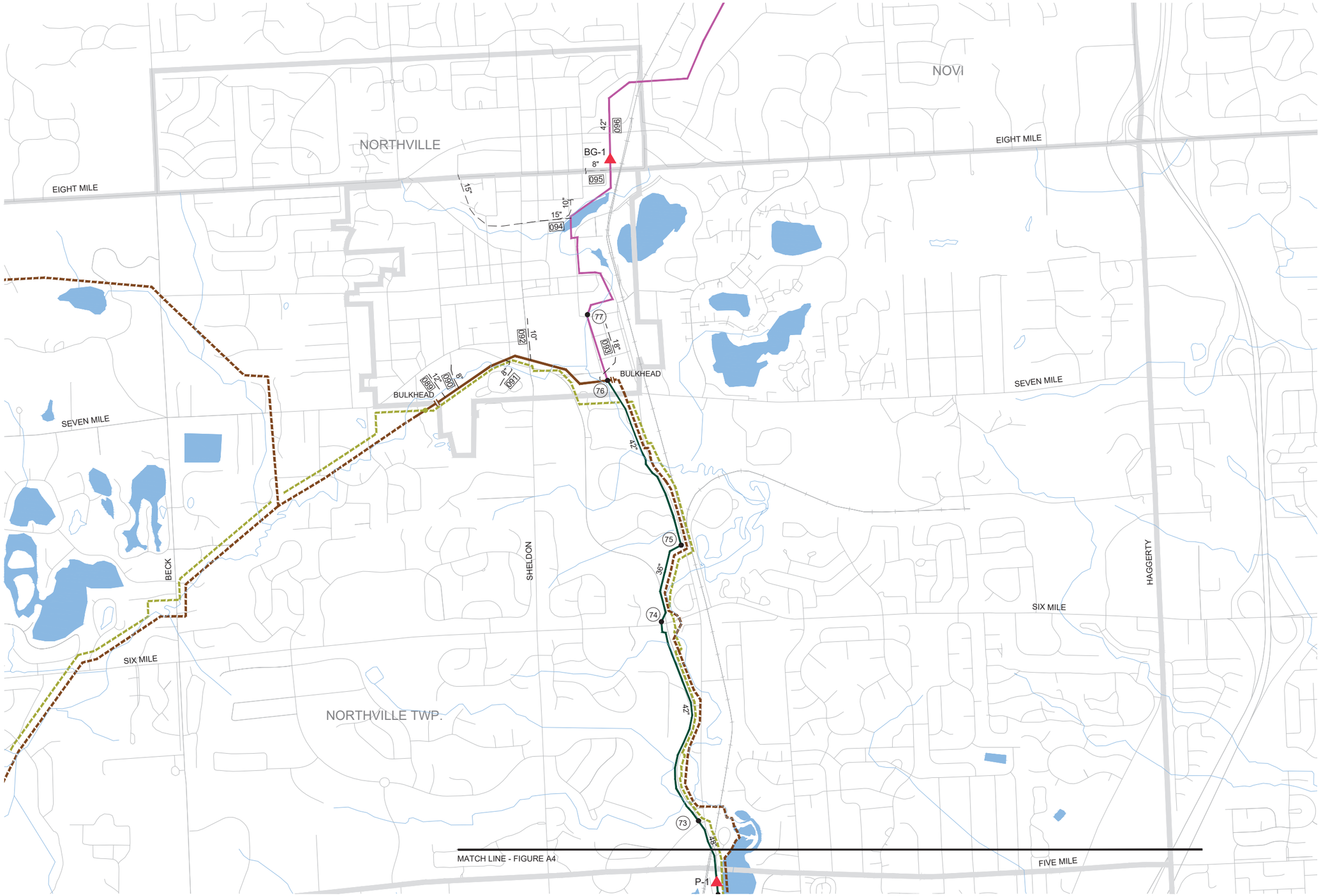

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GRAPHIC SCALE
1,000 0 1,000
1" = 1,000'

