Wayne County Rouge Valley Sewage Disposal System

Annual System Monitoring Report for 2022

Report to Wayne County and Communities

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September 5, 2023

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1.0 System Summary

A) Introduction

The Rouge Valley Sewage Disposal System (RVSDS) annual system monitoring report for 2022 provides a summary of the best available flow monitoring dataset for January through December 2022.

This report supersedes and consolidates the information previously issued in the quarterly system monitoring reports for 2022. It is intended to provide the best available estimate of flow rates for the entire RVSDS, each meter district and community during the dry and wet weather conditions that occurred in 2022. For some meter districts and communities, the data have been revised from the previously issued reports. The flow monitoring data were reviewed and missing or erroneous data have been estimated using fill-in techniques to provide a complete data set. Any monitoring plan updates made in the annual period and major findings from the RVSDS 2022 system monitoring are presented below.

B) Noteworthy Items

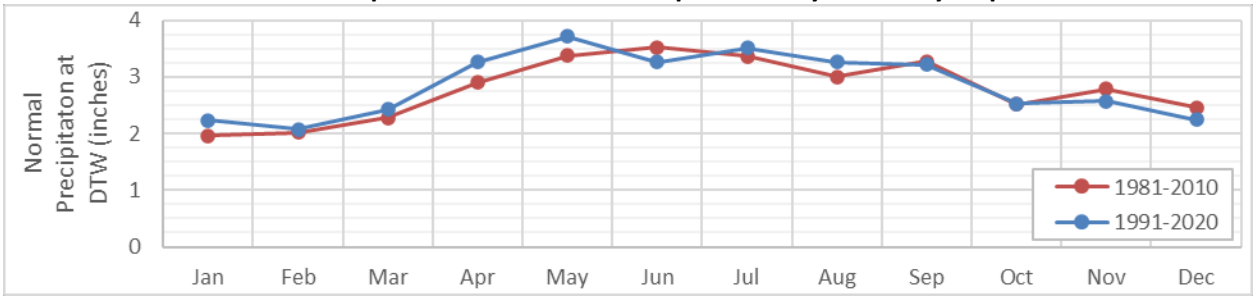
1) Over the year, the flow meters in the RVSDS operated and provided useful data for 89.2% of the period. Excluding the customer meters and the three Great Lakes Water Authority (GLWA) outlet meters (see discussion under item E), the Wayne County flow meters in the RVSDS operated and provided useful data for 98.0% of the period.

2) The results of all applicable dye-dilution tests of RVSDS flow meters for data through 2022 are shown in Table B-1 for reference (Appendix B). The data presented in this report reflects the results of these dye-dilution tests. The dye test results provide 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.

3) Climate Normal precipitation values used in System Monitoring Reports were updated from 1981-2010 to 1991-2020 values. The 1991–2020 U.S. Climate Normals are the latest available. The National Centers for Environmental Information generates the official U.S. Climate Normals every 10-years and are calculated for a uniform 30-year period.

   The 1991–2020 Climate Normal annual precipitation at the DTW is 34.32 inches, which is 0.85 inches above the 1981-2010 Climate Normal annual precipitation value. Figure 1-1 shows the monthly Climate Normal precipitation at DTW.

Figure 1-1
Rouge Valley Sewage Disposal System
Normal Precipitation at Detroit Metropolitan Wayne County Airport



C) RVSDS Overview

1) The total precipitation at the Detroit Metropolitan Wayne County Airport (DTW) for year 2022 was 24.31 inches, which is 10.01 inches below normal.

2) Over the last five years, the total annual precipitation at DTW has been above normal, which is 34.32 inches. The total precipitation above normal at DTW from 2017 through 2021 were 1.14, 9.49, 2.06, 4.41 and 5.67 inches, respectively.

3) Figure 1-1 shows the long-term flow rate versus precipitation trend for the RVSDS by month from 2017 through 2022. The total flow rate to GLWA is based on the sum of the outlet flow meters (WC-S-1 + WC-S-2 + WC-S-3), estimated as discussed in Item E, and the total precipitation is at DTW.

   On the top graph, the blue vertical bars show the monthly precipitation, and the black markers show the monthly normal precipitation. On the middle graph, the solid blue line shows the 12-month rolling total precipitation, and the gray dashed line shows the 12-month rolling total normal precipitation. On the bottom graph, the vertical bars show the average monthly flow rate, the solid black line shows the 12-month rolling average flow rate, and the black dashed line shows the 2017-2021 average monthly flow rate. The 5-year average from 2017-2021 provides a long-term high-quality dataset for comparison to current conditions.

4) Tables 1-1 through 1-4 list the average quarterly RVSDS outlet flow rate and total flow volume to GLWA for years 2017 through 2022. The total RVSDS outlet flow rate to GLWA is based on the three outlet Meters WC-S-1, WC-S-2, and WC-S-3 (estimated as discussed in item E).

5) Table 1-5 lists the average annual (Q1 through Q4) RVSDS outlet flow rate and total flow volume to GLWA for years 2017 through 2022. The total RVSDS outlet flow rate to GLWA is based on the three outlet Meters WC-S-1, WC-S-2, and WC-S-3 (estimated as discussed in item E).

6) The total RVSDS outlet flow volume to GLWA for each quarter in 2022 is well below the 5-year average quarterly volume. The total RVSDS outlet flow volume to GLWA for 2022 Q3 and Q4 is the lowest of the last six years. The total RVSDS outlet flow volume to GLWA for 2022 is the lowest of the last six years.

7) Figures 1-2 through 1-5 plot the average quarterly RVSDS outlet flow rate to GLWA versus the quarterly total precipitation at DTW for years 2017 through 2022. These figures show the trend between precipitation and RVSDS flow rates. The total precipitation at DTW for each quarter was below normal. The RVSDS outlet flow rate was within the 95% confidence interval for the given precipitation.

8) Table 1-6 lists the average annual (Q1 through Q4) customer flow rate and total flow volume for year 2022. The sum of the outlet flow meters is based on the Wayne County estimated flow rates for Meters WC-S-1, WC S-2 and WC-S-3.

Figure 1-1
Rouge Valley Sewage Disposal System
Monthly RVSDS Flow Rate to GLWA versus Total Precipitation at DTW for 2017 through 2022

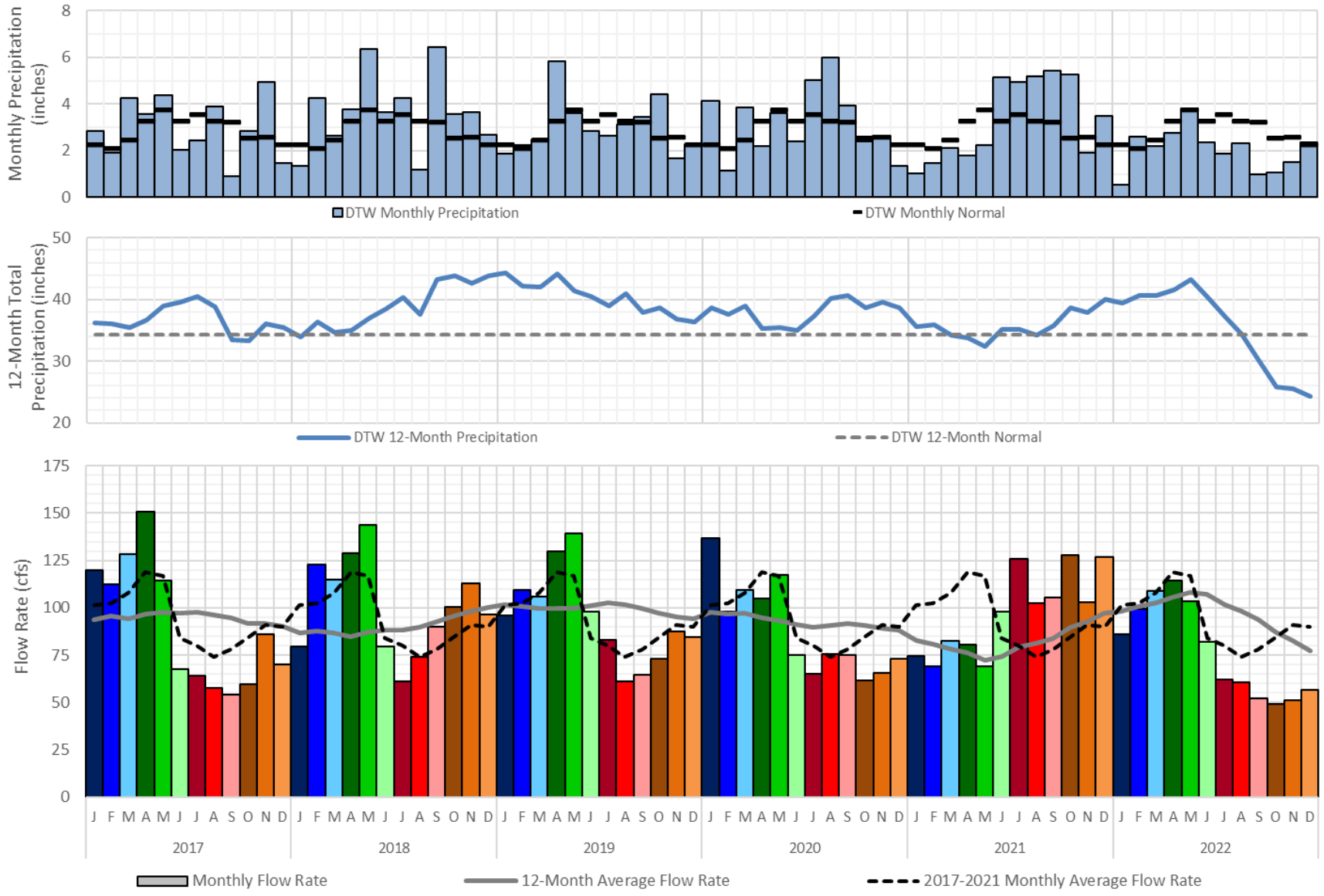


Table 1-1
Rouge Valley Sewage Disposal System
Average Q1 RVSDS Outlet Flow Rate and Total Volume to GLWA for 2017 through 2022

Year & Quarter	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)	Total Flow Volume (MG)	Total Flow Volume (MCF)
2017 Q1	8.99	120.20	6,992	934,600
2018 Q1	8.26	105.15	6,116	817,600
2019 Q1	6.54	103.34	6,011	803,600
2020 Q1	9.14	115.02	6,765	904,400
2021 Q1	4.63	75.66	4,401	588,300
2022 Q1	5.31	98.06	5,704	762,500
2017-2021 Q1 Average	7.51	103.87	6,057	809,700

Table 1-2
Rouge Valley Sewage Disposal System
Average Q2 RVSDS Outlet Flow Rate and Total Volume to GLWA for 2017 through 2022

Year & Quarter	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)	Total Flow Volume (MG)	Total Flow Volume (MCF)
2017 Q2	9.96	111.03	6,530	873,000
2018 Q2	13.8	117.74	6,925	925,700
2019 Q2	12.29	122.49	7,204	963,100
2020 Q2	8.23	99.30	5,841	780,800
2021 Q2	9.18	82.32	4,842	647,200
2022 Q2	8.91	99.86	5,873	785,100
2017-2021 Q2 Average	10.69	106.58	6,268	838,000

Table 1-3
Rouge Valley Sewage Disposal System
Average Q3 RVSDS Outlet Flow Rate and Total Volume to GLWA for 2017 through 2022

Year & Quarter	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)	Total Flow Volume (MG)	Total Flow Volume (MCF)
2017 Q3	7.26	58.66	3,488	466,300
2018 Q3	11.9	74.83	4,449	594,800
2019 Q3	9.21	69.60	4,139	553,300
2020 Q3	14.96	71.95	4,278	571,900
2021 Q3	15.55	111.21	6,613	884,000
2022 Q3	5.17	58.31	3,467	463,500
2017-2021 Q3 Average	11.78	77.25	4,593	614,100

Table 1-4
Rouge Valley Sewage Disposal System
Average Q4 RVSDS Outlet Flow Rate and Total Volume to GLWA for 2017 through 2022

Year & Quarter	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)	Total Flow Volume (MG)	Total Flow Volume (MCF)
2017 Q4	9.25	71.53	4,253	568,600
2018 Q4	9.85	103.29	6,142	821,100
2019 Q4	8.34	81.48	4,845	647,700
2020 Q4	6.4	66.78	3,971	530,800
2021 Q4	10.63	119.28	7,093	948,100
2022 Q4	4.92	52.40	3,116	416,500
2017-2021 Q4 Average	8.89	88.47	5,261	703,300

Table 1-5
Rouge Valley Sewage Disposal System
Average Q1 through Q4 RVSDS Outlet Flow Rate and Total Volume to GLWA for 2017 through 2022

Year & Quarters	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)	Total Flow Volume (MG)	Total Flow Volume (MCF)
2017 Q1-Q4	35.46	90.14	21,263	2,842,500
2018 Q1-Q4	43.81	100.18	23,633	3,159,200
2019 Q1-Q4	36.38	94.10	22,199	2,967,600
2020 Q1-Q4	38.73	88.16	20,855	2,787,900
2021 Q1-Q4	39.99	97.28	22,948	3,067,700
2022 Q1-Q4	24.31	76.98	18,160	2,427,700
2017-2021 Q1-Q4 Average	38.87	93.97	22,180	2,965,000

Figure 1-2
Rouge Valley Sewage Disposal System
Average Q1 RVSDS Outlet Flow Rate to GLWA versus Precipitation at DTW for 2017 through 2022

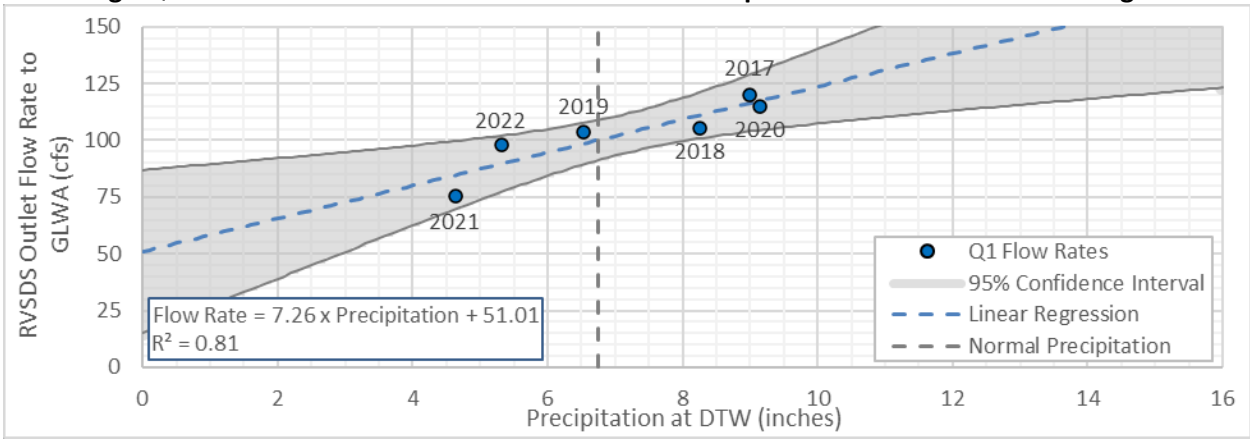


Figure 1-3
Rouge Valley Sewage Disposal System
Average Q2 RVSDS Outlet Flow Rate to GLWA versus Precipitation at DTW for 2017 through 2022

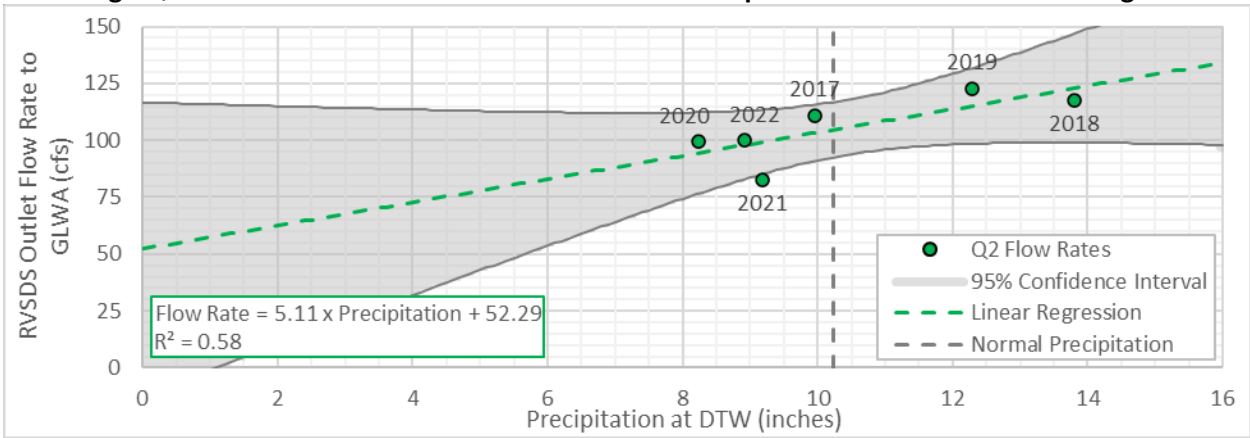


Figure 1-4
Rouge Valley Sewage Disposal System
Average Q3 RVSDS Outlet Flow Rate to GLWA versus Precipitation at DTW for 2017 through 2022

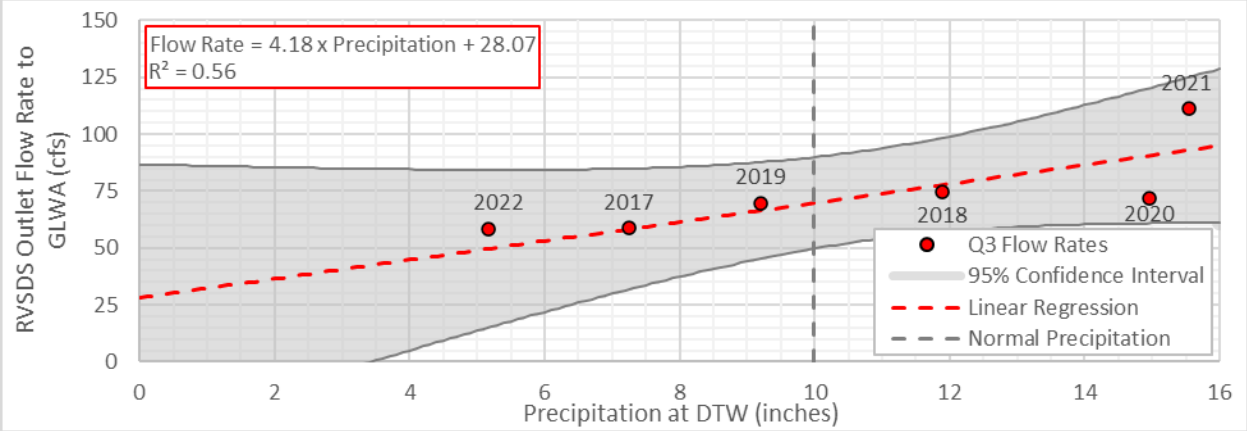


Figure 1-5
Rouge Valley Sewage Disposal System
Average Q4 RVSDS Outlet Flow Rate to GLWA versus Precipitation at DTW for 2017 through 2022

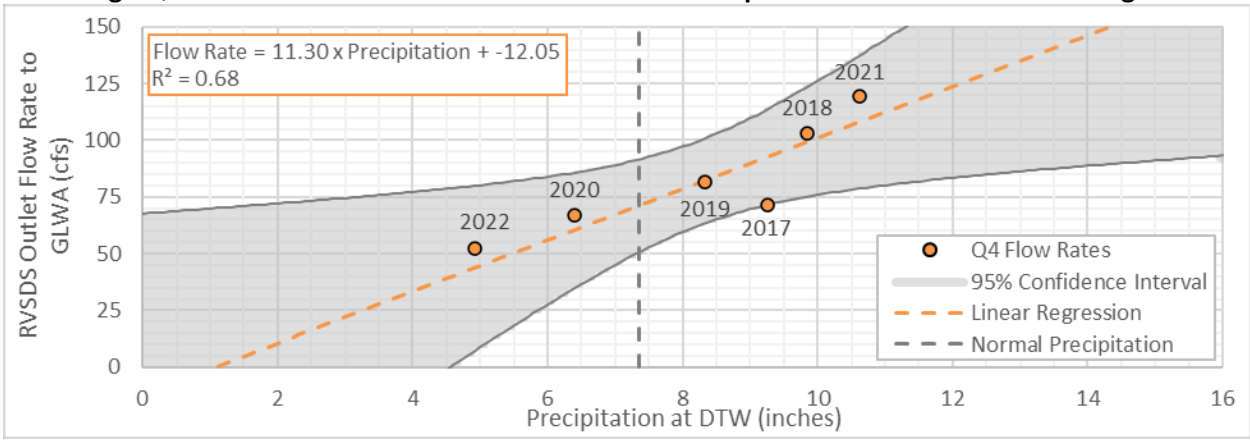


Table 1-6
Rouge Valley Sewage Disposal System
Average Flow Rate and Volume by Customer for 2022

Customer	Estimated Quarterly Average Flow Rate (cfs)				Estimated Annual Average Flow Rate (cfs)	Estimated Annual Flow Volume	
	Q1	Q2	Q3	Q4		(MG)	(MCF)
Oakland County (Novi)	7.36	7.35	6.18	5.67	6.64	1,565	209,200
Plymouth City	3.02	3.33	3.14	3.46	3.24	764	102,100
Northville City	1.89	1.88	1.62	1.76	1.79	421	56,300
Garden City	6.29	6.45	3.06	2.94	4.67	1,102	147,300
Livonia	24.39	25.11	15.60	13.51	19.61	4,627	618,500
Westland	16.77	16.81	10.42	9.75	13.41	3,164	422,900
Redford Twp	11.08	10.96	6.08	4.87	8.23	1,940	259,400
Dearborn Heights	9.17	10.38	5.36	5.78	7.65	1,806	241,400
Van Buren Twp	1.52	1.58	1.12	1.09	1.33	313	41,800
Romulus	0.48	0.44	0.42	0.39	0.43	102	13,600
Wayne	5.14	5.09	3.33	3.32	4.21	994	132,900
Inkster	5.46	5.34	2.46	2.10	3.83	903	120,700
WCAA	0.52	0.57	0.00	0.00	0.27	64	8,600
Sum of Customer Flow Rates	93.09	95.29	58.80	54.63	75.30	17,764	2,374,700
Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3]	98.06	99.86	58.31	52.40	76.98	18,160	2,427,700

Notes:
1. cfs = Cubic Feet per Second
2. MG = Million Gallons
3. MCF = Thousand Cubic Feet

D) Significant Storm Events

1) There were five (5) significant storm events during year 2022. The events were designated as Significant Storm Events 1 through 5 for 2022. A rainfall summary for year 2022 significant storm events is presented in Table 5-15. Total rainfall values for each rain gauge and each event are presented in Tables 5-16 through 5-20.