LEGEND

- REGULATOR
- FLOW METER
- JUNCTION
- 1 — JUNCTION ID
- X-XX — LINE CONNECTION ID
- COMMUNITY SEWER
- PARKWAY INTERCEPTOR (PWI)
- PARKWAY INTERCEPTOR (PWI) (LEASED TO OWN BY WTUA)
- NORTH ARM INTERCEPTOR (NAI)
- HURON-ROUGE SEWAGE DISPOSAL SYSTEM (HRSDS) (OWNED BY OAKLAND COUNTY)
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC
NORTHVILLE TO 5 MILE ROAD

SYSTEM MONITORING PLAN
FIGURE A3 OF 8

REVISION DATE: FEBRUARY 22, 2017

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MATCH LINE - FIGURE A3

FIVE MILE

WILCOX

SCHOOLCRAFT

LIVONIA

PLYMOUTH

PLYMOUTH TWP.

ANN ARBOR TRAIL

BULKHEAD

HINES

PLYMOUTH

NEWBURGH

JOY

CITY OF PLYMOUTH METERED CONNECTIONS CONVEYED BY WTUA INTERCEPTOR SYSTEM TO THE RVI

WTUA MIDDLE ROUGE EQUALIZATION BASIN

12" FM WTUA-MR

FE-22

P-1

P-3

P-26

A

B

C

WEIR

MATCH LINE - FIGURE A5

N

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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)
- PARKWAY INTERCEPTOR (PWI) (LEASED TO OWN BY WTUA)
- ROUGE VALLEY INTERCEPTOR (RVI)
- ROUGE VALLEY INTERCEPTOR (RVI) (LEASED TO OWN BY WTUA)
- MIDDLE ROUGE INTERCEPTOR RELIEF (MRIR)
- NORTH ARM INTERCEPTOR (NAI)
- WTUA INTERCEPTOR SYSTEM
- COMMUNITY BOUNDARY
- EQUALIZATION BASIN

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC
5 MILE ROAD TO NEWBURGH

SYSTEM MONITORING PLAN
FIGURE A4 OF 8

REVISION DATE: FEBRUARY 22, 2017

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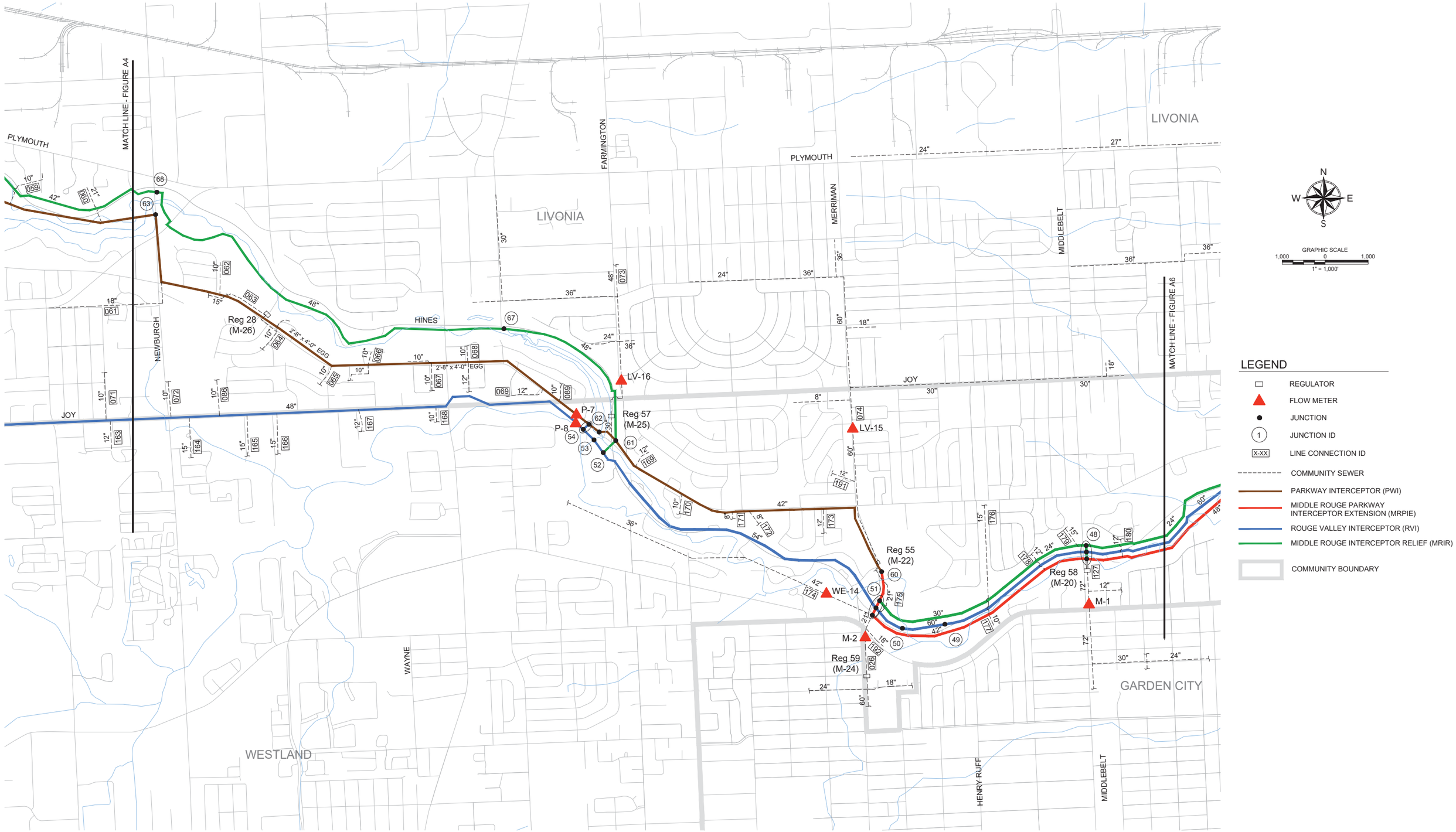