   - Significant Storm Event 1 occurred on February 16-18, 2022 and had an average rainfall of 1.00 inches over the service area.
   - Significant Storm Event 2 occurred on April 22-25, 2022 and had an average rainfall of 1.15 inches over the service area.
   - Significant Storm Event 3 occurred on June 6-9, 2022 and had an average rainfall of 1.84 inches over the service area.
   - Significant Storm Event 4 occurred on July 5-8, 2022 and had an average rainfall of 1.15 inches over the service area.
   - Significant Storm Event 5 occurred on August 3-5, 2022 and had an average rainfall of 1.43 inches over the service area.

2) Figures 1-6 through 1-10 show the RVSDS outlet meter flow rates for Significant Storm Events 1 through 5. For year 2022, the peak rolling hourly average flow rate to GLWA was 279 cfs and occurred during Significant Storm Event 2, on April 23, 2022.

3) A summary of maximum allowable flow limit exceedances by community during significant storm events for 2022 are listed in Table 1-7. Dearborn Heights, Garden City and Inkster exceeded the maximum allowable flow limits (MAFLs) for at least one significant storm event in 2022. Livonia, Northville City, Oakland County (Novi), Plymouth City, Redford Township, Romulus, Van Buren Township, Wayne and Westland did not exceed the MAFLs for any of the significant storm events in 2022.

4) Table 1-8 lists the peak flow rates and estimated flood frequencies on the Middle and Lower Rouge Rivers for each significant storm event in 2022. For year 2022, the highest peak flow rate and return frequency on the Middle Rouge River occurred during Significant Storm Event 1, on February 18, 2022. The estimated flood frequency for the Middle Rouge River for this event was about 1-year. For year 2022, the highest peak flow rate and return frequency on the Lower Rouge River occurred after Significant Storm Event 1, on February 18, 2022. The estimated flood frequency for the Lower Rouge River for this event was about 7-month.

Figure 1-6
Rouge Valley Sewage Disposal System
Outlet Meter Flow Rates for Significant Storm Event 1

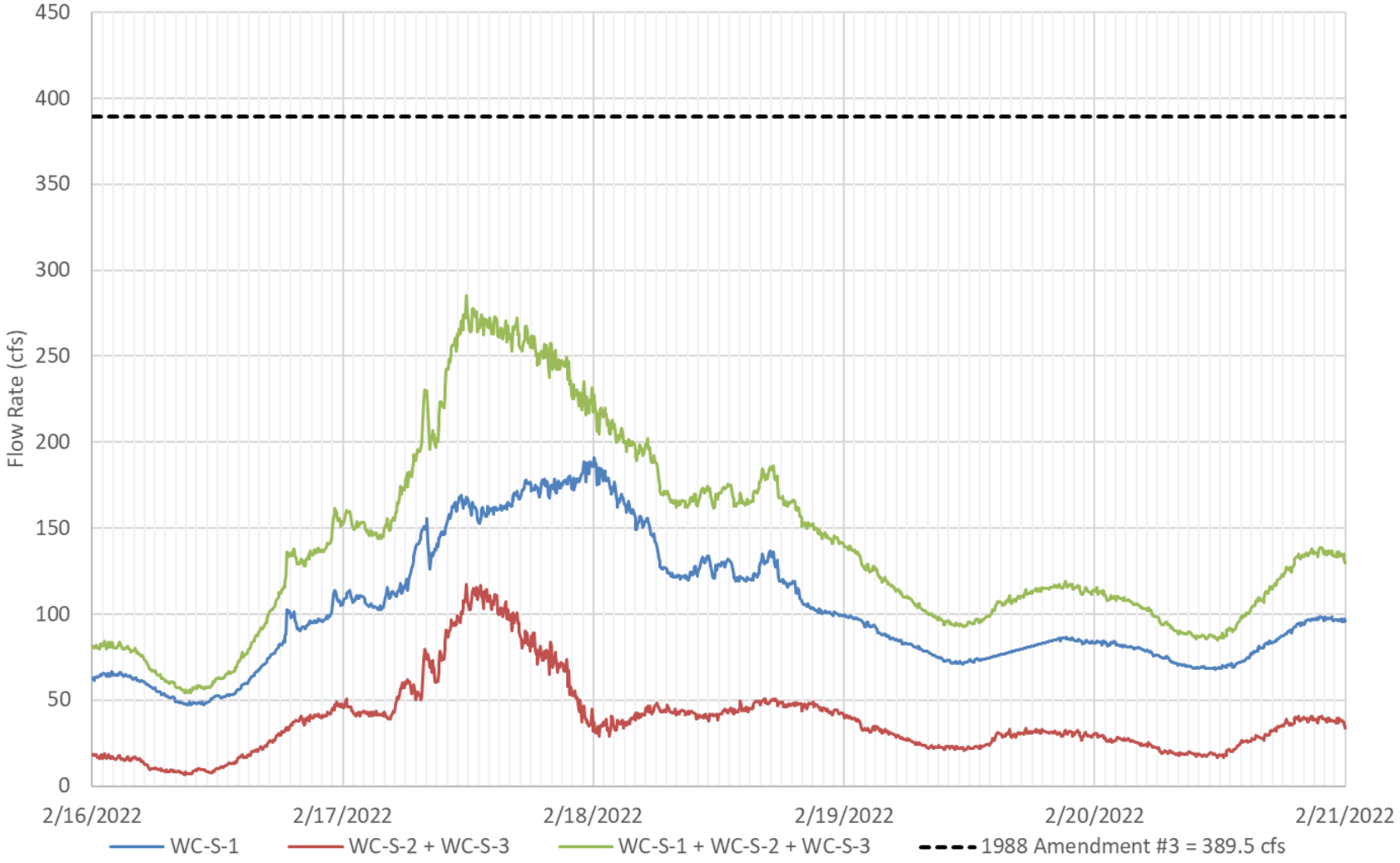


Figure 1-7
Rouge Valley Sewage Disposal System
Outlet Meter Flow Rates for Significant Storm Event 2

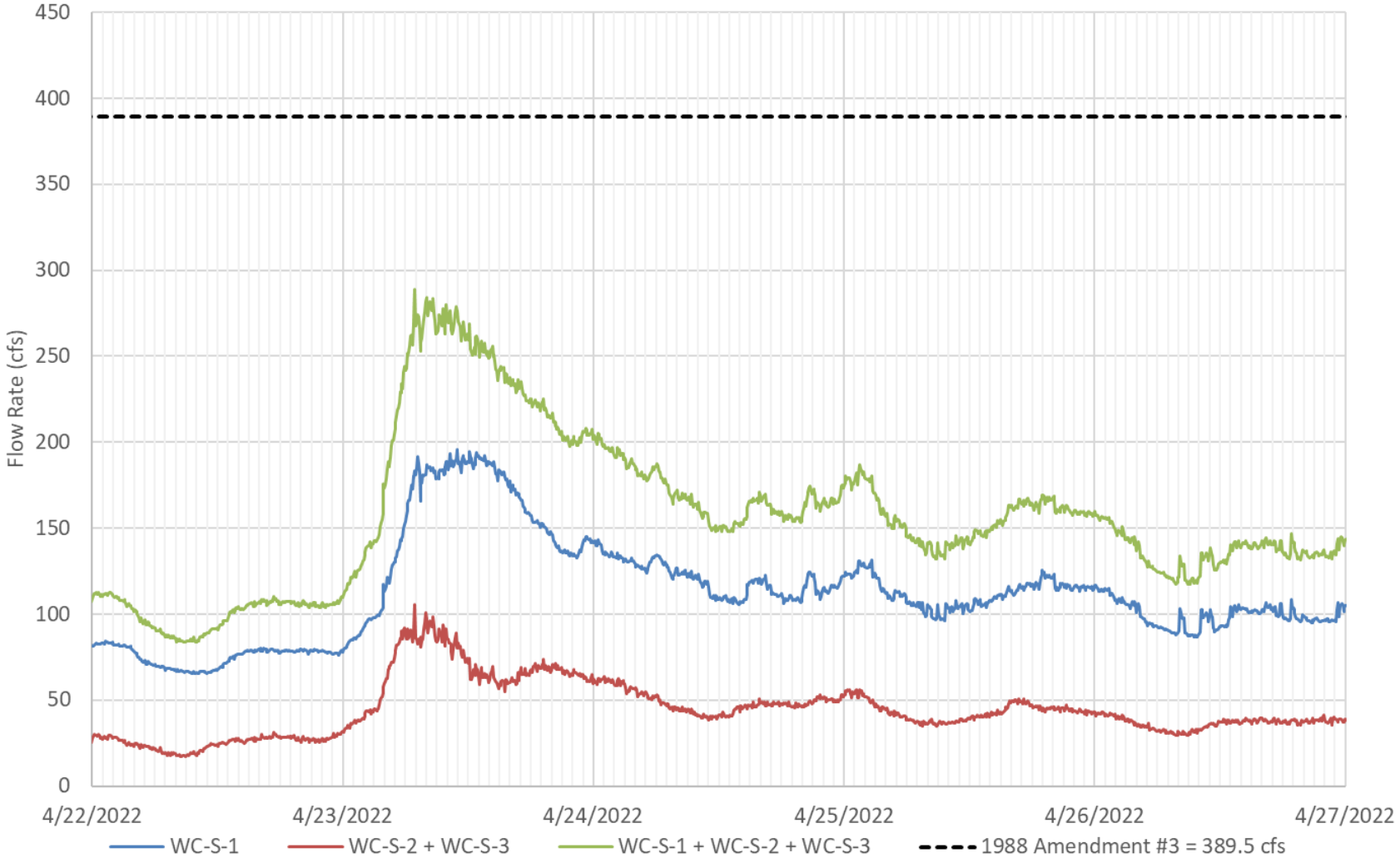


Figure 1-8
Rouge Valley Sewage Disposal System
Outlet Meter Flow Rates for Significant Storm Event 3

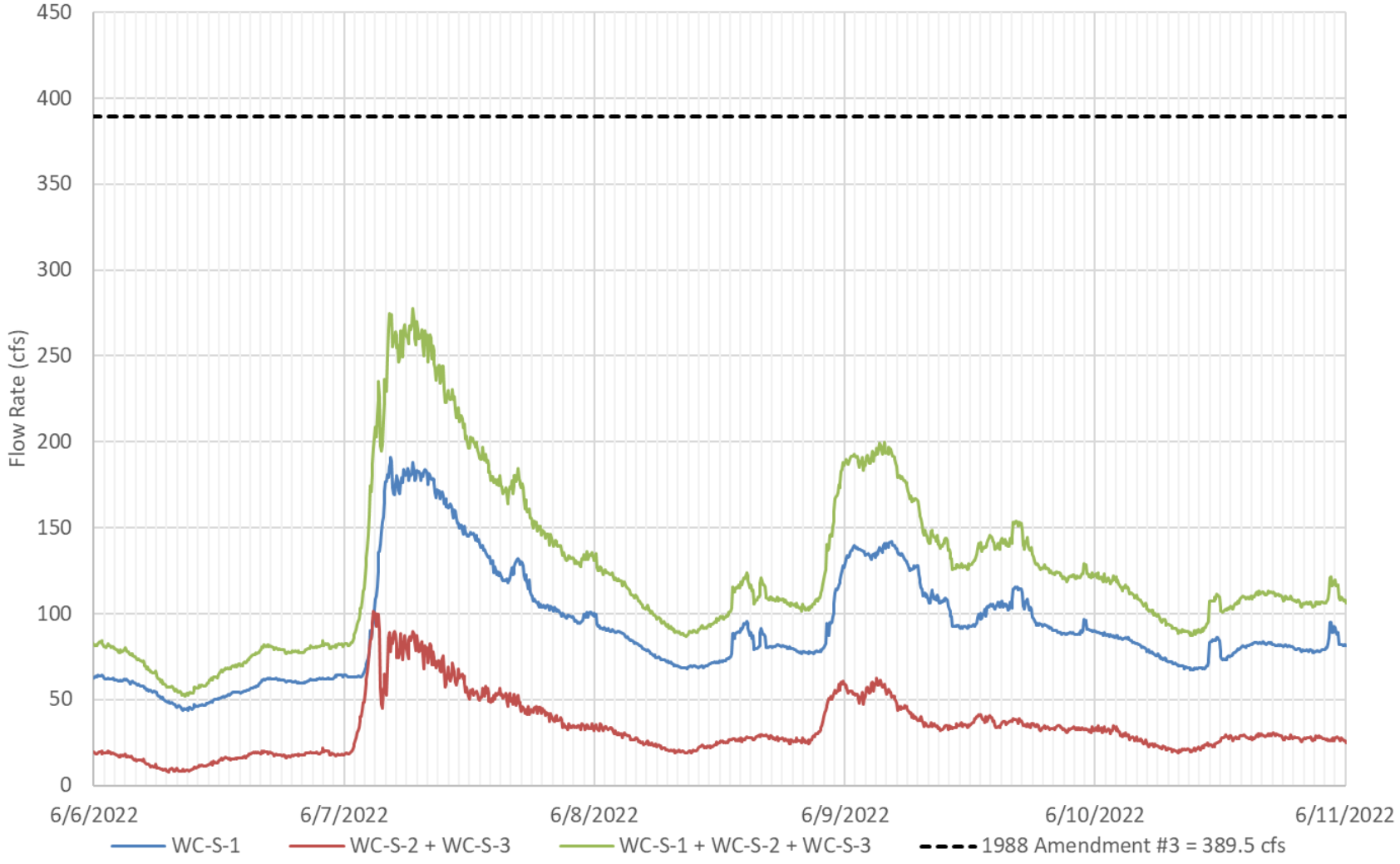


Figure 1-9
Rouge Valley Sewage Disposal System
Outlet Meter Flow Rates for Significant Storm Event 4

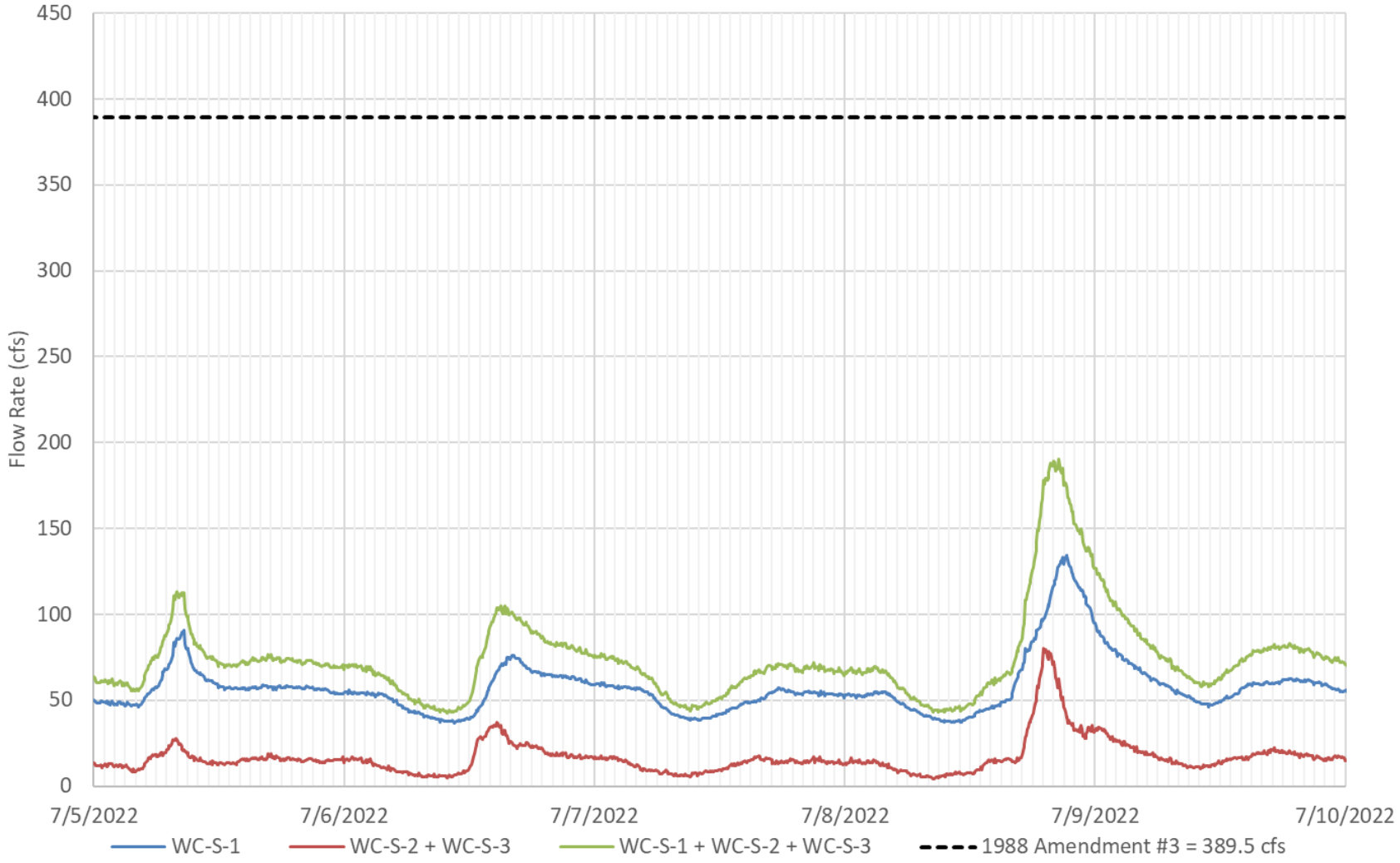


Figure 1-10
Rouge Valley Sewage Disposal System
Outlet Meter Flow Rates for Significant Storm Event 5

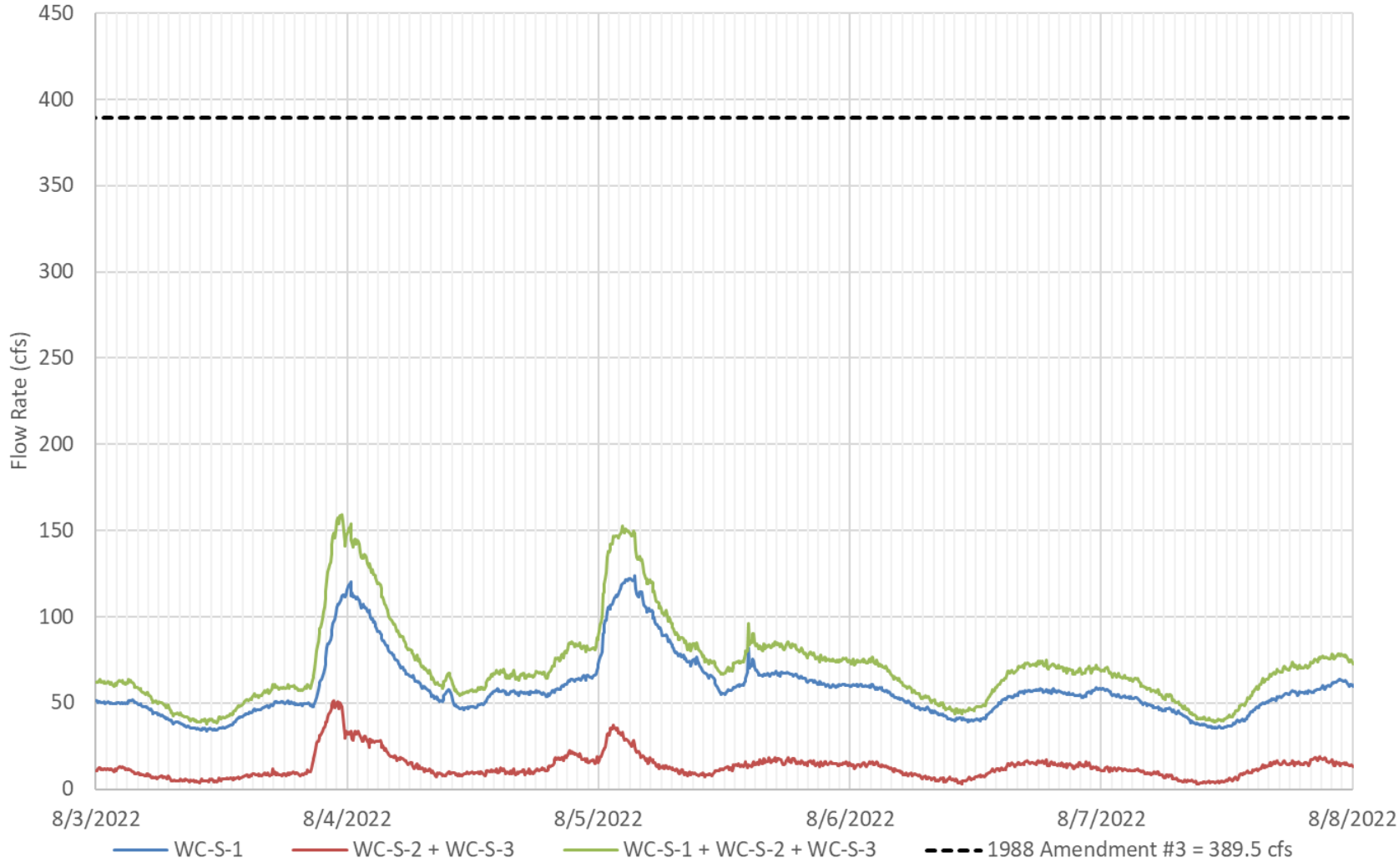


Table 1-7
Rouge Valley Sewage Disposal System
Maximum Allowable Flow Limit Exceedances for Significant Storm Events in 2022

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
1	February 16-18, 2022	0.98	-	-	-	✓	-	-	-	-	-	-	-	✓
2	April 22-25, 2022	1.15	-	-	-	✓	-	-	-	✓	-	-	-	-
3	June 6-9, 2022	1.84	-	-	-	✓	-	-	-	✓	-	-	-	✓
4	July 5-8, 2022	1.15	-	-	-	-	-	-	-	-	-	-	-	-
5	August 3-5, 2022	1.43	-	-	-	-	-	-	-	-	-	-	-	-
Total			0/5	0/5	0/5	3/5	0/5	0/5	0/5	2/5	0/5	0/5	0/5	2/5

Legend:

✓	Maximum Allowable Flow Limit Exceeded
x	Flow meter data does not show a Maximum Allowable Flow Limit exceedance but peak hourly flow rates are underestimated due to SSO and an exceedance may have occurred
-	Maximum Allowable Flow Limit Not Exceeded

Table 1-8
Rouge Valley Sewage Disposal System
Rouge River Flood Frequency for Significant Storm Events in 2022

Significant Storm Event		Peak 15-minute Flow Rate (cfs)		Estimated Flood Frequency[2]	
Event No.	Date	Middle Rouge USGS Gage #04167000	Lower Rouge USGS Gage #04168400	Middle Rouge USGS Gage #04167000	Lower Rouge USGS Gage #04168400
1	February 16-18, 2022	944	937	1 - year	7 - month
2	April 22-25, 2022	751	857	6 - month	6 - month
3	June 6-9, 2022	570	627	4 - month	3 - month
4	July 5-8, 2022	414	289	2 -month	< 1 - month
5	August 3-5, 2022	368	351	2 -month	< 1 - month
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.

E) GLWA Outlet Meters

1) Flow Meters WC-S-1, WC-S-2 and WC-S-3 are owned and operated by the GLWA. Meters WC-S-1, WC-S-2 and WC-S-3 were replaced with new equipment installed in new locations and GLWA is actively working to calibrate the performance of these flow meters.

   i) GLWA and Wayne County agreed to implement a common data estimation methodology for WC-S-1, WC-S-2 and WC-S-3 missing data as of GLWA fiscal year 2017 (starting on July 1, 2016 at 12:00 AM) and continuing into the future. 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 System Monitoring Plan* dated February 25, 2020.

   ii) GLWA and Wayne County executed a data sharing agreement on January 13, 2020. Wayne County provides GLWA with the necessary RVSDS meter data to implement the new data estimation methodology on a monthly basis.

   iii) GLWA publishes monthly "compiled" data for WC-S-1, WC-S-2, and WC-S-3 on the GDRSS portal based on daily average flow rate values (i.e., 24-hour time increment) using the agreed upon methodology to estimate missing data. GLWA has confirmed that the "Annual Compiled" data to be published on the GDRSS portal for WC-S-1, WC-S-2 and WC-S-3 will be daily average values, with missing data estimated based on the correlation with upstream RVSDS meter data per the agreed upon flow rate estimation methods.

   iv) Wayne County estimates missing flow rate data for Meters WC-S-1, WC-S-2 and WC-S-3 using the agreed upon methodology of correlations to upstream RVSDS meters. The missing flow rate data is estimated in 5-minute increments. The increased level of detail provided by the Wayne County estimated data is important for estimating peak hourly flow rates during significant storm events. Meters WC-S-1, WC-S-2 and WC-S-3 flow rates were estimated with the correlations from January 1, 2022 through December 31, 2022.

   v) GLWA has replaced the defunct Meters WC-S-1, WC-S-2 and WC-S-3 which were owned by Wayne County. The new flow metering equipment is owned by GLWA, and the meters are installed in new locations. Replacement was completed in calendar year 2021. GLWA calibrated these flow meters in calendar year 2022. These flow meters are now accepted by GLWA as the official monitoring points for RVSDS.

   vi) Data from these new meters will be used in the 2023 Q1 system monitoring report and future quarterly and annual system monitoring reports. The correlations to the upstream RVSDS meters will continue to be used to evaluate the performance of these new meters.

2.0 Monitoring Network

Figure 2-1 is a schematic of the RVSDS interceptors. Appendix A contains the detailed RVSDS interceptor schematics A1 through A8 which show the interceptor and flow meter locations. Figure 2-2 shows the RVSDS meter districts and line connections areas. Figure 2-3 shows the RVSDS rain gauge network used to evaluate the wet weather monitoring data. The entities which operate and maintain the RVSDS system monitoring flow meters and rain gauges are listed in Tables 2-1 and 2-2, respectively.

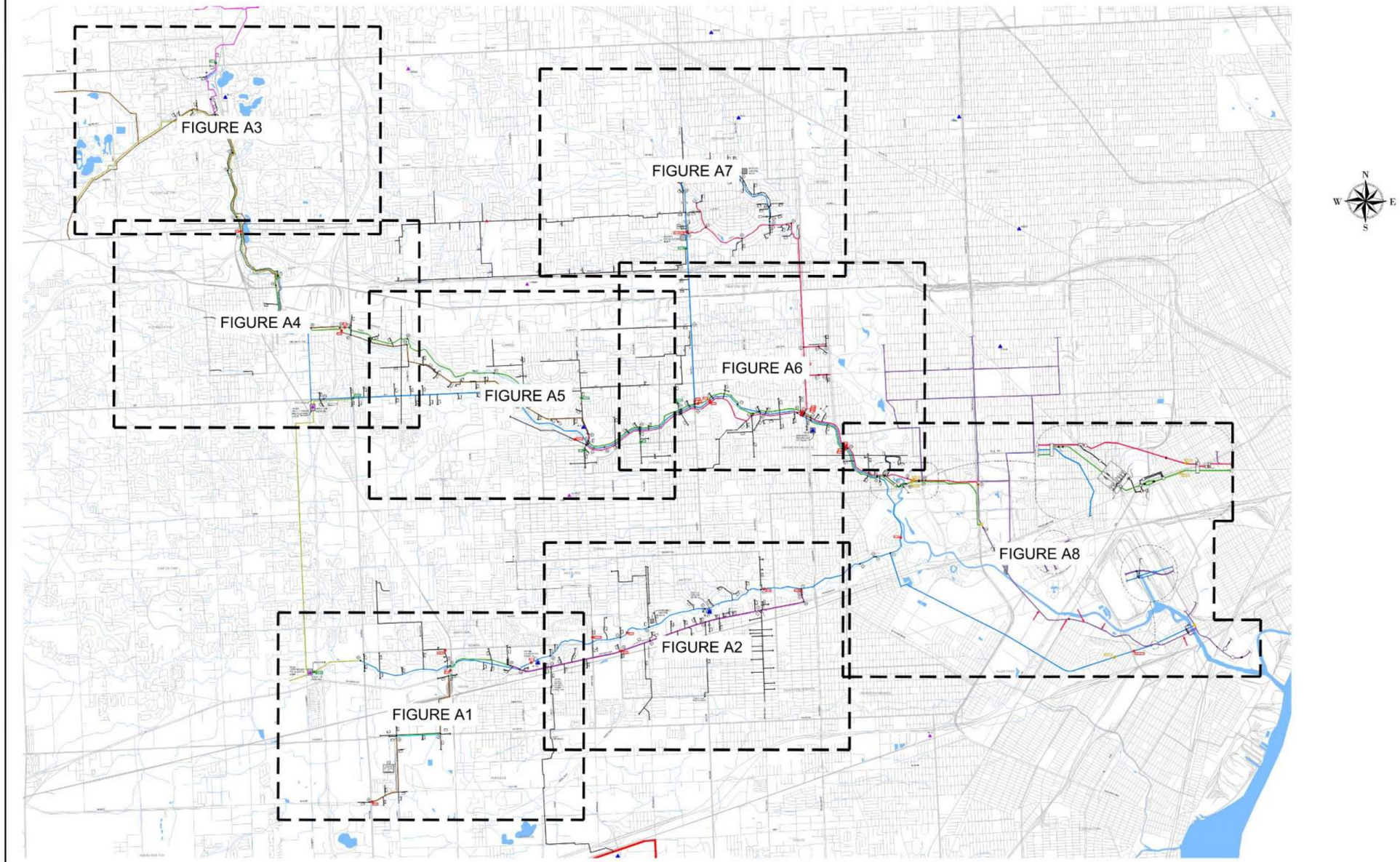
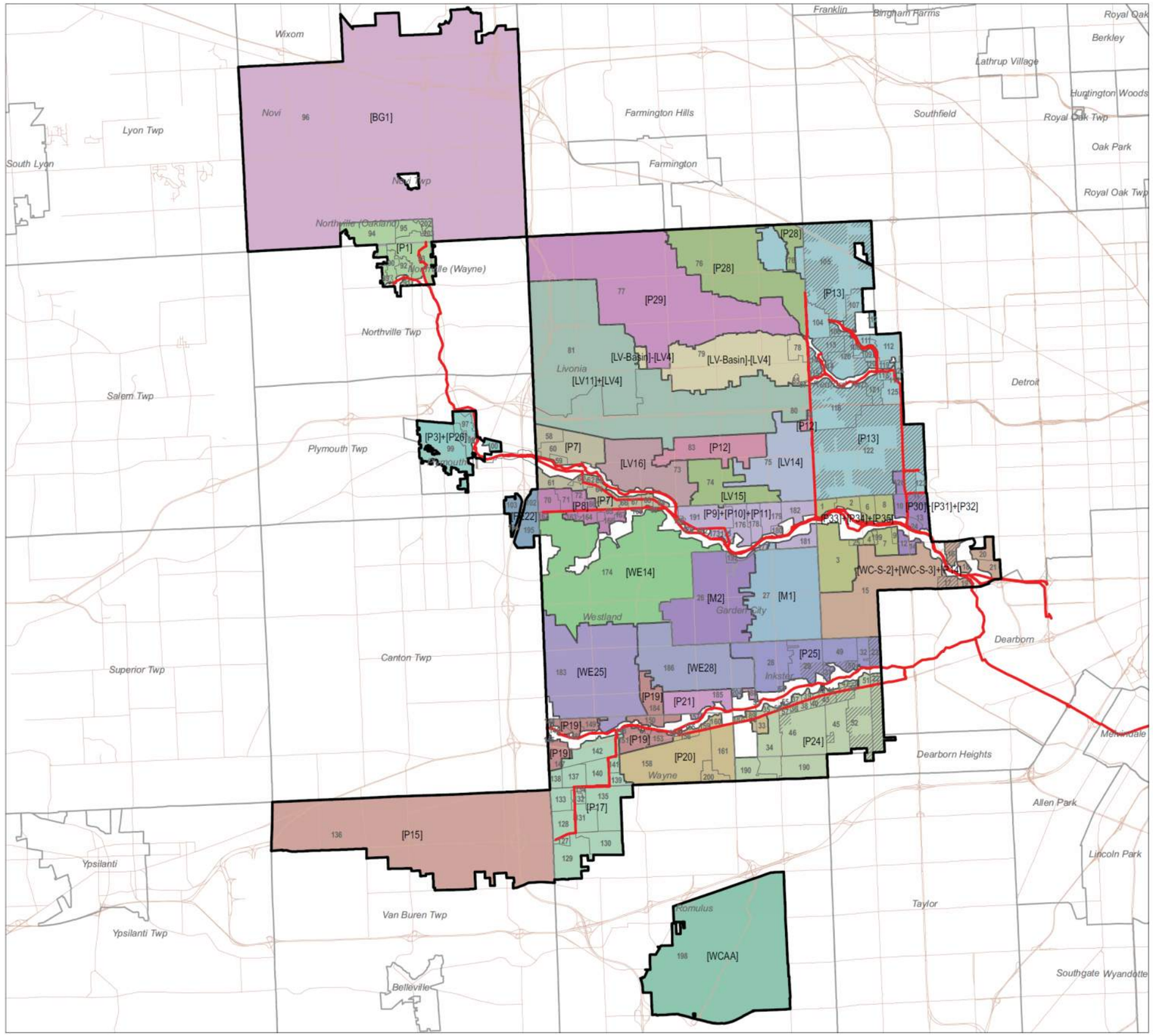


FIGURE 2-1
ROUGE VALLEY SEWAGE DISPOSAL SYSTEM
INTERCEPTOR SCHEMATIC

SYSTEM
MONITORING
INDEX SHEET

REVISION DATE: DECEMBER 8, 2022



Rouge Valley
Sewage Disposal System

N
W E
S

0 0.5 1 2 3 4 Miles

Legend

- Interceptor
- [P1] Meter District
- 1 Line Connection Area
- Combined Area
- Community Boundary
- Service Area Boundary
- Roads

Figure 2-2
Meter District and
Line Connection Areas

Prepared By:

Applied Science, Inc.

REVISION DATE: OCTOBER 7, 2019

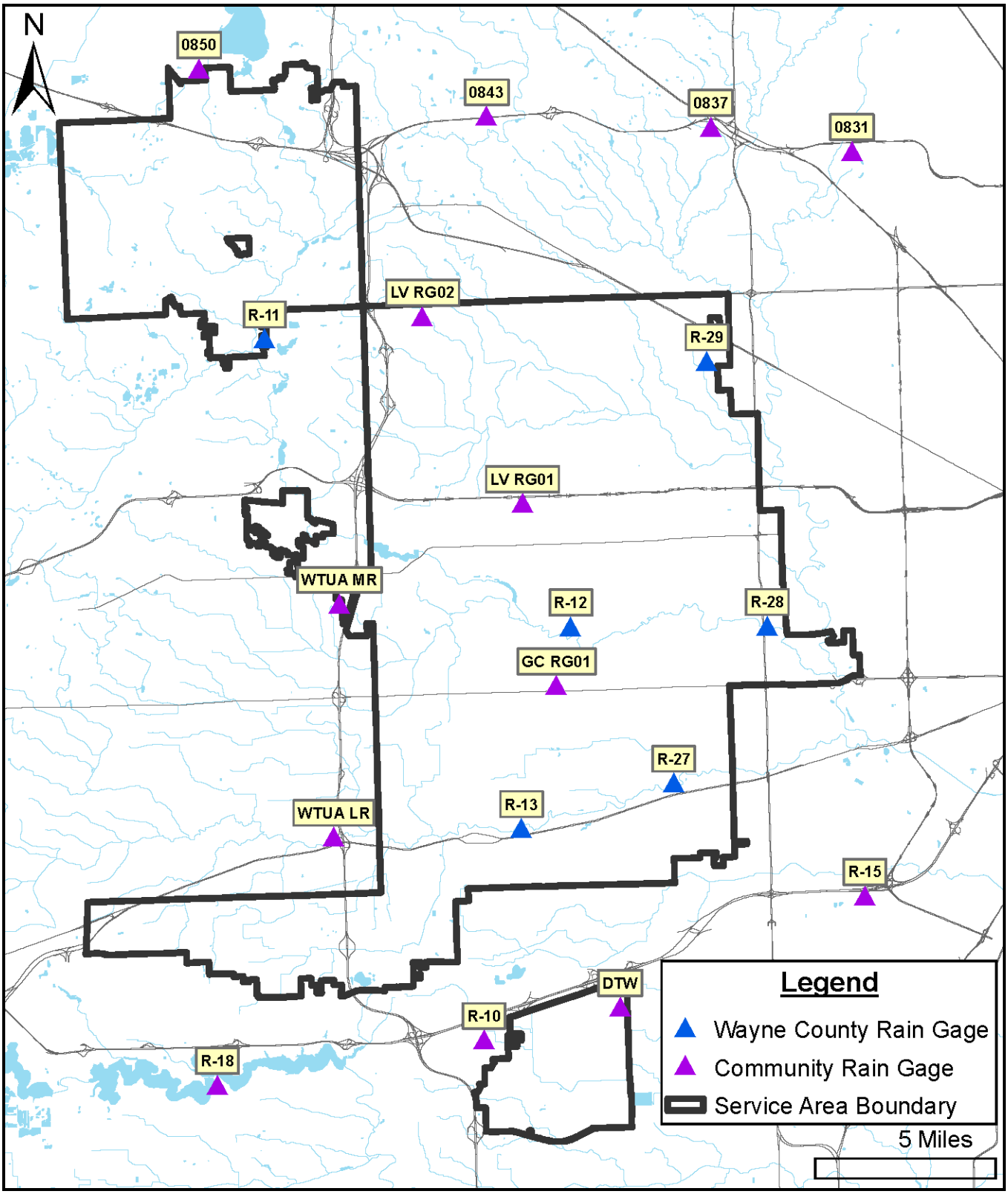


Figure 2-3
Rouge Valley Sewage Disposal System
Rain Gage Location Map

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

Operated By		Flow Meter
Wayne County		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 WRC[1]	BG-1
	WTUA[2]	FE-19 & FE-22
	WCAA[3]	Pond 3 West to RVSDS
GLWA[4]		WC-S-1, WC-S-2 & WC-S-3

Notes:

1) Oakland County Water Resources Commissioner (WRC)
2) Western Townships Utilities Authority (WTUA)
3) Wayne County Airport Authority (WCAA)
4) Great Lakes Water Authority (GLWA) owns and operates the RVSDS outlet meters

Table 2-2
Rouge Valley Sewage Disposal System
Rain Gages

Operated By	Rain Gage	Location
Wayne County	R-11	650 Doheny Drive, Northville
	R-12	7651 Merriman Road, Westland
	R-13	3301 Josephine Street, Wayne
	R-27	2001 Inkster Road, Inkster
	R-28	23800 Hines Drive, Dearborn Heights
	R-29	18300 Beech Daly Road, Redford
DUWA[1]	R-10	11111 Wayne Road, Romulus
	R-15	20195 Trolley, Taylor
	R-18	130 4th Street, Belleville
Livonia	LV RG01	Schoolcraft Road, Livonia
	LV RG02	Whispering Willows Golf Course, Livonia
Garden City	GC RG01	Moeller Park, Garden City
NOAA[2]	DTW	Wayne County Metro Airport, Romulus
Oakland County WRC[3]	0831	19625 Middlesex Street, Southfield
	0837	25515 Clara Lane, Southfield
	0843	34189 12 Mile Road, Farmington Hills
	0850	46351 West Road, Walled Lake
WTUA	WTUA LR	3501 Haggerty Road, Canton
	WTUA MR	40905 Joy Road, Plymouth

Notes:

1) Downriver Utility Wastewater Authority (DUWA) transferred from Wayne County (effective September 27, 2018)
2) National Oceanic and Atmospheric Administration (NOAA)
3) Oakland County Water Resources Commissioner (WRC)

3.0 Flow Rate at Key Locations

Table 3-1 lists the estimated average monthly flow rate at key locations in the RVSDS for each month in 2022. The average monthly flow rate includes all days – both dry and wet weather. Table 3-2 lists the estimated average monthly dry weather flow rate at key locations in the RVSDS for each month in 2022. The Year 2020 residential population is given on Tables 3-1 and 3-2 and it is used to estimate per-capita flow rates.

Figure 3-1 shows the long-term total flow rate trends at key locations in the RVSDS by month from 2017 through 2022. Figure 3-2 shows the long-term dry weather flow rate trends at key locations in the RVSDS by month from 2017 through 2022. The flow rates at key locations are based on the sewage flow meter math provided on Tables 3-1 and 3-2. The solid lines show the average monthly flow rates, and the dashed lines show the 2017-2021 average monthly flow rate. These figures show the seasonal variations in flow rates.

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 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.