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC NEWBURGH TO MIDDLEBELT

SYSTEM MONITORING PLAN

FIGURE A5 OF 8

REVISION DATE: FEBRUARY 22, 2017

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MATCH LINE - FIGURE 7

REDFORD TWP

LIVONIA

PLYMOUTH

CHICAGO

BEECH DALY

MIDDLEBELT

INKSTER

JOY

DETROIT

EVERGREEN

DEARBORN HEIGHTS

GARDEN CITY

MATCH LINE - FIGURE 5

MATCH LINE - FIGURE A8

54" RELIEF SEWER

GLWA/DWSD (NWI)

DEARBORN HEIGHTS CSO RTB BASIN

Reg 45 (U-2)

Reg 46 (U-1)

P-13

P-12

P-10

P-9

P-11

LV-14

Reg 56 (M-21)

Reg 58 (M-20)

M-1

Reg 10 (M-19)

Reg 3A

Reg 3 (M-18)

Reg 6 (M-17)

Reg 5 (M-15)

Reg 4 (M-16)

P-35

P-33

P-34

Reg 2 (M-33)

P-30

P-31

P-32

Reg 9 (Bulkheaded)

Reg 8 (M-13)

DT-

N

W E

S

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
- MIDDLE ROUGE PARKWAY INTERCEPTOR EXTENSION (MRPIE)
- ROUGE VALLEY INTERCEPTOR (RVI)
- MIDDLE ROUGE INTERCEPTOR RELIEF (MRIR)
- GLWA/DWSD INTERCEPTOR
- COMMUNITY BOUNDARY
- RETENTION TREATMENT BASIN (RTB)

GLWA GREAT LAKES WATER AUTHORITY

DWSD DETROIT WATER AND SEWERAGE DEPT

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC MIDDLEBELT TO OUTER DRIVE

SYSTEM MONITORING PLAN

FIGURE A6 OF 8

REVISION DATE: FEBRUARY 22, 2017

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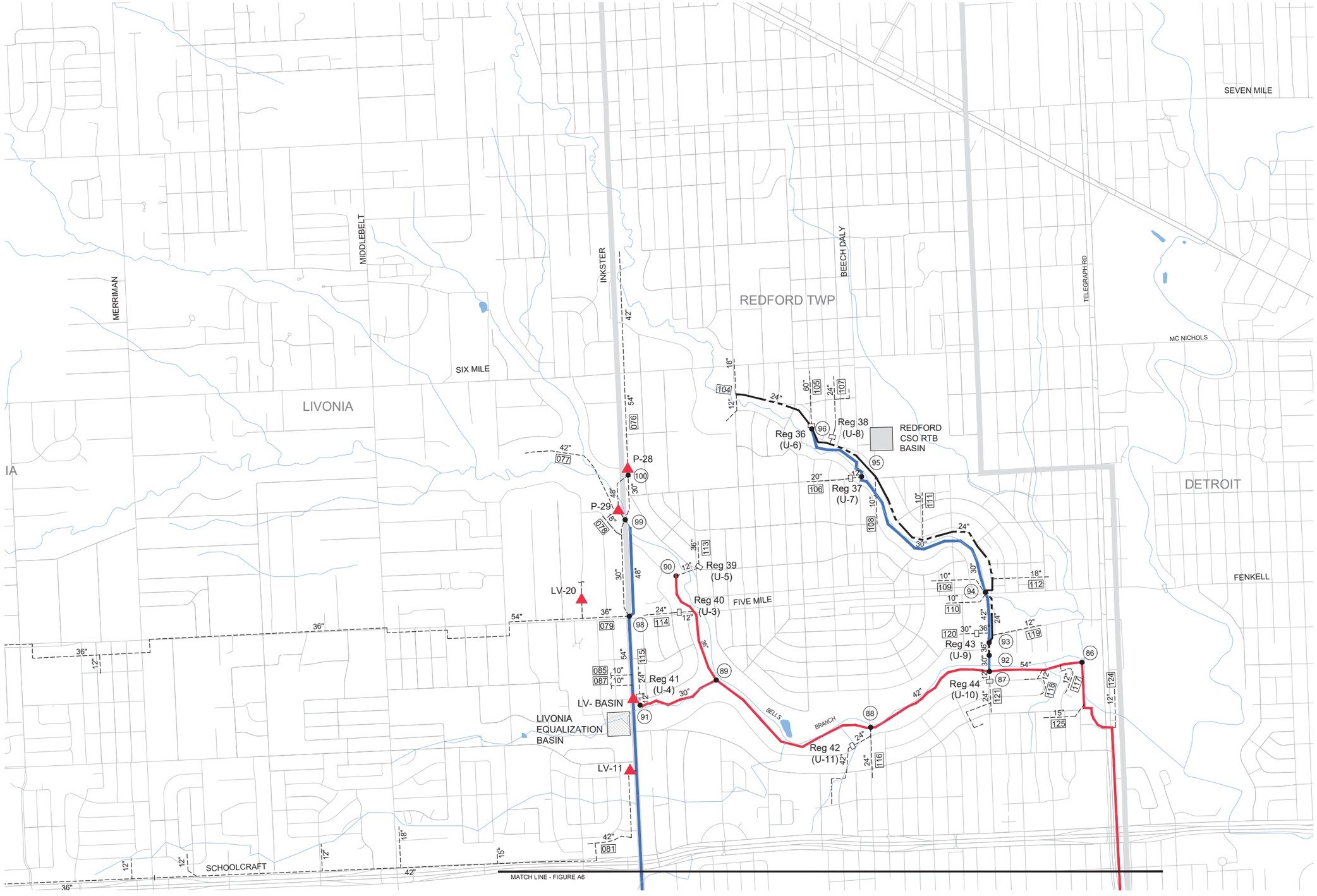

N
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GRAPHIC SCALE
1,000 0 1,000
1" = 1,000'

LEGEND

- REGULATOR
- FLOW METER
- JUNCTION
- (1) JUNCTION ID
- [X-XX] LINE CONNECTION ID
- COMMUNITY SEWER
- MIDDLE ROUGE PARKWAY INTERCEPTOR EXTENSION (MRPIE)
- ROUGE VALLEY INTERCEPTOR (RVI)
- LOLA VALLEY INTERCEPTOR
- COMMUNITY BOUNDARY
- RETENTION TREATMENT BASIN (RTB)
- EQUALIZATION BASIN