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

Branch	Sewage Flow Meter	Year 2020 Residential Population	Total Developed Land (acres)	Monthly Average Incremental Flow Rate (cfs)												Estimated Annual Average Incremental Flow Rate	
				Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	(cfs)	(gallons / capita / day)
Middle Rouge at Inkster Road	[P-9] + [P-10] + [P-11]	232,937	38,494	44.1	48.3	54.7	56.4	50.8	42.0	33.3	33.2	28.8	27.2	27.1	29.7	39.6	110
Middle Rouge Outlet	[WC-S-2] + [WC-S-3] + [P-14]	324,189	46,362	60.6	69.5	77.6	80.7	72.7	59.7	46.3	44.8	38.6	36.5	37.9	41.6	55.4	111
Lower Rouge Outlet	[P-24] + [P-25] - [WCAA]	97,068	15,976	18.5	22.7	22.7	23.8	22.7	17.0	12.3	12.5	10.8	10.4	10.7	12.2	16.3	109
RVSDS Outlet	[WC-S-1] + [WC-S-2] + [WC-S-3] - [WCAA]	421,257	62,339	85.2	99.4	108.2	112.9	103.0	81.9	62.0	60.7	52.1	49.3	51.1	56.8	76.7	118

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

Branch	Sewage Flow Meter	Year 2020 Residential Population	Total Developed Land (acres)	Monthly Average Incremental Dry Weather Flow Rate (cfs)												Estimated Annual Average Incremental Dry Weather Flow Rate	
				Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	(cfs)	(gallons / capita / day)
Middle Rouge at Inkster Road	[P-9] + [P-10] + [P-11]	232,937	38,494	43.6	40.8	49.9	51.9	47.5	38.5	31.9	31.4	28.4	27.0	26.6	27.9	37.1	103
Middle Rouge Outlet	[WC-S-2] + [WC-S-3] + [P-14]	324,189	46,362	59.9	56.2	70.0	73.7	67.1	52.6	43.7	41.4	37.9	36.2	36.8	38.4	51.1	102
Lower Rouge Outlet	[P-24] + [P-25] - [WCAA]	97,068	15,976	18.4	17.7	20.6	20.9	19.6	14.6	11.3	11.0	10.4	10.3	10.2	11.0	14.6	97
RVSDS Outlet	[WC-S-1] + [WC-S-2] + [WC-S-3] - [WCAA]	421,257	62,339	84.2	79.2	97.6	102.0	93.5	71.7	58.2	55.4	50.8	48.8	49.3	51.9	70.2	108

Figure 3-1
Rouge Valley Sewage Disposal System
Monthly Average Flow Rates at Key Locations for 2017 through 2022

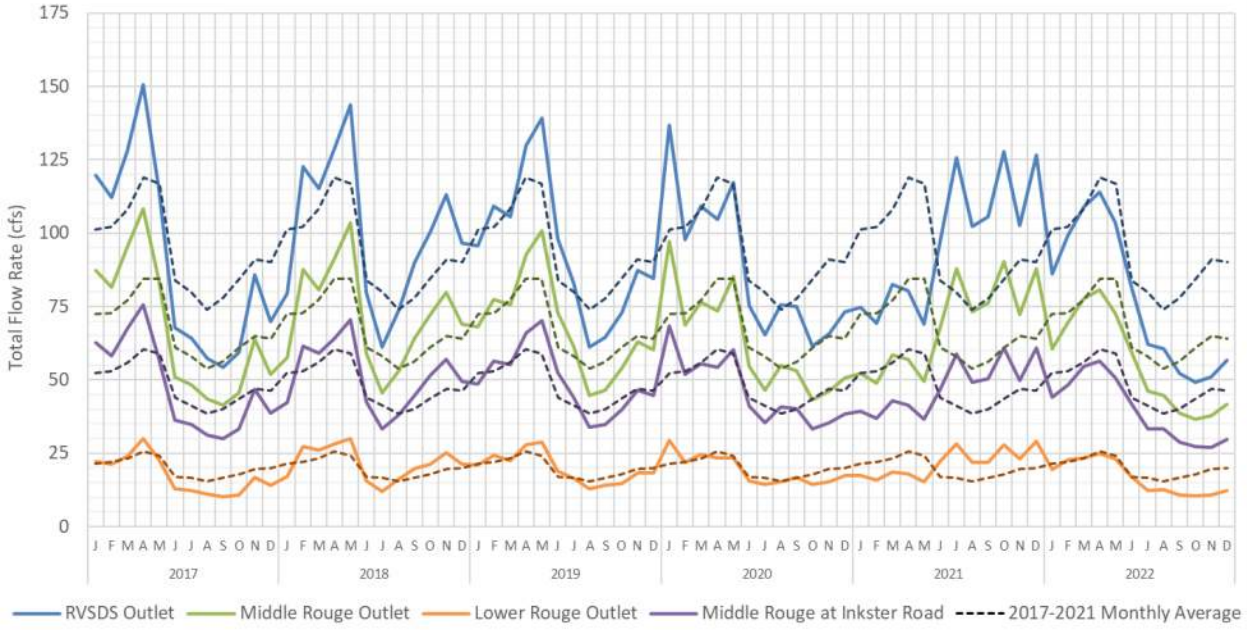
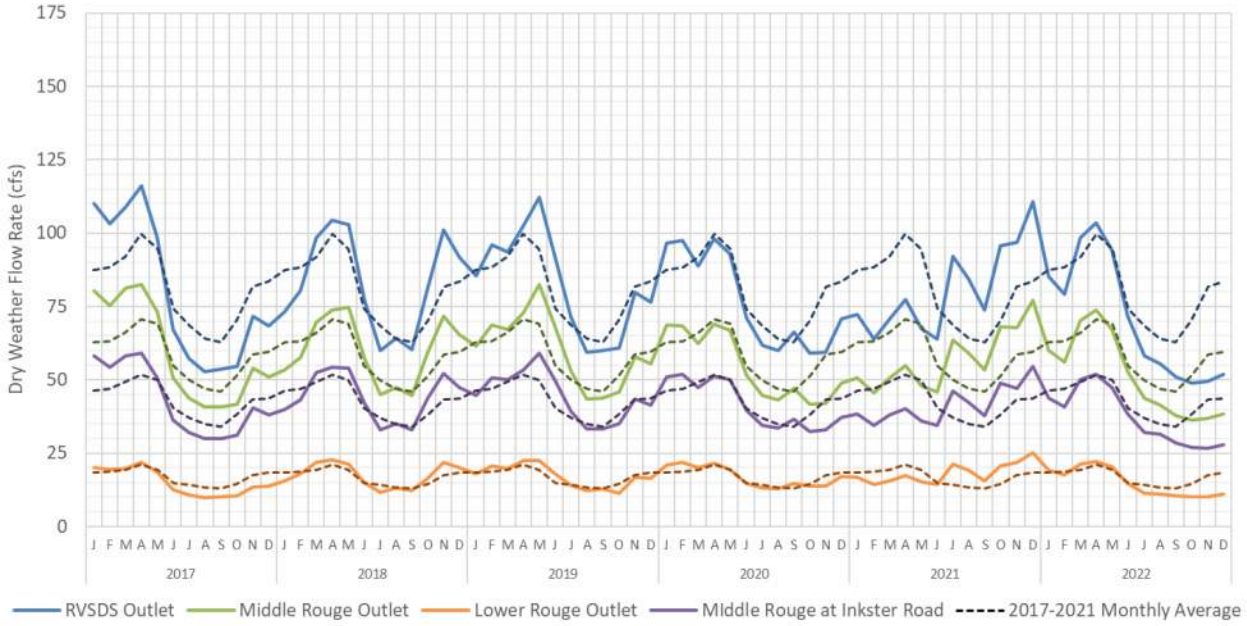


Figure 3-2
Rouge Valley Sewage Disposal System
Monthly Average Dry Weather Flow Rates at Key Locations for 2017 through 2022



4.0 Customer Flow Summaries

Table 4-1 lists the estimated average monthly flow rate for each community in the RVSDS for each month in 2022. The average monthly flow rate includes all days – both dry and wet weather. Table 4-2 lists the estimated average monthly dry weather flow rate for each community in the RVSDS for each month in 2022. The Year 2020 residential population is given on these tables and it is used to estimate per-capita flow rates. The sewage flow meter math is based on Year 2020 population and is listed on these tables for each community. The estimated average monthly flow rates listed in Table 4-1 are plotted on Figure 4-1.

For each significant storm event, maximum hourly wet weather flow rates for each community are estimated using the flow monitoring data set. These flow rates are compared to the MAFLs to check if any community exceeded its MAFL. Tables 4-3 through 4-7 lists the peak hourly flow rates for each community. Exceedences of the MAFLs are highlighted (if any).

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 2020 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-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	(cfs)	(gallons / capita / day)	
Oakland County (Novi)	[BG-1]	51,761	12,473	20.48	7.09	7.22	7.74	7.88	7.45	6.72	6.25	6.29	6.00	5.69	5.31	6.01	*6.64*	*83*	*7.88*
Plymouth City	[P-3] + [P-26] - [P-1] + [FE-22]	9,352	968	15.80	3.09	2.79	3.16	3.43	3.30	3.25	3.35	3.34	2.73	3.03	3.09	4.24	*3.24*	*224*	*4.24*
Northville City	[P-1] - [BG-1]	6,315	913	7.61	1.83	1.85	1.97	2.00	1.91	1.74	1.63	1.64	1.57	1.62	2.09	1.58	*1.79*	*183*	*2.09*
Garden City	[M-1] + 94.3%[M-2]	27,381	2,796	24.40	4.88	6.75	7.28	7.80	6.49	5.05	3.16	3.22	2.79	2.62	2.79	3.40	*4.67*	*110*	*7.80*
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	95,519	16,928	106.52	22.02	23.43	27.63	28.57	25.92	20.82	17.05	16.27	13.42	13.00	13.24	14.27	*19.61*	*133*	*28.57*
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	85,415	9,274	80.04	15.54	16.66	18.10	18.67	17.52	14.23	11.03	10.49	9.72	9.49	9.61	10.15	*13.41*	*101*	*18.67*
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	48,122	4,703	52.89	9.63	10.99	12.62	12.74	11.38	8.73	6.41	6.60	5.20	4.51	4.64	5.46	*8.23*	*110*	*12.74*
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	43,645	3,156	65.47	6.90	10.39	10.33	11.61	10.58	8.94	6.55	4.93	4.57	4.78	6.16	6.40	*7.65*	*113*	*11.61*
Van Buren Twp	[P-15]	7,363	4,471	5.00	1.34	1.56	1.67	1.74	1.66	1.34	1.14	1.11	1.11	1.08	1.11	1.08	*1.33*	*116*	*1.74*
Romulus	38.0%{[P-17] - [P-15]}	2,691	1,562	3.60	0.48	0.45	0.51	0.45	0.40	0.45	0.32	0.51	0.43	0.39	0.32	0.44	*0.43*	*103*	*0.51*
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	17,712	2,517	27.92	4.69	5.26	5.48	5.54	5.37	4.34	3.24	3.47	3.29	3.33	3.12	3.51	*4.21*	*154*	*5.54*
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	25,981	2,578	26.66	4.32	6.58	5.61	6.09	5.89	4.03	2.77	2.70	1.89	1.68	2.00	2.60	*3.83*	*95*	*6.58*
WCAA	[WCAA]	--	4,881	1.50	0.96	0.00	0.56	1.23	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	*0.27*	--	*1.23*
Row A) Sum of Customer Flow Rates (cfs):					**82.75**	**93.94**	**102.66**	**107.76**	**98.37**	**79.64**	**62.91**	**60.56**	**52.73**	**51.23**	**53.48**	**59.14**	**75.30**	**--**	***107.76***
Row B) Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3] (cfs):					**86.15**	**99.39**	**108.77**	**114.12**	**103.46**	**81.87**	**61.97**	**60.70**	**52.06**	**49.29**	**51.08**	**56.80**	**76.98**	**--**	***114.12***

Notes:
1. Sewage flow meter math for some customers based on 2020 Census populations.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.

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 2020 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-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	(cfs)	(gallons / capita / day)	
Oakland County (Novi)	[BG-1]	51,761	12,473	20.48	7.08	6.90	7.31	7.68	7.31	6.60	6.19	6.18	5.98	5.72	5.27	5.94	*6.51*	*81*	*7.68*
Plymouth City	[P-3] + [P-26] - [P-1] + [FE-22]	9,352	968	15.80	3.06	2.71	2.94	3.26	3.19	3.20	3.29	3.18	2.71	3.03	3.11	4.17	*3.16*	*218*	*4.17*
Northville City	[P-1] - [BG-1]	6,315	913	7.61	1.82	1.78	1.88	1.96	1.88	1.71	1.62	1.62	1.57	1.60	2.10	1.56	*1.76*	*180*	*2.10*
Garden City	[M-1] + 94.3%[M-2]	27,381	2,796	24.40	4.78	4.87	6.23	6.50	5.54	4.25	2.93	2.80	2.65	2.56	2.59	2.85	*4.04*	*95*	*6.50*
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	95,519	16,928	106.52	21.73	19.94	25.23	26.74	24.32	19.05	16.32	15.36	13.24	12.94	13.06	13.58	*18.45*	*125*	*26.74*
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	85,415	9,274	80.04	15.39	14.64	17.09	17.32	16.51	13.14	10.68	10.01	9.60	9.46	9.43	9.69	*12.74*	*96*	*17.32*
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	48,122	4,703	52.89	9.48	8.63	11.46	12.04	10.54	7.75	5.68	5.71	5.05	4.50	4.39	4.79	*7.50*	*101*	*12.04*
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	43,645	3,156	65.47	6.78	6.81	8.60	9.70	9.01	6.40	6.04	4.26	4.38	4.60	5.80	5.68	*6.50*	*96*	*9.70*
Van Buren Twp	[P-15]	7,363	4,471	5.00	1.33	1.38	1.54	1.62	1.55	1.26	1.11	1.08	1.09	1.07	1.10	1.05	*1.26*	*111*	*1.62*
Romulus	38.0%{[P-17] - [P-15]}	2,691	1,562	3.60	0.49	0.37	0.50	0.44	0.36	0.39	0.32	0.51	0.44	0.38	0.33	0.44	*0.41*	*99*	*0.51*
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	17,712	2,517	27.92	4.66	4.27	5.07	5.04	4.86	3.91	3.11	3.23	3.26	3.28	3.04	3.28	*3.92*	*143*	*5.07*
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	25,981	2,578	26.66	4.26	4.41	4.75	4.85	4.43	3.07	2.29	1.91	1.68	1.60	1.73	2.05	*3.08*	*77*	*4.85*
WCAA	[WCAA]	--	4,881	1.50	0.95	0.00	0.78	1.42	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	*0.33*	-	*1.42*
Row A) Sum of Customer Flow Rates (cfs):					**81.81**	**76.72**	**93.38**	**98.56**	**90.28**	**70.74**	**59.58**	**55.85**	**51.65**	**50.75**	**51.94**	**55.08**	**69.65**	**-**	***98.56***
Row B) Sum of Outlet Meter Flow Rates [WC-S-1] + [WC-S-2] + [WC-S-3] (cfs):					**85.10**	**79.16**	**98.34**	**103.39**	**94.28**	**71.68**	**58.17**	**55.44**	**50.84**	**48.76**	**49.32**	**51.92**	**70.48**	**-**	***103.39***

Notes:
1. Sewage flow meter math for some customers based on 2020 Census populations.
2. The maximum allowable flow limits are from the 1988 service agreement adjusted for transfers between customers.

Figure 4-1
Rouge Valley Sewage Disposal System
Monthly Average Flow Rate by Customer for 2022

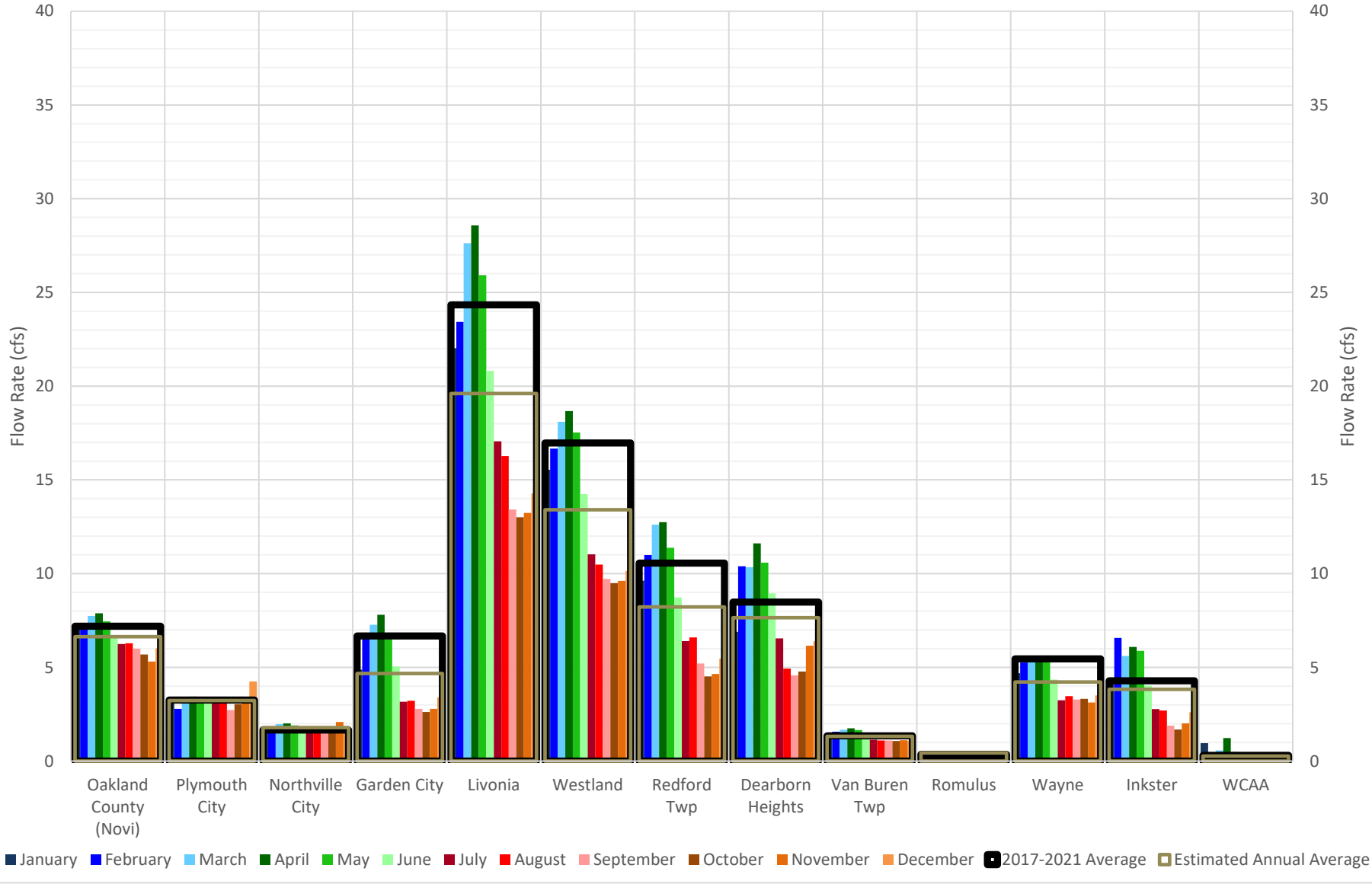


Table 4-3
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates by Customer for Significant Storm Event 1
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 1 2/16-18/2022 1.00 in		
			Estimated Monthly Average Dry Weather Flow Rate for February 2022 (cfs)	Estimated Maximum Hourly Flow Rate[23] (cfs)	Peaking Factor[4]
Oakland County (Novi)	[BG-1]	20.48	6.90	15.09	2.19
Plymouth City	[P-3] + [P-26] - [P-1]+ [FE-22]	15.80	2.71	5.70	2.10
Northville City	[P-1] - [BG-1]	7.61	1.78	4.60	2.59
Garden City	[M-1] + 94.3%[M-2]	24.40	4.87	27.40	5.63
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	106.52	19.94	56.74	2.85
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	80.04	14.64	33.94	2.32
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	52.89	8.63	30.05	3.48
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	65.47	6.81	64.42	9.46
Van Buren Twp	[P-15]	5.00	1.38	3.33	2.42
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.37	1.51	4.05
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	27.92	4.27	14.20	3.33
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	26.66	4.41	32.05	7.27

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. Estimated maximum hourly flow rates do not include any Sanitary Sewer Overflows (SSO).
4. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
5. 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.

Table 4-4
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates by Customer for Significant Storm Event 2
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 2 4/22-25/2022 1.15 in		
			Estimated Monthly Average Dry Weather Flow Rate for April 2022 (cfs)	Estimated Maximum Hourly Flow Rate[23] (cfs)	Peaking Factor[4]
Oakland County (Novi)	[BG-1]	20.48	7.68	11.41	1.49
Plymouth City	[P-3] + [P-26] - [P-1]+ [FE-22]	15.80	3.26	7.62	2.34
Northville City	[P-1] - [BG-1]	7.61	1.96	3.66	1.87
Garden City	[M-1] + 94.3%[M-2]	24.40	6.50	41.71	6.41
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	106.52	26.74	53.19	1.99
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	80.04	17.32	40.39	2.33
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	52.89	12.04	25.73	2.14
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	65.47	9.70	69.53	7.17
Van Buren Twp	[P-15]	5.00	1.62	3.29	2.03
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.44	1.24	2.85
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	27.92	5.04	15.86	3.15
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	26.66	4.85	23.71	4.89

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. Estimated maximum hourly flow rates do not include any Sanitary Sewer Overflows (SSO).
4. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
5. 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.

Table 4-5
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates by Customer for Significant Storm Event 3
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 3 6/6-9/2022 1.84 in		
			Estimated Monthly Average Dry Weather Flow Rate for June 2022 (cfs)	Estimated Maximum Hourly Flow Rate[23] (cfs)	Peaking Factor[4]
Oakland County (Novi)	[BG-1]	20.48	6.60	10.30	1.56
Plymouth City	[P-3] + [P-26] - [P-1]+ [FE-22]	15.80	3.20	6.59	2.06
Northville City	[P-1] - [BG-1]	7.61	1.71	3.61	2.11
Garden City	[M-1] + 94.3%[M-2]	24.40	4.25	28.46	6.69
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	106.52	19.05	42.95	2.26
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	80.04	13.14	30.78	2.34
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	52.89	7.75	30.35	3.92
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	65.47	6.40	85.04	13.28
Van Buren Twp	[P-15]	5.00	1.26	2.24	1.78
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.39	1.28	3.28
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	27.92	3.91	12.69	3.25
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	26.66	3.07	28.49	9.30

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. Estimated maximum hourly flow rates do not include any Sanitary Sewer Overflows (SSO).
4. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
5. 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.

Table 4-6
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates by Customer for Significant Storm Event 4
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 4 7/5-8/2022 1.15 in		
			Estimated Monthly Average Dry Weather Flow Rate for July 2022 (cfs)	Estimated Maximum Hourly Flow Rate[23] (cfs)	Peaking Factor[4]
Oakland County (Novi)	[BG-1]	20.48	6.19	9.23	1.49
Plymouth City	[P-3] + [P-26] - [P-1]+ [FE-22]	15.80	3.29	6.57	2.00
Northville City	[P-1] - [BG-1]	7.61	1.62	2.92	1.81
Garden City	[M-1] + 94.3%[M-2]	24.40	2.93	12.89	4.40
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	106.52	16.32	44.78	2.74
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	80.04	10.68	24.43	2.29
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	52.89	5.68	28.72	5.05
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	65.47	6.04	65.39	10.83
Van Buren Twp	[P-15]	5.00	1.11	2.24	2.02
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.32	1.01	3.14
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	27.92	3.11	9.32	2.99
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	26.66	2.29	19.26	8.41

0

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. Estimated maximum hourly flow rates do not include any Sanitary Sewer Overflows (SSO).
4. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
5. 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.

Table 4-7
Rouge Valley Sewage Disposal System
Estimated Maximum Hourly Flow Rates by Customer for Significant Storm Event 5
Using Incremental Sewage Flow Meter Math

Customer	Sewage Flow Meter Math	Maximum Allowable Flow Limit[1] (cfs)	Event 5 8/3-5/2022 1.43 in		
			Estimated Monthly Average Dry Weather Flow Rate for August 2022 (cfs)	Estimated Maximum Hourly Flow Rate[23] (cfs)	Peaking Factor[4]
Oakland County (Novi)	[BG-1]	20.48	6.18	11.70	1.89
Plymouth City	[P-3] + [P-26] - [P-1]+ [FE-22]	15.80	3.18	5.33	1.67
Northville City	[P-1] - [BG-1]	7.61	1.62	3.89	2.41
Garden City	[M-1] + 94.3%[M-2]	24.40	2.80	15.76	5.63
Livonia	[P-7] - [P-26] + [P-12] + 45.1%{[P-8] - [FE-22]} + 4.2%[P-13] + [LV-14] + 99.6%[LV-15] + [LV-16]	106.52	15.36	33.82	2.20
Westland	54.9%{[P-8] - [FE-22]} + 14.1%{[P-24] + [P-25] - [P-20] - [P-21]} + 30.0%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} +0.4%[LV-15] + 5.7%[M-2] + 150.6%[WE-14] + 96.6%[WE-25] + [WE-28]	80.04	10.01	19.31	1.93
Redford Twp	0.8%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 95.8%[P-13]	52.89	5.71	27.36	4.79
Dearborn Heights	99.2%{[WC-S-2] + [WC-S-3] + [P-14] - [P-9] - [P-10] - [P-11] - [P-13]} + 7.9%{[P-24] + [P-25] - [P-20] - [P-21]}	65.47	4.26	36.81	8.64
Van Buren Twp	[P-15]	5.00	1.08	2.03	1.89
Romulus	38.0%{[P-17] - [P-15]}	3.60	0.51	1.41	2.75
Wayne	69.2%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]} + 62.0%{[P-17] - [P-15]} + 3.4%[WE-25]	27.92	3.23	13.85	4.28
Inkster	78.0%{[P-24] + [P-25] - [P-20] - [P-21]} + 0.8%{[P-20] + [P-21] - [P-17] - [WE-25] - [WE-28] - [WCAA]}	26.66	1.91	22.24	11.64

0

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. Estimated maximum hourly flow rates do not include any Sanitary Sewer Overflows (SSO).
4. The peaking factor is a ratio of the maximum flow rate observed during the event to the average monthly dry weather flow rate.
5. 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.

5.0 Precipitation Data

Table 5-1 lists the monthly precipitation at DTW, the departure from normal, and the number of wet/dry days included for each month. Monthly precipitation data for the RVSDS rain gauges for 2022 is summarized on Table 5-2. Daily precipitation data for the RVSDS rain gauges for each month in 2022 is summarized on Tables 5-3 through 5-14. Data for the rain gauge at DTW is included in these tables.

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 gauges used in the analysis for that storm.

There were five (5) significant storm events in 2022. The events were designated as Significant Storm Events 1 and 5 for year 2022. The precipitation data for the significant storm events are summarized in Table 5-15 and presented in detail in Tables 5-16 through 5-20.

A quality assurance (QA) and quality control (QC) review of the RVSDS rain gauge data was performed and involved a review of the maintenance logs and a comparison of the recorded precipitation to other nearby rain gauges. The maintenance logs identified rain gauge issues which were detected during site visits. In almost all cases, these issues were resolved during the site visit. In general, when a rain gauge had an issue, it recorded zero precipitation. All rain gauge data with documented maintenance log issues were flagged.

Table 5-1
Rouge Valley Sewage Disposal System
Dry/Wet Weather Count by Month and Monthly Precipitation at DTW for 2022

Month	Number of Dry Weather Days	Number of Wet Weather Days	Monthly Total Precipitation (in)	
			DTW[1]	Departure From Normal[2]
January	30	1	0.52	-1.71
February	12	16	2.61	+0.53
March	19	12	2.18	-0.25
April	20	10	2.75	-0.51
May	17	14	3.81	+0.09
June	24	6	2.35	-0.91
July	22	9	1.86	-1.65
August	20	11	2.32	-0.94
September	25	5	0.99	-2.23
October	29	2	1.06	-1.47
November	25	5	1.52	-1.05
December	23	8	2.34	+0.09
Total	266	99	24.31	-10.01

Notes:
1) Detroit Metropolitan Wayne County Airport (DTW)
2) The National Centers for Environmental Information generates the official U.S. Climate Normals every 10-years and are calculated for a uniform 30-year period. Climate Normal precipitation values used in this report are from 1991-2020 and are the latest available.

Table 5-2
Rouge Valley Sewage Disposal System
Monthly Precipitation for 2022

Date	Monthly Precipitation (inches)																			DTW Monthly Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
January	0.42	0.51	0.54	0.43	0.44	0.31	0.47	0.44	0.40	0.42	0.22	0.36	0.19	0.29	0.35	0.12	0.28	0.28	0.52	29	12	20
February	2.29	2.58	2.91	2.42	2.09	2.08	2.19	2.36	2.42	0.61	0.44	2.60	2.00	2.11	2.11	1.48	1.94	1.77	2.61	35	18	26
March	2.08	2.59	2.25	2.04	2.23	2.15	2.09	2.09	2.21	2.28	1.77	2.75	2.67	2.21	4.16	2.01	2.25	2.39	2.18	48	30	39
April	3.06	3.07	3.17	2.97	3.03	2.89	3.09	2.95	2.80	3.05	2.98	2.65	2.57	2.41	2.49	3.08	3.33	2.75	2.75	55	39	47
May	3.03	3.55	2.73	3.03	2.69*	3.39	3.77	3.39	2.96	3.76	3.72	3.56	3.73	3.22	4.01	2.81	3.03	3.56	3.81	74	55	64
June	2.85	2.12	2.91	3.06	4.76	2.63	3.20	3.33	2.62	3.03	3.37	3.12	2.23	2.15	2.20	3.02	3.17	1.48*	2.35	82	60	71
July	2.21	3.23	2.93	2.56	2.04	0.75	2.91	2.46	3.63	2.54	2.97	2.39	1.92	2.66	2.22	1.87	3.28	0.00*	1.86	85	64	75
August	2.89	3.59	2.77	3.60	2.43	2.70	3.35	2.93	3.46	3.24	3.11	4.02	3.30	3.50	3.10	0.00*	4.18	1.30	2.32	84	64	74
September	1.36	1.15	1.44	1.39	1.86	1.16	1.49	1.26	1.06	1.37	1.62	1.16	1.09	1.47	1.74	1.37	1.30	0.98	0.99	76	57	67
October	0.54	0.96	0.64	0.68	0.55	0.51	0.70	0.70	0.70	0.53	0.43	0.61	0.78	0.84	0.73	0.58*	0.60	0.76	1.06	64	42	53
Novembert	1.35	0.91	1.44	1.34	1.45	1.20	1.45	1.38	1.27	2.45	1.15	1.02	0.88	0.79	0.61	1.27	1.01	0.78	1.52	53	35	44
December	1.77	1.35	1.74	1.54	1.74	1.52	1.69	1.48	1.54	1.64	1.34	1.53	1.58	1.56	1.31	1.53	1.54	1.38	2.34	38	27	33
Total	23.85	25.61	25.47	25.06	25.31*	21.29	26.40	24.77	25.07	24.92	23.12	25.77	22.94	23.21	25.03	19.14*	25.91	17.43*	24.31	60	42	51

Legend:

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

Table 5-3
Rouge Valley Sewage Disposal System
Daily Precipitation for January 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
1/1/2022	0	0.17	0.15	0.12	0.04	0.03	0.10	0.14	0.11	0.13	0.08	0.03	0.02	0.07	0.02	0	0	0	0.14	43	26	35
1/2/2022	0	0.11	0.11	0.06	0.01	0	0.08	0.05	0.07	0.05	0.02	0.12	0	0.08	0.12	0	0.03	0.08	0.06	26	13	20
1/3/2022	0.05	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0.04	0.02	0.05	0	27	10	19
1/4/2022	0.10	0	0	0	0.22	0.10	0	0	0	0	0	0.01	0.04	0	0	0	0	0	0	35	19	27
1/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0	t	36	14	25
1/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	t	22	14	18
1/7/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	23	9	16
1/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	33	8	21
1/9/2022	0.02	0.01	0	0	0	0	0.01	0	0	0.01	0	0	0	0	0.01	0.01	0.01	0.02	0.02	38	16	27
1/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	24	8	16
1/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	6	17
1/12/2022	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.02	0	0	0.01	t	39	27	33
1/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	37	24	31
1/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	31	15	23
1/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	19	10	15
1/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	32	9	21
1/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	30	22	26
1/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	35	27	31
1/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	44	21	33
1/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	21	16	19
1/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	23	10	17
1/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	26	11	19
1/23/2022	0	0.12	0.18	0.13	0.11	0.10	0.15	0.15	0.10	0.11	0.09	0.10	0	0.01	0.09	0	0.11	0.06	0.16	24	8	16
1/24/2022	0.01	0.10	0.10	0.12	0.06	0.08	0.12	0.10	0.12	0.12	0.03	0.08	0.05	0.13	0.07	0	0	0	0.13	24	5	15
1/25/2022	0.24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.11	0.05	t	21	7	14
1/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	19	2	11
1/27/2022	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0.01	0	0	0	t	28	0	14
1/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	24	8	16
1/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	-5	7
1/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	25	10	18
1/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	28	5	17
Total	0.42	0.51	0.54	0.43	0.44	0.31	0.47	0.44	0.40	0.42	0.22	0.36	0.19	0.29	0.35	0.12	0.28	0.28	0.52	29	12	20

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-4
Rouge Valley Sewage Disposal System
Daily Precipitation for February 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
2/1/2022	0.01	0.01	0.01	0.01	0	0.01	0.01	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	t	46	19	33
2/2/2022	0.65	0.81	0.86	0.68	0.61	0.60	0.69	0.68	0.66	0.13	0.10	0.76	0.43	0.67	0.66	0.29	0.35	0.32	0.70	40	23	32
2/3/2022	0.04	0.04	0.20	0.05	0.01	0.04	0.03	0.07	0.03	0	0	0.05	0	0	0.06	0	0	0	0.12	24	17	21
2/4/2022	0	0	0.04	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0.01	0.08	0.05	t	22	9	16
2/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12	0.01	t	20	9	15
2/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.01	0.01	0	29	12	21
2/7/2022	0.10	0	0	0	0.10	0.10	0	0	0	0	0	0	0	0	0	0	0.01	0	t	31	16	24
2/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	27	19	23
2/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0.16	0	0	0.09	0	0.01	t	41	18	30
2/10/2022	0.01	0.02	0.01	0.01	0.01	0	0.01	0.01	0.02	0.01	0	0	0	0	0	0	0.03	0.01	0.02	35	29	32
2/11/2022	0.08	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.10	0	0	0.09	0.08	0.03	0.05	0.08	0.13	0.11	0.11	37	28	33
2/12/2022	0	0.01	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	t	36	19	28
2/13/2022	0.02	0.01	0.07	0.03	0.04	0	0.02	0.05	0.13	0	0	0.13	0	0.07	0.04	0	0.01	0	0.10	23	11	17
2/14/2022	0.01	0	0.04	0.02	0.01	0	0.03	0.02	0.08	0	0	0	0.03	0	0	0.06	0.07	0.08	0	22	2	12
2/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	25	9	17
2/16/2022	0.01	0.01	0.01	0.01	0.01	0	0	0.01	0.02	0	0	0.03	0.08	0.01	0	0	0.02	0.02	0.01	53	22	38
2/17/2022	1.08	1.24	1.28	1.19	1.01	1.05	1.05	1.22	1.05	0.44	0.31	1.17	0.81	1.10	0.99	0.72	0.68	0.69	1.27	51	20	36
2/18/2022	0.09	0.03	0.01	0.04	0.03	0.02	0.01	0	0.01	0	0	0.02	0	0.01	0.03	0	0.14	0	0.02	28	10	19
2/19/2022	0	0.01	0.01	0	0	0	0	0	0.01	0	0	0.01	0	0	0.01	0	0	0	0.01	30	12	21
2/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0.17	0	0	0.04	0.02	0.17	0	45	12	29
2/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	30	39
2/22/2022	0.14	0.16	0.18	0.20	0.13	0.13	0.19	0.14	0.22	0.03	0.03	0.21	0.19	0.14	0.13	0.15	0.17	0.16	0.15	55	36	46
2/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	36	19	28
2/24/2022	0	0.04	0.02	0.02	0	0	0	0.03	0.01	0	0	0.03	0.01	0	0.03	0	0	0	0.04	28	19	24
2/25/2022	0.05	0.09	0.08	0.07	0.03	0.04	0.06	0.05	0.07	0	0	0.10	0.04	0.08	0.10	0	0.08	0.12	0.06	27	20	24
2/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	t	32	20	26
2/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	23	33
2/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	25	30
Total	2.29	2.58	2.91	2.42	2.09	2.08	2.19	2.36	2.42	0.61	0.44	2.60	2.00	2.11*	2.11	1.48	1.94	1.77	2.61	35	18	26

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-5
Rouge Valley Sewage Disposal System
Daily Precipitation for March 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
3/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	30	41
3/2/2022	0.01	0.04	0.01	0	0.11	0.01	0	0	0.02	0	0	0.25	0.02	0.01	0.05	0.01	0.02	0.04	0.01	46	25	36
3/3/2022	0.10	0	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	34	20	27
3/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	19	30
3/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	31	46
3/6/2022	0.01	0	0.02	0	0.02	0	0.01	0	0.02	0.01	0.01	0	0	0	0	0	0.01	0	0.03	62	36	49
3/7/2022	0.39	0.53	0.47	0.42	0.37	0.39	0.42	0.38	0.45	0.47	0.39	0.47	0.47	0.45	0.36	0.46	0.47	0.55	0.38	38	32	35
3/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	40	29	35
3/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.09	0	0	0	0	47	27	37
3/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	26	34
3/11/2022	0.05	0.11	0.09	0.06	0.05	0.03	0.06	0.08	0.08	0.07	0.03	0.11	0.08	0.06	0.12	0.09	0.09	0.11	0.06	33	25	29
3/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	25	14	20
3/13/2022	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0	0	0.01	0	0.01	0	0.02	0	0.08	46	14	30
3/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	29	44
3/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.03	0	0	0	0	0	52	34	43
3/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	30	49
3/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	37	55
3/18/2022	0.30	0.36	0.40	0.35	0.35	0.46	0.33	0.34	0.41	0.39	0.34	0.46	0.49	0.37	0.42	0.35	0.39	0.36	0.42	55	44	50
3/19/2022	0.14	0.26	0.19	0.14	0.29	0.17	0.15	0.18	0.21	0.24	0.17	0.30	0.38	0.27	0.57	0.18	0.25	0.22	0.25	50	39	45
3/20/2022	0	0.01	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0.01	t	59	38	49
3/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	38	50
3/22/2022	0.21	0.28	0.24	0.22	0.18	0.19	0.21	0.21	0.20	0.24	0.13	0.29	0.31	0.25	0.29	0.21	0.23	0.28	0.25	45	38	42
3/23/2022	0.56	0.75	0.53	0.53	0.61	0.53	0.61	0.62	0.60	0.56	0.51	0.58	0.60	0.58	0.99	0.47	0.52	0.61	0.56	49	40	45
3/24/2022	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	t	50	43	47
3/25/2022	0.03	0.02	0.01	0.04	0.03	0.03	0.02	0	0	0.03	0.01	0.01	0.01	0	0.02	0.01	0	0	0.02	47	39	43
3/26/2022	0.02	0.03	0.02	0.04	0.02	0	0.03	0.03	0.03	0.04	0.01	0.03	0.02	0.01	0.05	0.02	0.05	0.04	0.02	40	28	34
3/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	32	23	28
3/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	30	20	25
3/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	18	29
3/30/2022	0.24	0.18	0.26	0.23	0.19	0.22	0.24	0.23	0.18	0.20	0.17	0.25	0.26	0.18	0.18	0.21	0.20	0.17	0.09	62	31	47
3/31/2022	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0	0	0.01	0	0	0	0.01	65	37	51
Total	2.08	2.59	2.25	2.04	2.23	2.15	2.09	2.09	2.21	2.28	1.77	2.75	2.67	2.21*	4.16	2.01	2.25	2.39	2.18	48	30	39

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-6
Rouge Valley Sewage Disposal System
Daily Precipitation for April 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
4/1/2022	0	0.01	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	t	42	33	38
4/2/2022	0.07	0.03	0.05	0.10	0.03	0.08	0.08	0.05	0	0.08	0.01	0	0	0	0.03	0.06	0.03	0.02	0.09	45	28	37
4/3/2022	0.12	0.03	0.05	0.07	0.12	0.11	0.08	0.05	0.02	0.10	0.04	0.01	0.01	0	0.03	0.07	0.04	0.03	0.09	46	34	40
4/4/2022	0.28	0.29	0.27	0.26	0.22	0.27	0.24	0.25	0.27	0.27	0.20	0.25	0.27	0.27	0.25	0.27	0.26	0.29	0.21	43	36	40
4/5/2022	0.10	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	57	33	45
4/6/2022	0.28	0.31	0.28	0.26	0.23	0.25	0.24	0.31	0.32	0.30	0.24	0.37	0.36	0.34	0.31	0.28	0.31	0.31	0.24	54	43	49
4/7/2022	0.01	0.02	0	0	0	0.01	0	0	0	0	0	0	0	0	0.01	0	0	0	t	51	40	46
4/8/2022	0.01	0.03	0.01	0.03	0.06	0.04	0.08	0.03	0.05	0.02	0.01	0.15	0.18	0.04	0.02	0.04	0.04	0.04	0.04	49	39	44
4/9/2022	0.01	0	0.02	0	0.01	0.01	0.01	0.03	0.02	0	0	0.03	0.01	0	0.01	0.01	0.01	0.01	t	42	34	38
4/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	35	45
4/11/2022	0.02	0.08	0.01	0.01	0.04	0.01	0.01	0.01	0.02	0.02	0	0.07	0.06	0.07	0.04	0.01	0.01	0.11	0.02	70	42	56
4/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	39	51
4/13/2022	0.19	0.11	0.16	0.18	0.10	0.17	0.19	0.18	0.18	0.19	0.11	0.25	0.24	0.12	0.23	0.14	0.18	0.10	0.14	70	54	62
4/14/2022	0.03	0.10	0.04	0.06	0.04	0.04	0.03	0.05	0.04	0.07	0.04	0.04	0.03	0.08	0.08	0.03	0.06	0.08	0.04	67	43	55
4/15/2022	0.08	0.39	0.22	0.16	0.10	0.08	0.14	0.20	0.46	0.15	0.28	0.38	0.29	0.22	0.19	0.19	0.50	0.40	0.12	54	45	50
4/16/2022	0.03	0	0	0	0.03	0.02	0.02	0	0	0.03	0	0	0	0	0	0	0	0.01	t	49	35	42
4/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	29	36
4/18/2022	0.43	0.42	0.43	0.40	0.38	0.36	0.39	0.45	0.44	0.37	0.38	0.42	0.37	0.37	0.42	0.43	0.41	0.36	0.41	39	33	36
4/19/2022	0.01	0.05	0.06	0.01	0.04	0.01	0.04	0.02	0	0.02	0	0	0.01	0	0.04	0.03	0.07	0.04	t	46	35	41
4/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	51	30	41
4/21/2022	0.10	0.09	0.10	0.09	0.07	0.08	0.07	0.09	0.09	0.09	0.07	0.08	0.08	0.09	0.09	0.08	0.09	0.06	0.07	67	48	58
4/22/2022	0.11	0.34	0.31	0.24	0.11	0.10	0.29	0.26	0.25	0.17	0.30	0.16	0.19	0.22	0.26	0.28	0.33	0.32	0.26	54	42	48
4/23/2022	0.90	0.49	0.92	0.80	1.05	0.84	0.91	0.69	0.35	0.88	1.09	0.19	0.22	0.28	0.27	0.92	0.75	0.39	0.71	77	44	61
4/24/2022	0.19	0.22	0.17	0.22	0.17	0.24	0.18	0.19	0.20	0.22	0.14	0.16	0.17	0.24	0.16	0.17	0.16	0.12	0.24	83	60	72
4/25/2022	0.09	0.05	0.07	0.08	0.13	0.07	0.09	0.09	0.08	0.07	0.07	0.09	0.08	0.07	0.04	0.07	0.07	0.06	0.07	67	50	59
4/26/2022	0	0.01	0	0	0	0	0	0	0.01	0	0	0	0	0	0.01	0	0	0	t	49	37	43
4/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	33	40
4/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	30	42
4/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	32	45
4/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	44	53
Total	3.06	3.07	3.17	2.97	3.03	2.89	3.09	2.95	2.80	3.05	2.98	2.65	2.57	2.41	2.49	3.08	3.33	2.75	2.75	55	39	47