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC INKSTER AND REDFORD ARMS

SYSTEM MONITORING PLAN
FIGURE A7 OF 8

REVISION DATE: FEBRUARY 22, 2017

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P-30
Reg 9 (Bulkheaded)
Reg 8 (M-13)
Reg 7 (M-14)
MATCH LINE - FIGURE A6
GLWA/DWSD (NW)
DT-S-1
PAUL AVE
FORD RD
WC-S-2
L-133
JC I-18A
LS1A
RIVER SIPHONS
(2 - 36" CONSTRUCTED UNDER MRIR)
(2 - 42" CONSTRUCTED UNDER STCAP)
120" GLWA/DWSD (NW)
WC-S-3
HUBBELL-SOUTHFIELD
2 BBL @ 160' x 171'
MICHIGAN AVE
I-94
L-199
L-132
DEARBORN
HUBBELL-SOUTHFIELD CSO RTB
P-14
RVI (OAKWOOD)
102"
W. OUTER DRIVE
MATCH LINE - FIGURE A2
ALLEN PARK
120" GLWA/DWSD (NW)
ALLEN PARK AP-S-2
DEARBORN DN-S-2
L-131
ALLEN PARK AP-S-1
MELVINDALE ME-S-1
WC-S-1A
DEARBORN MILLER ROAD PS CONNECTION (DN-S-8)
DETROIT BABY CREEK CONNECTION (BC-S-2)
WC-S-1
OI-L
B050
GLWA/DWSD CSO OUTFALL 054
GLWA/DWSD OWWI
OAKWOOD PS
PS#2 DWRRF
PS#1 DWRRF
60"Ø MRPIE
78"Ø RVI
66"Ø MRIR
JC 2-8
SIPHON S-4
JC 1
MASTER CONTROL
54"Ø
BAR RACK
66"Ø MRIR
78"Ø RVI
WET WELL
SL-2
CHANNEL
SL-1
WET WELL
SL-3
LS1A
FLAP GATE (TYP OF 6)
DROP HOLE
ROUGE RIVER
ELEVATED DISCHARGE BOX
6'x6' SLIDE GATE (NORMALLY OPEN)
JC 2
2-42"Ø SIPHONS
JC 3
JC 4
2-36"Ø SIPHONS
EMERGENCY RELIEF
60"Ø MRPIE
FLAP GATE
66"Ø MRPIE
72"Ø MRIR
JC 1-18A
METER WC-S-2
54"Ø
66"Ø MRPIE
72"Ø MRIR
75"Ø
93"Ø MRPIE
FLAP GATE
72"Ø MRIR
HUBBELL-SOUTHFIELD
L-199
7'Ø
INFLATABLE DAM
10'Ø NWI
L-132
STOP PLATE IN SIPHON CHAMBER CREST = 571.4 ft (NAVD88)
10'Ø
B097
RVI
NWI
8'-6"Ø
S-6
(2) 6'-6"Ø SIPHONS
N
W
E
S
GRAPHIC SCALE
1,250 0 1,250
1" = 1,250'

LEGEND

- RVSDS POINT OF DISCHARGE TO GLWA/DWSD
- REGULATOR
- FLOW METER
- JUNCTION
- 1 — JUNCTION ID
- X-XX — LINE CONNECTION ID
- COMMUNITY SEWER
- MIDDLE ROUGE PARKWAY INTERCEPTOR EXTENSION (MRPIE)
- ROUGE VALLEY INTERCEPTOR (RVI)
- MIDDLE ROUGE INTERCEPTOR RELIEF (MRIR)
- LIFT STATION 1A (LS1A)
- GLWA/DWSD INTERCEPTOR
- COMMUNITY BOUNDARY
- MAJOR COMMUNITY LINE CONNECTION TO GLWA/DWSD INTERCEPTOR

GLWA	GREAT LAKES WATER AUTHORITY
DWSD	DETROIT WATER AND SEWERAGE DEPT
DWRRF	DETROIT WATER RESOURCE RECOVERY FACILITY

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

SYSTEM MONITORING PLAN
FIGURE A8 OF 8

REVISION DATE: JANUARY 23, 2018

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