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-7
Rouge Valley Sewage Disposal System
Daily Precipitation for May 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
5/1/2022	0.42	0.48	0.23	0.29	0.47	0.56	0.40	0.30	0.25	0.47	0.39	0.26	0.20	0.31	0.19	0.23	0.35	0.38	0.61	68	48	58
5/2/2022	0	0	0	0	0	0.10	0	0	0.01	0	0	0	0	0	0	0	0	0	0	57	51	54
5/3/2022	1.01	0.58	0.92	1.01	0*	0.90	1.08	1.07	0.74	0.80	0.80	0.65	0.65	0.55	0.64	0.96	0.79	0.48	0.83	54	50	52
5/4/2022	0.11	0.04	0	0	0*	0.01	0	0	0.01	0.06	0.01	0	0.01	0	0.01	0	0	0.04	0.02	62	47	55
5/5/2022	0.10	0.02	0.05	0.07	0*	0.09	0.05	0.03	0.02	0.05	0.04	0.01	0.01	0.01	0.01	0.06	0.05	0.01	0.11	61	41	51
5/6/2022	0.08	0.06	0.07	0.08	0*	0.09	0.06	0.06	0.06	0.06	0.09	0.07	0.07	0.08	0.12	0.06	0.08	0.08	0.13	61	50	56
5/7/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	51	58
5/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	44	56
5/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	72	49	61
5/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	56	68
5/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	62	72
5/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	60	73
5/13/2022	0	0	0	0	0	0	0	0	0	0.78	0.33	0	0	0	0	0	0	0	0	82	60	71
5/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.11	0	0	0.01	0	81	62	72
5/15/2022	0.05	0.04	0.03	0.04	0.15	0.03	0.04	0.03	0.23	0.07	0	0.45	0.51	0.40	1.17	0.01	0.02	0.08	0.36	87	61	74
5/16/2022	0.66	0.33	0.60	0.58	0.93	0.50	0.73	0.71	0.60	0.56	0.48	0.65	0.57	0.40	0.20	0.60	0.54	0.41	0.71	77	55	66
5/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	53	61
5/18/2022	0.39	0.40	0.41	0.40	0.35	0.41	0.41	0.39	0.43	0.41	0.39	0.45	0.45	0.50	0.51	0.36	0.40	0.42	0.36	58	50	54
5/19/2022	0	0.01	0	0	0	0	0.01	0	0	0	0	0	0	0.01	0	0	0	0	0	82	56	69
5/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	66	77
5/21/2022	0.06	0.11	0.05	0.06	0.08	0.04	0.10	0.09	0.11	0.05	0.11	0.12	0.17	0.13	0.24	0.04	0.11	0.11	0.12	81	66	74
5/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	68	53	61
5/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	50	56
5/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	45	59
5/25/2022	0.03	0.13	0.08	0.13	0.01	0.06	0.25	0.22	0.03	0.03	0.01	0.21	0.17	0.18	0.15	0.12	0.16	0.15	0.28	71	52	62
5/26/2022	0.10	0.25	0.19	0.27	0.66	0.31	0.52	0.47	0.35	0.31	0.40	0.19	0.23	0.32	0.16	0.17	0.17	0.31	0.27	76	63	70
5/27/2022	0.02	1.09	0.10	0.10	0.04	0.29	0.12	0.02	0.07	0.11	0.67	0.36	0.69	0.28	0.49	0.20	0.35	1.08	0.01	78	57	68
5/28/2022	0	0.01	0	0	0	0	0	0	0.05	0	0	0.14	0	0	0.01	0	0.01	0	0	75	55	65
5/29/2022	0	0	0	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0	0	79	59	69
5/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	64	76
5/31/2022	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	68	79
Total	3.03	3.55	2.73	3.03	2.69*	3.39	3.77	3.39	2.96	3.76	3.72	3.56	3.73	3.22	4.01	2.81	3.03	3.56	3.81	74	55	64

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-8
Rouge Valley Sewage Disposal System
Daily Precipitation for June 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
6/1/2022	0.62	0.04	0.30	0.36	0.17	0.17	0.32	0.49	0.15	0.46	0.35	0.29	0.08	0.06	0.05	0.36	0.16	0.07	0.21	82	59	71
6/2/2022	0.02	0	0	0	0.50	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0.01	75	54	65
6/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	53	67
6/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	50	61
6/5/2022	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	t	75	59	67
6/6/2022	0.30	0.45	0.62	1.27	0.29	0.31	0.98	1.02	0.72	0.68	1.19	0.50	0.46	0.41	0.34	1.18	1.45	0.56	0.58	81	58	70
6/7/2022	0.65	0.44	0.85	0.39	1.14	0.99	0.75	0.66	0.59	0.67	0.54	0.84	0.45	0.44	0.52	0.29	0.30	0.39	0.34	73	60	67
6/8/2022	0.67	0.44	0.56	0.60	0.32	0.58	0.71	0.60	0.51	0.54	0.51	0.46	0.37	0.40	0.45	0.62	0.57	0.45	0.73	70	53	62
6/9/2022	0.06	0.02	0.01	0	0.11	0	0.01	0.01	0.04	0.01	0.01	0.28	0.15	0.03	0.03	0.01	0.01	0.01	t	74	53	64
6/10/2022	0.03	0	0.01	0.05	0.02	0.01	0.07	0.03	0.05	0.03	0	0.18	0.04	0.05	0.09	0.03	0	0	0.02	77	54	66
6/11/2022	0.01	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	t	78	58	68
6/12/2022	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0.01	0.02	0	0	0*	t	83	64	74
6/13/2022	0.03	0.02	0.01	0.04	0	0.06	0.02	0.01	0	0.05	0.02	0.04	0.03	0.05	0.07	0.02	0.02	0*	0.03	81	60	71
6/14/2022	0.35	0.15	0.20	0.19	0.15	0.39	0.16	0.18	0.18	0.36	0.33	0.20	0.18	0.20	0.15	0.26	0.14	0*	0.32	82	63	73
6/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	94	68	81
6/16/2022	0.04	0.35	0.18	0.05	0	0.04	0.04	0.08	0.15	0.11	0.23	0.11	0.29	0.28	0.15	0.12	0.25	0*	0.02	91	77	84
6/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	82	64	73
6/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	73	53	63
6/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	78	50	64
6/20/2022	0.02	0.03	0.01	0.02	0	0.03	0.03	0.02	0.02	0.02	0.03	0.08	0.05	0.04	0.04	0.02	0.02	0*	0.03	86	61	74
6/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	96	63	80
6/22/2022	0	0	0	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	90	68	79
6/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	83	59	71
6/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	87	60	74
6/25/2022	0	0.07	0.03	0.07	0	0	0	0	0	0	0	0.03	0.04	0.07	0.10	0.06	0.13	0*	0.05	88	65	77
6/26/2022	0.05	0.01	0.02	0.01	0	0.03	0.07	0.06	0.08	0.08	0.07	0.04	0.02	0	0	0	0.01	0*	0.01	86	67	77
6/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	77	60	69
6/28/2022	0	0	0	0	1.73	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	80	52	66
6/29/2022	0	0.10	0.11	0.01	0	0	0.04	0.17	0.13	0	0.09	0.07	0.07	0.11	0.19	0.05	0.11	0*	t	83	61	72
6/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	91	64	78
Total	2.85	2.12	2.91	3.06	4.76	2.63	3.20	3.33	2.62	3.03	3.37	3.12	2.23	2.15	2.20	3.02	3.17	1.48	2.35	82	60	71

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-9
Rouge Valley Sewage Disposal System
Daily Precipitation for July 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
7/1/2022	0.19	0.04	0.10	0.11	0.27	0.17	0.11	0.12	0.12	0.11	0.09	0.16	0.06	0.06	0.43	0.11	0.11	0*	0.06	87	67	77
7/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	85	57	71
7/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	83	63	73
7/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	91	64	78
7/5/2022	0.39	0.49	0.35	0.60	0.47	0.05	0.49	0.39	0.55	0.34	0.36	0.41	0.38	0.42	0.37	0.41	0.36	0*	0.44	90	70	80
7/6/2022	0.22	0.46	0.27	0.24	0.19	0.06	0.13	0.43	0.08	0.01	0.09	0.05	0.05	0.07	0.12	0.21	0.35	0*	0.20	76	66	71
7/7/2022	0	0	0	0	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0*	0	85	60	73
7/8/2022	0.32	0.89	1.07	0.36	0.14	0.10	0.78	0.46	1.57	0.12	1.45	0.22	0.09	0.73	0.02	0.35	1.21	0*	0.32	85	64	75
7/9/2022	0	0	0	0	0	0	0	0	0	0.71	0	0	0	0	0	0	0	0*	0	82	59	71
7/10/2022	0	0	0	0	0	0	0	0	0	0.23	0	0	0	0	0	0	0	0*	0	82	56	69
7/11/2022	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0*	0	86	61	74
7/12/2022	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0*	t	85	68	77
7/13/2022	0.04	0.23	0.34	0.17	0.15	0.04	0.15	0.28	0.20	0.19	0.23	0.20	0.22	0.17	0.19	0.14	0.20	0*	0.06	78	62	70
7/14/2022	0	0	0	0	0	0	0.01	0	0	0	0	0.01	0	0	0	0	0	0*	0	83	56	70
7/15/2022	0.04	0.11	0.05	0.03	0.03	0.05	0.01	0.02	0.01	0.04	0.03	0.03	0.04	0.13	0.07	0.04	0.01	0*	0.02	81	61	71
7/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	t	82	67	75
7/17/2022	0.08	0.01	0.02	0.04	0.03	0.02	0.04	0.04	0.02	0.03	0.01	0.04	0.04	0.02	0.01	0.02	0.02	0*	0.04	80	69	75
7/18/2022	0	0.01	0	0.01	0.01	0	0	0	0	0	0	0.01	0	0.01	0.01	0.01	0	0*	t	89	69	79
7/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	93	66	80
7/20/2022	0.09	0.04	0.01	0.05	0.18	0.02	0.02	0.04	0.10	0	0.03	0.17	0.04	0	0.02	0	0.09	0*	0.23	92	74	83
7/21/2022	0.21	0.15	0.09	0.42	0	0.10	0.68	0.07	0	0.32	0.07	0	0.03	0.04	0.02	0.06	0.11	0*	0.29	90	70	80
7/22/2022	0.30	0.01	0	0	0.21	0.01	0.01	0	0	0.02	0.02	0	0	0	0	0.01	0	0*	0	89	68	79
7/23/2022	0.03	0.60	0.40	0.41	0.01	0.04	0.20	0.25	0.06	0.04	0.05	0.87	0.68	0.65	0.51	0.38	0.19	0*	0.15	88	70	79
7/24/2022	0.30	0.18	0.20	0.08	0.25	0.09	0.26	0.32	0.87	0.27	0.53	0.21	0.26	0.31	0.43	0.10	0.62	0*	0.04	89	70	80
7/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	81	65	73
7/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	82	61	72
7/27/2022	0	0.01	0.03	0.04	0.10	0	0.02	0.04	0.04	0.02	0.01	0.01	0.03	0.05	0.02	0.03	0.01	0*	0.01	84	65	75
7/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0*	0	86	68	77
7/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0*	0	83	58	71
7/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0*	0	84	59	72
7/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0*	0	84	63	74
Total	2.21	3.23	2.93	2.56	2.04	0.75	2.91	2.46	3.63	2.54	2.97	2.39	1.92	2.66	2.22	1.87	3.28	0.00*	1.86	85	64	75

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-10
Rouge Valley Sewage Disposal System
Daily Precipitation for August 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
8/1/2022	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0.02	0	0*	0	0*	t	88	66	77
8/2/2022	0	0	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0*	0	0*	0	85	66	76
8/3/2022	0.65	0.91	0.69	0.46	0.51	0.60	0.63	0.68	1.50	0.38	0.75	1.72	1.41	1.11	1.71	0*	1.31	0*	0.48	95	69	82
8/4/2022	0.92	0.25	0.30	0.69	0.68	0.02	0.89	0.58	0.12	0.71	0.59	0.45	0.19	0.72	0.35	0*	0.69	0*	0.47	85	71	78
8/5/2022	0	0.13	0	0	0	0.01	0.18	0.01	0.01	0.01	0	0.19	0.01	0.11	0.02	0*	0	0*	0.04	87	71	79
8/6/2022	0	0.01	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0*	0	0*	0	90	72	81
8/7/2022	0	0.24	0	0	0	0	0	0	0	0	0	0.46	0.37	0.01	0.05	0*	0	0*	0.02	92	73	83
8/8/2022	0.02	0.67	0.65	0.36	0.22	0.02	0.41	0.70	0.74	0.31	0.62	0.51	0.50	0.50	0.45	0*	0.57	0.1*	0.06	89	69	79
8/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	82	64	73
8/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	84	64	74
8/11/2022	0.10	0	0	0	0.10	0.10	0	0	0	0	0	0	0	0	0	0*	0	0	0	81	61	71
8/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	82	55	69
8/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	t	73	60	67
8/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	t	73	63	68
8/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	t	84	65	75
8/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	83	63	73
8/17/2022	0	0.62	0	0	0	0.58	0	0	0.01	0.38	0.09	0.02	0.18	0.40	0.02	0*	0.10	0.19	0.07	83	61	72
8/18/2022	0.36	0	0	0.01	0.01	0.78	0.01	0.01	0	0.11	0	0.01	0	0	0.01	0*	0	0	0.14	86	60	73
8/19/2022	0.01	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0*	0	0	0	87	60	74
8/20/2022	0.07	0.01	0.02	0.05	0.03	0.04	0.05	0.04	0.02	0.02	0.01	0.01	0.02	0.02	0	0*	0.01	0.01	0.05	83	67	75
8/21/2022	0.75	0.41	0.60	1.12	0.87	0.45	0.56	0.55	0.63	0.61	0.68	0.45	0.55	0.47	0.27	0*	0.74	0.65	0.72	80	65	73
8/22/2022	0.01	0	0	0.01	0.01	0	0.01	0	0	0	0	0	0	0	0	0*	0	0	0	83	64	74
8/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	84	61	73
8/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	87	64	76
8/25/2022	0	0.01	0.01	0.01	0	0	0	0.01	0	0	0	0.02	0	0.02	0	0*	0	0.01	t	86	66	76
8/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	80	65	73
8/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	80	58	69
8/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	87	61	74
8/29/2022	0	0.32	0.49	0.89	0	0	0.59	0.34	0.42	0.69	0.37	0.17	0.07	0.12	0.22	0*	0.75	0.34	0.26	90	68	79
8/30/2022	0	0.01	0.01	0	0	0	0.01	0.01	0.01	0.01	0	0	0	0	0	0*	0.01*	0	0.01	82	65	74
8/31/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	84	59	72
Total	2.89	3.59	2.77	3.60	2.43	2.70	3.35	2.93	3.46	3.24	3.11	4.02	3.30	3.50	3.10	0.00*	4.18	1.30*	2.32	84	64	74

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-11
Rouge Valley Sewage Disposal System
Daily Precipitation for September 2022

Date	Daily Precipitation (inches)																			DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
9/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	85	62	74
9/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	86	65	76
9/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	89	67	78
9/4/2022	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0*	0*	0	t	73	65	69
9/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	t	76	64	70
9/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	79	63	71
9/7/2022	0.10	0	0	0	0.10	0.10	0	0	0	0	0	0	0	0	0	0*	0*	0	0	82	56	69
9/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	83	55	69
9/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	84	56	70
9/10/2022	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	84	65	75
9/11/2022	0.25	0.12	0.06	0.17	0.27	0.07	0.04	0.16	0.13	0.18	0.15	0.16	0.12	0.16	0.09	0.08	0.10	0.12	0.06	77	68	73
9/12/2022	0	0	0	0	0.19	0	0	0.01	0	0	0.02	0.03	0.01	0.01	0.01	0	0	0	t	70	58	64
9/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	76	56	66
9/14/2022	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	58	71
9/15/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	59	66
9/16/2022	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	83	57	70
9/17/2022	0	0	0.01	0	0	0	0.01	0.01	0.01	0	0	0	0	0	0	0	0	0	0	86	61	74
9/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	t	87	67	77
9/19/2022	0.11	0.11	0.08	0.11	0.11	0.14	0.10	0.10	0.10	0.11	0.08	0.13	0.16	0.26	0.67	0.08	0.07	0.10	0.11	84	63	74
9/20/2022	0.48	0.55	0.81	0.60	0.62	0.36	0.94	0.54	0.37	0.63	1.01	0.32	0.34	0.49	0.44	0.87	0.61	0.38	0.51	80	59	70
9/21/2022	0.06	0.02	0.04	0.05	0.28	0.18	0.02	0.05	0.02	0.06	0.01	0.19	0.07	0.02	0	0.01	0.02	0	0.01	89	63	76
9/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	48	57
9/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	43	55
9/24/2022	0.05	0.06	0.04	0.24	0.01	0.04	0.12	0.04	0.01	0.12	0.03	0.04	0.07	0.16	0.17	0.06	0.07	0.07	0.06	68	52	60
9/25/2022	0.30	0.24	0.40	0.20	0.27	0.20	0.25	0.34	0.41	0.27	0.32	0.28	0.31	0.32	0.29	0.27	0.42	0.29	0.24	65	54	60
9/26/2022	0.01	0.03	0	0.01	0.01	0.07	0	0.01	0.01	0	0	0.01	0	0.03	0.04	0	0.01	0.01	t	64	51	58
9/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0	0	0.01	0	64	48	56
9/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	50	55
9/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	46	54
9/30/2022	0	0.01	0	0	0	0	0.01	0.01	0.01	0	0	0	0	0	0	0	0	0	0	67	42	55
Total	1.36	1.15	1.44	1.39	1.86	1.16	1.49	1.26	1.06	1.37	1.62	1.16	1.09	1.47	1.74	1.37	1.30	0.98	0.99	76	57	67

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-12
Rouge Valley Sewage Disposal System
Daily Precipitation for October 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
10/1/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	49	61
10/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	46	57
10/3/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	41	53
10/4/2022	0	0.01	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	74	40	57
10/5/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	46	62
10/6/2022	0	0.02	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0.01	t	79	53	66
10/7/2022	0.10	0	0.01	0.01	0.10	0.10	0.01	0.02	0	0	0	0	0.01	0	0	0.01	0.01	0.01	0.01	53	41	47
10/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	33	45
10/9/2022	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	68	39	54
10/10/2022	0	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	t	69	47	58
10/11/2022	0.01	0.03	0.02	0.01	0	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.03	0.04	0.04	0.01	0.01	0.03	t	78	47	63
10/12/2022	0.03	0.16	0.07	0.11	0.03	0.05	0.09	0.11	0.07	0.11	0.09	0.09	0.14	0.18	0.10	0.06	0.08	0.14	0.04	72	51	62
10/13/2022	0	0.02	0	0	0	0	0	0.01	0	0.01	0	0	0.01	0.02	0.02	0	0	0.02	t	59	39	49
10/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	36	49
10/15/2022	0	0.04	0.01	0.01	0	0	0	0	0.01	0	0	0	0.04	0.04	0.04	0	0	0.03	0.03	55	37	46
10/16/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	36	49
10/17/2022	0.06	0.10	0.07	0.08	0.06	0.09	0.08	0.08	0.06	0.05	0.02	0.08	0.08	0.06	0.10	0.08	0.08	0.07	0.09	47	40	44
10/18/2022	0.01	0.16	0.07	0.09	0.06	0.02	0.08	0.06	0.09	0.05	0.02	0.06	0.12	0.08	0.11	0.06	0.07	0.09	0.07	43	39	41
10/19/2022	0	0.06	0.01	0.02	0.01	0.01	0.01	0.01	0.04	0.01	0	0.01	0.03	0.05	0.07	0.01	0.02	0.04	t	49	37	43
10/20/2022	0	0.08	0.06	0.04	0.02	0	0.05	0.06	0.08	0.03	0.04	0.08	0.08	0.08	0.07	0.05	0.06	0.08	0.02	44	35	40
10/21/2022	0	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	70	35	53
10/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	46	60
10/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	49	62
10/24/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	50	64
10/25/2022	0	0.05	0.02	0	0.03	0.02	0.04	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0	0.02	73	54	64
10/26/2022	0.33	0.19	0.27	0.27	0.23	0.21	0.28	0.26	0.27	0.25	0.24	0.25	0.22	0.27	0.17	0.28	0.26	0.24	0.29	61	44	53
10/27/2022	0	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	35	44
10/28/2022	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	38	49
10/29/2022	0	0.01	0	0	0	0	0.01	0.01	0.01	0	0	0	0	0	0	0	0	0	0	64	36	50
10/30/2022	0	0.01	0.02	0.02	0	0	0.02	0.01	0.01	0	0	0	0	0	0	0.01	0	0	0.03	61	38	50
10/31/2022	0.47	0.28	0.42	0.44	0.46	0.34	0.47	0.42	0.37	0.41	0.27	0.35	0.33	0.42	0.16	0.37	0.33	0.38	0.45	63	52	58
Total	0.54	0.96	0.64	0.68	0.55	0.51	0.70	0.70	0.70	0.53	0.43	0.61	0.78	0.84	0.73	0.58	0.60	0.76	1.06	64	42	53

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-13
Rouge Valley Sewage Disposal System
Daily Precipitation for November 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
11/1/2022	0	0.01	0	0.01	0	0	0	0.01	0	0.01	0.01	0	0.01	0	0.01	0	0	0	t	70	49	60
11/2/2022	0	0	0.01	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	0	69	43	56
11/3/2022	0	0.01	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	69	42	56
11/4/2022	0.10	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	50	62
11/5/2022	0	0.02	0.07	0.04	0	0.02	0.01	0	0.08	0.02	0.02	0.09	0.04	0.02	0.04	0.07	0.03	0.02	t	74	56	65
11/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	44	55
11/7/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	40	50
11/8/2022	0	0	0	0	0	0	0	0	0	1.31	0.35	0	0	0	0	0	0	0	0	53	37	45
11/9/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	39	53
11/10/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	48	61
11/11/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	39	51
11/12/2022	0.12	0.09	0.13	0.14	0.14	0.10	0.14	0.13	0.13	0.10	0.04	0.12	0.11	0.09	0.05	0.13	0.10	0.09	0.14	39	33	36
11/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	40	32	36
11/14/2022	0	0	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	41	32	37
11/15/2022	0.05	0.04	0.11	0.10	0.11	0.08	0.11	0.12	0.10	0.07	0.02	0.10	0.10	0.08	0.08	0.10	0.09	0.09	0.10	38	33	36
11/16/2022	0	0.07	0.02	0.01	0.01	0	0.02	0.05	0.02	0	0.06	0.01	0.01	0	0.01	0.05	0.03	0.01	t	39	34	37
11/17/2022	0	0	0.07	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	t	35	26	31
11/18/2022	0	0.11	0.10	0.11	0	0	0.10	0.10	0.10	0	0	0.02	0.01	0.02	0	0	0	0	t	33	24	29
11/19/2022	0	0.01	0.02	0.05	0.01	0	0.01	0.02	0.01	0.03	0.03	0.01	0.01	0.03	0.01	0	0.01	0	0.05	30	21	26
11/20/2022	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0.01	26	16	21
11/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	16	31
11/22/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	23	37
11/23/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	24	40
11/24/2022	0.05	0.03	0.06	0.05	0.04	0.04	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.05	0.04	0.03	0.05	57	26	42
11/25/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	52	36	44
11/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	29	42
11/27/2022	1.02	0.52	0.84	0.83	1.02	0.86	0.94	0.88	0.79	0.86	0.60	0.65	0.57	0.51	0.40	0.87	0.71	0.53	1.04	43	37	40
11/28/2022	0	0*	0.01	0	0	0	0.02	0	0.01	0	0	0	0	0	0	0	0	0	0	43	35	39
11/29/2022	0.01	0*	0	0	0.02	0	0.01	0	0	0	0	0	0	0.02	0	0	0	0.01	0.01	53	40	47
11/30/2022	0.11	0.13	0.13	0.15	0.09	0.16	0.13	0.15	0.19	0.15	0.14	0.15	0.13	0.16	0.08	0.13	0.14	0.12	0.12	54	30	42
Total	1.35	0.91	1.44	1.34	1.45	1.20	1.45	1.38	1.27	2.45	1.15	1.02	0.88	0.79	0.61	1.27	1.01	0.78	1.52	53	35	44

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-14
Rouge Valley Sewage Disposal System
Daily Precipitation for December 2022

Date	Daily Precipitation (inches)																		DTW Daily Temperature (°F)		
	R-10	R-11	R-12	R-13	R-15	R-18	R-27	R-28	R-29	WTUA LR	WTUA MR	0831	0837	0843	0850	GC RG01	LV RG01	LV RG02	DTW	Max.	Min.	Avg.
12/1/2022	0.10	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	t	39	27	33
12/2/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	31	42
12/3/2022	0.02	0.06	0.05	0.08	0.07	0.01	0.08	0.03	0.06	0.09	0.04	0.10	0.12	0.12	0.14	0.05	0.08	0.07	0.03	53	26	40
12/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	20	29
12/5/2022	0	0	0	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	45	25	35
12/6/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	47	40	44
12/7/2022	0.02	0	0	0	0.02	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	0.01	47	42	45
12/8/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	34	39
12/9/2022	0	0	0	0	0	0	0	0	0	0	0	0.06	0.04	0.05	0.04	0	0	0	t	38	32	35
12/10/2022	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0.01	t	37	32	35
12/11/2022	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	t	41	35	38
12/12/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	32	35
12/13/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	30	33
12/14/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	32	37
12/15/2022	0.69	0.61	0.76	0.65	0.67	0.57	0.69	0.60	0.65	0.62	0.54	0.52	0.58	0.64	0.52	0.61	0.60	0.59	0.74	45	36	41
12/16/2022	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0.02	0	0	0	t	36	30	33
12/17/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	31	27	29
12/18/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	28	23	26
12/19/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	30	24	27
12/20/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	25	30
12/21/2022	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	33	22	28
12/22/2022	0.28	0.22	0.31	0.27	0.27	0.24	0.28	0.28	0.29	0.29	0.18	0.30	0.32	0.33	0.21	0.30	0.30	0.27	0.25	41	30	36
12/23/2022	0	0.01	0.02	0.02	0	0	0.03	0.02	0.04	0.01	0	0.03	0.02	0.02	0.01	0	0.01	0	0.11	34	0	17
12/24/2022	0	0	0	0	0	0	0	0	0	0	0	0.01	0.02	0	0	0	0	0	0.02	15	1	8
12/25/2022	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0.05	16	12	14
12/26/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	22	13	18
12/27/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	t	29	19	24
12/28/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	29	35
12/29/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	33	43
12/30/2022	0.66	0.43	0.60	0.52	0.61	0.59	0.60	0.55	0.49	0.63	0.58	0.49	0.46	0.40	0.36	0.57	0.55	0.44	0.62	55	47	51
12/31/2022	0.50	0.37	0.49	0.46	0.55	0.41	0.55	0.49	0.54	0.42	0.32	0.46	0.39	0.39	0.37	0.46	0.45	0.40	0.50	47	37	42
Total	1.77	1.35	1.74	1.54	1.74	1.52	1.69	1.48	1.54	1.64	1.34	1.53	1.58	1.56	1.31	1.53	1.54	1.38	2.34	38	27	33

Legend:

X.XX*	Missing or suspect data (not used).
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-15
Rouge Valley Sewage Disposal System
Summary of Rainfall for Significant Storm Events in 2022

Period:1/1/2022 through 12/31/2022

Significant Storm Event No.[1]	Start Date/Time	Stop Date/Time	Duration (hours)	Preceding Week Rainfall (inches)	Event Precipitation Depth (inches)[2]				Coefficient of Variation[4]
					Minimum	Average[3]	Maximum	Std. Dev	
1	2/16/22	2/18/22	47	0.15	0.31	1.00	1.30	0.29	29%
2	4/22/22	4/25/22	70	0.68	0.60	1.15	1.60	0.31	27%
3	6/6/22	6/9/22	67	0.28	1.27	1.84	2.45	0.38	21%
4	7/5/22	7/8/22	90	0.30	0.21	1.15	2.19	0.58	51%
5	8/3/22	8/5/22	38	0.01	0.62	1.43	2.18	0.44	31%

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 values presented in this table are a summary of RVSDS rain gages.

3. The average precipitation value is an arithmetic average of the collection of point gages.

4. 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.

Table 5-16

Rouge Valley Sewage Disposal System

Rainfall Event Summary Table

Significant Storm Event 1
Start Date: 2/16/2022
Stop Date: 2/18/2022

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	0.17	0.27	0.37	0.56	0.72	1.09	1.18	1.18	1.18
R-11	0.21	0.32	0.41	0.63	0.71	1.24	1.28	1.29	1.28
R-12	0.17	0.27	0.37	0.57	0.73	1.28	1.30	1.31	1.30
R-13	0.14	0.26	0.35	0.56	0.74	1.20	1.24	1.24	1.24
R-15	0.16	0.28	0.37	0.58	0.74	1.02	1.05	1.05	1.05
R-18	0.15	0.25	0.35	0.53	0.70	1.05	1.07	1.07	1.07
R-27	0.15	0.27	0.35	0.57	0.76	1.05	1.06	1.06	1.06
R-28	0.16	0.26	0.35	0.57	0.74	1.22	1.23	1.23	1.23
R-29	0.18	0.28	0.38	0.57	0.69	1.05	1.08	1.09	1.08
WTUA LR	0.06	0.10	0.15	0.22	0.26	0.44	0.44	0.44	0.44
WTUA MR	0.06	0.10	0.14	0.17	0.23	0.31	0.31	0.31	0.31
0831	0.20	0.33	0.41	0.62	0.72	1.18	1.22	1.23	1.22
0837	0.19	0.30	0.39	0.62	0.69	0.82	0.83	0.83	0.83
0843	0.19	0.31	0.41	0.64	0.69	1.11	1.12	1.12	1.12
0850	0.14	0.24	0.34	0.52	0.56	0.99	1.02	1.03	1.02
GC RG01	0.15	0.26	0.35	0.54	0.69	0.72	0.72	0.72	0.72
LV RG01	0.17	0.27	0.35	0.54	0.67	0.70	0.84	0.84	0.83
LV RG02	0.20	0.30	0.38	0.60	0.68	0.70	0.70	0.70	0.70
DTW	0.15	0.26	0.42	0.57	0.74	1.27	1.29	1.30	1.29
Minimum	0.06	0.10	0.14	0.17	0.23	0.31	0.31	0.31	0.31
Average	0.16	0.26	0.35	0.54	0.66	0.97	1.00	1.00	1.00
Maximum	0.21	0.33	0.42	0.64	0.76	1.28	1.30	1.31	1.30
							Standard Deviation (in):		0.29
							Coefficient of Variation:		29%

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-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 5-17

Rouge Valley Sewage Disposal System

Rainfall Event Summary Table

Significant Storm Event 2
Start Date: 4/22/2022
Stop Date: 4/25/2022

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	0.34	0.57	0.83	0.98	1.01	1.01	1.18	1.29	1.29
R-11	0.23	0.44	0.52	0.66	0.83	0.83	0.92	1.10	1.10
R-12	0.43	0.70	0.90	1.13	1.23	1.23	1.32	1.47	1.47
R-13	0.33	0.57	0.79	0.99	1.04	1.04	1.24	1.34	1.34
R-15	0.38	0.54	0.92	1.08	1.16	1.16	1.32	1.46	1.45
R-18	0.34	0.54	0.77	0.90	0.94	0.94	1.15	1.25	1.25
R-27	0.36	0.55	0.87	1.12	1.20	1.20	1.35	1.47	1.47
R-28	0.34	0.50	0.65	0.84	0.95	0.95	1.07	1.23	1.23
R-29	0.16	0.28	0.33	0.45	0.59	0.60	0.66	0.88	0.88
WTUA LR	0.36	0.66	0.85	0.98	1.05	1.05	1.21	1.34	1.31
WTUA MR	0.45	0.72	1.07	1.27	1.39	1.39	1.42	1.60	1.60
0831	0.11	0.17	0.19	0.23	0.35	0.35	0.35	0.60	0.60
0837	0.12	0.19	0.23	0.27	0.41	0.41	0.42	0.66	0.66
0843	0.16	0.25	0.30	0.36	0.50	0.50	0.59	0.81	0.81
0850	0.15	0.25	0.31	0.38	0.53	0.53	0.57	0.73	0.73
GC RG01	0.40	0.63	0.91	1.12	1.20	1.20	1.30	1.44	1.44
LV RG01	0.42	0.63	0.75	0.94	1.08	1.08	1.11	1.31	1.30
LV RG02	0.20	0.33	0.42	0.54	0.71	0.71	0.72	0.89	0.89
DTW	-	-	-	-	-	-	-	-	1.02
Minimum	0.11	0.17	0.19	0.23	0.35	0.35	0.35	0.60	0.60
Average	0.29	0.47	0.65	0.79	0.90	0.90	0.99	1.16	1.15
Maximum	0.45	0.72	1.07	1.27	1.39	1.39	1.42	1.60	1.60
							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-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	-	-	-	-	-	-	-	-	-
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 5-18

Rouge Valley Sewage Disposal System

Rainfall Event Summary Table

Significant Storm Event 3
Start Date: 6/6/2022
Stop Date: 6/9/2022

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	0.39	0.62	0.68	0.81	0.93	0.95	1.49	1.68	1.67
R-11	0.24	0.38	0.53	0.73	0.84	0.89	1.19	1.35	1.35
R-12	0.33	0.65	0.94	1.37	1.42	1.47	1.82	2.04	2.04
R-13	1.03	1.29	1.36	1.53	1.64	1.66	2.05	2.26	2.26
R-15	0.76	0.91	1.06	1.27	1.40	1.43	1.51	1.86	1.86
R-18	0.50	0.50	0.52	0.68	1.18	1.30	1.71	1.88	1.88
R-27	1.11	1.39	1.48	1.64	1.72	1.73	2.25	2.45	2.45
R-28	0.78	1.19	1.38	1.61	1.66	1.68	2.03	2.29	2.29
R-29	0.62	0.91	0.99	1.21	1.27	1.31	1.65	1.85	1.85
WTUA LR	0.70	0.91	0.94	1.19	1.29	1.35	1.71	1.90	1.90
WTUA MR	1.07	1.32	1.39	1.62	1.69	1.73	2.10	2.25	2.25
0831	0.52	0.80	0.99	1.24	1.29	1.34	1.64	2.03	1.81
0837	0.28	0.45	0.60	0.81	0.86	0.91	1.17	1.38	1.29
0843	0.23	0.37	0.49	0.73	0.81	0.85	1.13	1.27	1.27
0850	0.26	0.40	0.52	0.70	0.84	0.86	1.21	1.34	1.34
GC RG01	0.76	1.09	1.15	1.34	1.43	1.47	1.83	2.10	2.10
LV RG01	1.11	1.38	1.43	1.65	1.71	1.75	2.09	2.33	2.33
LV RG02	0.29	0.45	0.60	0.80	0.88	0.95	1.27	1.41	1.41
DTW	0.39	0.53	0.66	0.73	0.85	0.92	1.39	1.65	1.65
Minimum	0.23	0.37	0.49	0.68	0.81	0.85	1.13	1.27	1.27
Average	0.60	0.82	0.93	1.14	1.25	1.29	1.64	1.86	1.84
Maximum	1.11	1.39	1.48	1.65	1.72	1.75	2.25	2.45	2.45

Standard Deviation (in):	0.38
Coefficient of Variation:	21%

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	2	1	< 1	< 1	< 1	< 1	< 1	2
R-15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R-27	2	2	2	1	< 1	< 1	< 1	< 1	2
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	2	2	1	1	< 1	< 1	< 1	< 1	2
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	2	2	2	1	< 1	< 1	< 1	< 1	2
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	2	2	2	1	< 1	< 1	< 1	< 1	2

\- 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 5-19

Rouge Valley Sewage Disposal System

Rainfall Event Summary Table

Significant Storm Event 4
Start Date: 7/5/2022
Stop Date: 7/8/2022

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	0.33	0.39	0.39	0.39	0.39	0.61	0.61	0.93
R-11	0.73	0.85	0.87	0.89	0.89	0.89	0.95	1.35	1.84
R-12	0.90	0.98	1.04	1.07	1.07	1.07	1.07	1.34	1.69
R-13	0.32	0.51	0.59	0.60	0.60	0.60	0.84	0.84	1.20
R-15	0.26	0.39	0.46	0.47	0.47	0.47	0.66	0.66	0.80
R-18	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.16	0.21
R-27	0.57	0.61	0.78	0.78	0.78	0.78	0.78	0.91	1.40
R-28	0.44	0.46	0.46	0.46	0.46	0.46	0.82	0.89	1.28
R-29	1.45	1.56	1.56	1.57	1.57	1.57	1.57	1.65	2.19
WTUA LR	0.13	0.18	0.21	0.24	0.31	0.73	1.01	1.11	0.40
WTUA MR	1.20	1.30	1.43	1.45	1.45	1.45	1.45	1.54	1.90
0831	0.20	0.29	0.35	0.41	0.41	0.41	0.46	0.46	0.68
0837	0.16	0.28	0.34	0.38	0.38	0.38	0.43	0.43	0.52
0843	0.70	0.70	0.71	0.73	0.73	0.73	0.73	0.80	1.22
0850	0.15	0.28	0.34	0.37	0.37	0.37	0.49	0.49	0.51
GC RG01	0.27	0.33	0.39	0.41	0.41	0.41	0.62	0.62	0.97
LV RG01	0.92	1.18	1.20	1.21	1.21	1.21	1.21	1.56	1.92
LV RG02	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
DTW	0.29	0.36	0.44	0.44	0.44	0.44	0.64	0.64	0.96
Minimum	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.16	0.21
Average	0.50	0.59	0.65	0.67	0.67	0.69	0.80	0.89	1.15
Maximum	1.45	1.56	1.56	1.57	1.57	1.57	1.57	1.65	2.19
							Standard Deviation (in):		0.58
							Coefficient of Variation:		51%

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-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	5	3	2	1	< 1	< 1	< 1	< 1	5
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	2	2	2	< 1	< 1	< 1	< 1	< 1	2
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	5	3	2	1	< 1	< 1	< 1	< 1	5

- 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 5-20

Rouge Valley Sewage Disposal System

Rainfall Event Summary Table

Significant Storm Event 5
Start Date: 8/3/2022
Stop Date: 8/5/2022

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	0.58	0.61	0.73	0.91	0.91	0.92	1.57	1.57	1.57
R-11	0.71	0.78	0.83	0.91	0.91	0.92	1.17	1.30	1.17
R-12	0.52	0.60	0.67	0.69	0.69	0.92	0.99	0.99	0.99
R-13	0.36	0.63	0.64	0.66	0.69	0.69	1.15	1.15	1.15
R-15	0.49	0.66	0.67	0.68	0.68	0.68	1.19	1.19	1.19
R-18	0.54	0.57	0.60	0.60	0.60	0.61	0.63	0.63	0.62
R-27	0.72	0.86	0.86	1.01	1.05	1.07	1.70	1.70	1.69
R-28	0.55	0.59	0.67	0.68	0.69	0.82	1.27	1.27	1.27
R-29	1.29	1.37	1.45	1.50	1.50	1.51	1.63	1.63	1.63
WTUA LR	0.34	0.34	0.46	0.58	0.71	0.72	1.10	1.10	1.10
WTUA MR	0.50	0.63	0.72	0.75	0.75	0.90	1.34	1.34	1.34
0831	1.47	1.59	1.66	1.72	1.72	1.72	2.36	2.37	2.18
0837	1.20	1.28	1.34	1.41	1.41	1.49	1.61	1.61	1.60
0843	0.82	0.97	1.03	1.11	1.12	1.52	1.84	1.94	1.84
0850	1.11	1.57	1.62	1.71	1.71	1.84	2.08	2.08	2.08
GC RG01	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
LV RG01	1.10	1.20	1.26	1.31	1.31	1.82	2.00	2.00	2.00
LV RG02	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*
DTW	0.39	0.43	0.48	0.48	0.48	0.51	0.99	0.99	0.95
Minimum	0.34	0.34	0.46	0.48	0.48	0.51	0.63	0.63	0.62
Average	0.75	0.86	0.92	0.98	1.00	1.10	1.45	1.46	1.43
Maximum	1.47	1.59	1.66	1.72	1.72	1.84	2.36	2.37	2.18
							Standard Deviation (in):		0.44
							Coefficient of Variation:		31%

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-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	3	2	2	< 1	< 1	< 1	< 1	< 1	3
WTUA LR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
WTUA MR	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0831	6	4	3	2	< 1	< 1	< 1	< 1	6
0837	3	2	1	< 1	< 1	< 1	< 1	< 1	3
0843	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
0850	2	3	2	1	< 1	< 1	< 1	< 1	3
GC RG01	-	-	-	-	-	-	-	-	-
LV RG01	2	1	< 1	< 1	< 1	< 1	< 1	< 1	2
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	6	4	3	2	< 1	< 1	< 1	< 1	6

- 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.

6.0 Flow Meter Summary

Tables 6-1 through 6-5 list the peak hourly flow rates and peak hydraulic grade lines for the RVSDS flow meters for each significant storm event. Symbols are used to identify the peak hydraulic grade lines conditions as: within the pipe, surcharging above the crown of the pipe but below grade, surcharging above the crown of the pipe but grade elevation is unknown, surcharging above grade, or surcharging exceeded the level sensors top of range.

Table 6-6 provides a flow rate continuity check between meter groupings. The incremental flow rate for each meter grouping is the sum of the downstream flow meters minus the sum of the upstream flow meters. Estimating incremental flow rates between meter groupings helps evaluate the flow meter operations and helps to identify potential metering issues.

Table 6-7 lists the monthly average dry weather flow rates and estimated per capita flow rates for multiple meter groupings. Estimating per capita flow rates throughout the RVSDS helps evaluate the flow meter operations and helps to identify potential metering issues.

Figure 6-1 plots the sum of the monthly customer flow rates versus the sum of the monthly outlet meter flow rates for each month in 2022. Comparing these values to the 1:1 line provides a valuable assessment of the estimated community flow rates. Estimated interceptor infiltration and inflow has not been deducted from community flow rates.

Table 6-1
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary for Significant Storm Event 1

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 1 2/16-18/2022 0.98 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	15.09	2/17/22 7:00	-	-	-	-
	P-1	NAI	48	740.82	716.31	18.75	2/17/22 8:00	717.94	1.63	○	2/17/22 8:35
	P-3	MRIR	36	681.37	652.48	16.77	2/17/22 9:50	654.07	1.59	○	2/17/22 10:30
	P-26	PWI	30	649.24	647.86	2.26	2/17/22 9:15	648.59	0.73	○	2/17/22 9:25
	P-7	PWI	48	649.09	625.23	3.02	2/17/22 11:10	626.58	1.35	○	2/17/22 10:55
	LV-16	CS	48	-	627.38	5.87	2/17/22 8:35	628.45	1.07	○	2/17/22 9:10
	FE-22	RVI	48	685.04	644.88	1.59	2/17/22 18:10	645.50	0.62	○	2/19/22 14:00
	P-8	RVI	48	645.40	621.80	2.90	2/17/22 19:50	622.52	0.72	○	2/17/22 20:45
	WE-14	CS	42	-	613.48	7.78	2/17/22 8:50	615.24	1.76	○	2/17/22 9:10
	LV-15	CS	60	636.29	617.03	4.67	2/17/22 6:25	619.37	2.34	○	2/17/22 9:05
	M-22 MP#1	CS	42	630.49	614.41	-	-	619.55	5.14	◉	2/17/22 8:50
	M-22 MP#2	CS	42	630.49	614.41	-	-	623.73	9.32	◉	2/17/22 20:45
	M-2	CS	27	636.70	612.39	9.76	2/17/22 9:00	614.21	1.82	○	2/17/22 8:25
	M-1	CS	72	630.59	607.59	18.25	2/17/22 8:35	615.80	8.21	◉	2/17/22 21:10
	LV-14	CS	60	612.02	605.57	6.86	2/17/22 7:40	606.63	1.06	○	2/17/22 7:55
	P-28	RVI	54	629.02	607.92	6.73	2/17/22 7:10	610.33	2.41	○	2/17/22 8:55
	P-29	CS	42	-	-	9.14	2/17/22 8:30	-	2.55	○	2/17/22 9:15
	LV-20	CS	54	-	-	-	-	-	0.19	○	2/18/22 15:30
	LV-BASIN	RVI	54	632.00	602.01	27.65	2/17/22 8:10	607.18	5.17	◉	2/17/22 9:25
	LV-4	CS	30	652.59	638.51	8.19	2/17/22 6:50	640.42	1.91	○	2/17/22 7:20
	LV-11	CS	42	-	-	14.10	2/17/22 8:30	-	1.33	○	2/17/22 9:00
	P-12	RVI	60	613.41	597.67	39.46	2/17/22 10:15	600.79	3.12	○	2/17/22 11:00
	P-9	MRIR	42	610.36	597.01	20.78	2/17/22 9:25	600.07	3.06	○	2/17/22 10:45
	P-10	RVI	66	607.65	595.62	62.28	2/17/22 11:25	599.30	3.68	○	2/17/22 11:10
	P-11	MRPIE	48	607.91	596.68	33.40	2/17/22 10:35	600.48	3.80	○	2/17/22 10:50
	P-13	MRPIE	54	613.22	586.85	31.38	2/17/22 6:30	593.75	6.90	◉	2/17/22 10:35
	P-35	MRIR	54	597.62	584.15	38.59	2/17/22 11:45	592.04	7.89	◉	2/17/22 10:50
	P-34	RVI	62	595.60	582.30	58.38	2/17/22 12:05	591.16	8.86	◉	2/17/22 10:35
	P-33	MRPIE	48	597.01	585.22	30.31	2/17/22 6:30	591.97	6.75	◉	2/17/22 10:40
	P-32	MRIR	66	597.03	578.79	48.08	2/17/22 10:50	588.73	9.94	◉	2/17/22 10:25
	P-31	RVI	78	599.00	578.71	97.01	2/17/22 10:45	589.09	10.38	◉	2/17/22 10:30
	P-30	MRPIE	60	593.00	580.29	46.40	2/17/22 10:05	589.17	8.88	◉	2/17/22 10:25
	P-14	RVI	78	604.91	570.93	102.29	2/17/22 21:15	583.36	12.43	◉	2/17/22 11:15
Lower Rouge	P-15	WRVI	24	667.57	651.67	3.33	2/17/22 9:50	653.01	1.34	○	2/17/22 10:25
	P-17	LRIR	30	641.21	632.39	6.99	2/17/22 11:15	633.95	1.56	○	2/17/22 11:50
	FE-19	CS	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	7.55	2/17/22 8:05	-	1.29	○	2/17/22 8:55
	P-19	RVI	48	630.34	621.54	16.27	2/17/22 9:30	623.54	2.00	○	2/17/22 9:55
	WE-28	CS	30	-	-	5.00	2/17/22 7:45	-	1.01	○	2/17/22 8:45
	P-21	RVI	54	620.17	608.14	25.03	2/17/22 9:45	610.04	1.90	○	2/17/22 9:50
	P-25	RVI	60	598.36	588.06	50.78	2/17/22 14:55	592.98	4.92	○	2/17/22 11:30
	P-20	WI	48	630.66	619.72	12.32	2/17/22 6:35	622.26	2.54	○	2/17/22 7:20
	P-24	RVI	36	594.24	584.52	18.87	2/17/22 8:10	590.01	5.49	◉	2/17/22 11:05
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	164.07	2/17/22 20:25	575.11	20.21	◉	2/17/22 9:10
	WC-S-1	RVI	66	586.88	500.94	186.60	2/17/22 23:20	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	113.03	2/17/22 12:25	-	-	-	-
	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 6-2
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary for Significant Storm Event 2

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 2 4/22-25/2022 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	11.41	4/23/22 10:20	-	-	-	-
	P-1	NAI	48	740.82	716.31	14.23	4/23/22 11:20	717.67	1.36	○	4/23/22 11:25
	P-3	MRIR	36	681.37	652.48	15.84	4/23/22 13:35	653.95	1.47	○	4/23/22 13:45
	P-26	PWI	30	649.24	647.86	1.53	4/23/22 12:40	648.39	0.53	○	4/23/22 13:30
	P-7	PWI	48	649.09	625.23	2.64	4/23/22 13:05	626.52	1.29	○	4/23/22 14:40
	LV-16	CS	48	-	627.38	7.59	4/23/22 2:45	628.73	1.35	○	4/23/22 3:20
	FE-22	RVI	48	685.04	644.88	2.47	4/23/22 8:55	645.59	0.71	○	4/23/22 11:00
	P-8	RVI	48	645.40	621.80	4.06	4/23/22 10:35	622.65	0.85	○	4/23/22 10:45
	WE-14	CS	42	-	613.48	9.54	4/23/22 3:30	615.55	2.07	○	4/23/22 4:05
	LV-15	CS	60	636.29	617.03	5.54	4/23/22 3:00	620.04	3.01	○	4/23/22 5:20
	M-22 MP#1	CS	42	630.49	614.41	-	-	620.32	5.91	◉	4/23/22 5:00
	M-22 MP#2	CS	42	630.49	614.41	-	-	623.57	9.16	◉	4/23/22 15:10
	M-2	CS	27	636.70	612.39	14.67	4/23/22 4:05	614.76	2.37	◉	4/23/22 4:35
	M-1	CS	72	630.59	607.59	27.94	4/23/22 4:25	616.62	9.03	◉	4/23/22 4:00
	LV-14	CS	60	612.02	605.57	8.54	4/23/22 3:40	606.78	1.21	○	4/23/22 4:05
	P-28	RVI	54	629.02	607.92	4.93	4/23/22 11:20	609.72	1.80	○	4/23/22 11:50
	P-29	CS	42	-	-	6.92	4/23/22 11:15	-	1.99	○	4/23/22 12:15
	LV-20	CS	54	-	-	-	-	-	0.21	○	4/24/22 11:20
	LV-BASIN	RVI	54	632.00	602.01	23.68	4/23/22 11:50	606.38	4.37	○	4/23/22 5:40
	LV-4	CS	30	652.59	638.51	9.01	4/23/22 2:35	640.50	1.99	○	4/23/22 3:10
	LV-11	CS	42	-	-	13.62	4/23/22 4:55	-	1.30	○	4/23/22 5:10
	P-12	RVI	60	613.41	597.67	34.42	4/23/22 5:45	600.39	2.72	○	4/23/22 16:15
	P-9	MRIR	42	610.36	597.01	21.51	4/23/22 4:50	599.92	2.91	○	4/23/22 5:30
	P-10	RVI	66	607.65	595.62	62.14	4/23/22 6:30	599.20	3.58	○	4/23/22 5:40
	P-11	MRPIE	48	607.91	596.68	34.94	4/23/22 4:45	600.46	3.78	○	4/23/22 5:00
	P-13	MRPIE	54	613.22	586.85	26.73	4/23/22 3:40	590.81	3.96	○	4/23/22 6:25
	P-35	MRIR	54	597.62	584.15	45.06	4/23/22 4:35	590.12	5.97	◉	4/23/22 6:35
	P-34	RVI	62	595.60	582.30	72.48	4/23/22 7:15	589.29	6.99	◉	4/23/22 6:25
	P-33	MRPIE	48	597.01	585.22	34.72	4/23/22 4:20	590.06	4.84	◉	4/23/22 6:30
	P-32	MRIR	66	597.03	578.79	46.84	4/23/22 3:50	586.86	8.07	◉	4/23/22 6:15
	P-31	RVI	78	599.00	578.71	96.17	4/23/22 7:15	587.25	8.54	◉	4/23/22 6:20
	P-30	MRPIE	60	593.00	580.29	46.03	4/23/22 7:20	587.37	7.08	◉	4/23/22 6:20
	P-14	RVI	78	604.91	570.93	110.09	4/23/22 10:15	580.46	9.53	◉	4/23/22 6:20
Lower Rouge	P-15	WRVI	24	667.57	651.67	3.29	4/23/22 4:15	653.01	1.34	○	4/23/22 4:40
	P-17	LRIR	30	641.21	632.39	6.14	4/23/22 9:00	633.83	1.44	○	4/23/22 9:15
	FE-19	CS	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	9.34	4/23/22 5:20	-	1.71	○	4/23/22 7:00
	P-19	RVI	48	630.34	621.54	16.90	4/23/22 9:25	623.52	1.98	○	4/23/22 9:15
	WE-28	CS	30	-	-	7.00	4/23/22 4:10	-	1.27	○	4/23/22 4:45
	P-21	RVI	54	620.17	608.14	26.84	4/23/22 4:05	610.10	1.96	○	4/23/22 4:15
	P-25	RVI	60	598.36	588.06	48.84	4/23/22 5:15	591.10	3.04	○	4/23/22 5:40
	P-20	WI	48	630.66	619.72	14.23	4/23/22 3:55	622.55	2.83	○	4/23/22 4:00
	P-24	RVI	36	594.24	584.52	19.42	4/23/22 4:10	586.91	2.39	○	4/23/22 6:25
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	181.11	4/23/22 7:25	569.68	14.78	◉	4/23/22 5:40
	WC-S-1	RVI	66	586.88	500.94	190.87	4/23/22 12:45	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	95.00	4/23/2022 7:50	-	-	-	-
	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 6-3
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary for Significant Storm Event 3

\	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 3 6/6-9/2022 1.84 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	10.30	6/8/22 20:25	-	-	-	-
	P-1	NAI	48	740.82	716.31	12.86	6/8/22 21:25	717.58	1.27	○	6/8/22 21:40
	P-3	MRIR	36	681.37	652.48	14.33	6/8/22 23:45	653.71	1.23	○	6/6/22 0:35
	P-26	PWI	30	649.24	647.86	1.05	6/8/22 23:00	648.25	0.39	○	6/8/22 23:40
	P-7	PWI	48	649.09	625.23	2.25	6/6/22 23:45	626.46	1.23	○	6/7/22 0:10
	LV-16	CS	48	-	627.38	7.84	6/6/22 22:50	628.68	1.30	○	6/6/22 23:25
	FE-22	RVI	48	685.04	644.88	1.83	6/6/22 19:55	645.55	0.67	○	6/7/22 8:00
	P-8	RVI	48	645.40	621.80	3.22	6/6/22 21:35	622.55	0.75	○	6/7/22 14:20
	WE-14	CS	42	-	613.48	7.24	6/6/22 22:35	614.74	1.26	○	6/6/22 0:00
	LV-15	CS	60	636.29	617.03	5.26	6/6/22 23:30	619.21	2.18	○	6/7/22 1:05
	M-22 MP#1	CS	42	630.49	614.41	-	-	619.45	5.04	◉	6/7/22 0:50
	M-22 MP#2	CS	42	630.49	614.41	-	-	623.00	8.59	◉	6/7/22 10:10
	M-2	CS	27	636.70	612.39	10.28	6/6/22 23:30	613.76	1.37	○	6/8/22 20:30
	M-1	CS	72	630.59	607.59	20.15	6/7/22 0:25	608.66	1.07	○	6/6/22 8:50
	LV-14	CS	60	612.02	605.57	6.97	6/6/22 23:50	606.03	0.46	○	6/6/22 7:25
	P-28	RVI	54	629.02	607.92	4.09	6/8/22 20:35	609.42	1.50	○	6/8/22 22:00
	P-29	CS	42	-	-	5.66	6/8/22 21:45	-	1.72	○	6/8/22 22:20
	LV-20	CS	54	-	-	-	-	-	0.15	○	6/6/22 0:00
	LV-BASIN	RVI	54	632.00	602.01	18.58	6/8/22 21:55	604.51	2.50	○	6/6/22 0:00
	LV-4	CS	30	652.59	638.51	7.11	6/8/22 19:35	639.79	1.28	○	6/6/22 7:00
	LV-11	CS	42	-	-	12.49	6/6/22 23:55	-	1.25	○	6/7/22 0:05
	P-12	RVI	60	613.41	597.67	25.67	6/7/22 1:55	600.28	2.61	○	6/7/22 2:15
	P-9	MRIR	42	610.36	597.01	11.06	6/7/22 1:10	597.93	0.92	○	6/6/22 0:00
	P-10	RVI	66	607.65	595.62	52.92	6/7/22 1:20	598.84	3.22	○	6/7/22 1:55
	P-11	MRPIE	48	607.91	596.68	29.36	6/7/22 0:55	598.39	1.71	○	6/6/22 0:00
	P-13	MRPIE	54	613.22	586.85	31.93	6/7/22 0:20	593.74	6.89	◉	6/7/22 3:20
	P-35	MRIR	54	597.62	584.15	39.49	6/7/22 1:15	592.16	8.01	◉	6/7/22 3:55
	P-34	RVI	62	595.60	582.30	61.06	6/7/22 4:30	591.39	9.09	◉	6/7/22 3:50
	P-33	MRPIE	48	597.01	585.22	34.26	6/7/22 0:50	592.18	6.96	◉	6/7/22 3:20
	P-32	MRIR	66	597.03	578.79	43.99	6/7/22 4:30	589.42	10.63	◉	6/7/22 3:40
	P-31	RVI	78	599.00	578.71	91.96	6/7/22 4:40	589.80	11.09	◉	6/7/22 3:15
	P-30	MRPIE	60	593.00	580.29	52.27	6/7/22 4:30	582.69	2.40	○	6/6/22 0:00
	P-14	RVI	78	604.91	570.93	107.45	6/7/22 5:10	573.58	2.65	○	6/6/22 0:00
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.24	6/8/22 21:35	652.72	1.05	○	6/8/22 22:15
	P-17	LRIR	30	641.21	632.39	5.21	6/8/22 20:30	633.15	0.76	○	6/6/22 1:35
	FE-19	CS	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	7.17	6/7/22 1:45	-	1.27	○	6/7/22 2:25
	P-19	RVI	48	630.34	621.54	11.53	6/8/22 21:20	622.62	1.08	○	6/6/22 0:05
	WE-28	CS	30	-	-	6.29	6/7/22 0:40	-	1.19	○	6/7/22 1:15
	P-21	RVI	54	620.17	608.14	17.72	6/8/22 21:30	609.19	1.05	○	6/6/22 0:00
	P-25	RVI	60	598.36	588.06	43.29	6/7/22 1:40	592.18	4.12	○	6/7/22 3:20
	P-20	WI	48	630.66	619.72	14.19	6/7/22 1:00	622.59	2.87	○	6/7/22 1:20
	P-24	RVI	36	594.24	584.52	23.15	6/7/22 1:50	585.34	0.82	○	6/6/22 0:00
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	174.98	6/7/22 5:15	558.11	3.21	○	6/6/22 0:00
	WC-S-1	RVI	66	586.88	500.94	182.23	6/7/22 5:45	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	94.90	6/7/22 2:30	-	-	-	-
	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 6-4
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary for Significant Storm Event 4

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 4 7/5-8/2022 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	9.23	7/6/2022 10:40	-	-	-	-
	P-1	NAI	48	740.82	716.31	11.55	7/6/2022 11:40	717.51	1.20	○	7/6/2022 12:25
	P-3	MRIR	36	681.37	652.48	14.47	7/8/2022 16:15	653.84	1.36	○	7/8/2022 16:15
	P-26	PWI	30	649.24	647.86	0.99	7/8/2022 15:20	648.24	0.38	○	7/8/2022 15:40
	P-7	PWI	48	649.09	625.23	1.62	7/8/2022 17:55	-	-	-	-
	LV-16	CS	48	-	627.38	9.04	7/8/2022 14:55	628.75	1.37	○	7/8/2022 15:20
	FE-22	RVI	48	685.04	644.88	1.16	7/8/2022 15:00	645.48	0.60	○	7/8/2022 16:00
	P-8	RVI	48	645.40	621.80	2.33	7/8/2022 16:40	622.47	0.67	○	7/8/2022 16:45
	WE-14	CS	42	-	613.48	7.05	7/8/2022 16:50	615.14	1.66	○	7/8/2022 17:20
	LV-15	CS	60	636.29	617.03	5.05	7/8/2022 15:10	619.03	2.00	○	7/8/2022 16:35
	M-22 MP#1	CS	42	630.49	614.41	-	-	619.24	4.83	◉	7/8/2022 16:25
	M-22 MP#2	CS	42	630.49	614.41	-	-	622.45	8.04	◉	7/8/2022 23:55
	M-2	CS	27	636.70	612.39	4.75	7/8/2022 15:35	613.57	1.18	○	7/8/2022 16:00
	M-1	CS	72	630.59	607.59	8.74	7/8/2022 16:10	609.22	1.63	○	7/8/2022 16:40
	LV-14	CS	60	612.02	605.57	9.96	7/8/2022 15:30	606.94	1.37	○	7/8/2022 16:00
	P-28	RVI	54	629.02	607.92	4.57	7/8/2022 15:45	609.44	1.52	○	7/8/2022 16:10
	P-29	CS	42	-	-	4.90	7/6/2022 12:15	-	1.72	○	7/8/2022 16:25
	LV-20	CS	54	-	-	-	-	-	-	-	-
	LV-BASIN	RVI	54	632.00	602.01	16.65	7/8/2022 17:30	606.05	4.04	○	7/8/2022 19:30
	LV-4	CS	30	652.59	638.51	6.16	7/6/2022 10:05	-	-	-	-
	LV-11	CS	42	-	-	17.46	7/8/2022 15:20	-	-	-	-
	P-12	RVI	60	613.41	597.67	28.68	7/8/2022 17:10	-	-	-	-
	P-9	MRIR	42	610.36	597.01	13.97	7/8/2022 16:45	599.12	2.11	○	7/8/2022 17:05
	P-10	RVI	66	607.65	595.62	45.27	7/8/2022 17:05	598.39	2.77	○	7/8/2022 17:40
	P-11	MRPIE	48	607.91	596.68	27.62	7/8/2022 16:30	599.39	2.71	○	7/8/2022 16:50
	P-13	MRPIE	54	613.22	586.85	30.24	7/8/2022 16:45	590.04	3.19	○	7/8/2022 17:15
	P-35	MRIR	54	597.62	584.15	31.40	7/8/2022 17:40	587.46	3.31	○	7/8/2022 18:05
	P-34	RVI	62	595.60	582.30	43.49	7/8/2022 18:00	585.94	3.64	○	7/8/2022 18:10
	P-33	MRPIE	48	597.01	585.22	22.58	7/8/2022 17:15	587.30	2.08	○	7/8/2022 17:55
	P-32	MRIR	66	597.03	578.79	41.16	7/8/2022 17:35	582.32	3.53	○	7/8/2022 18:15
	P-31	RVI	78	599.00	578.71	63.63	7/8/2022 17:30	582.66	3.95	○	7/8/2022 18:15
	P-30	MRPIE	60	593.00	580.29	36.22	7/8/2022 17:40	583.49	3.20	○	7/8/2022 18:15
	P-14	RVI	78	604.91	570.93	82.36	7/8/2022 18:45	574.94	4.01	○	7/8/2022 19:15
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.24	7/8/2022 17:50	652.74	1.07	○	7/8/2022 18:20
	P-17	LRIR	30	641.21	632.39	4.19	7/8/2022 15:25	633.72	1.33	○	7/8/2022 15:40
	FE-19	CS	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	7.18	7/8/2022 18:00	-	1.33	○	7/8/2022 18:20
	P-19	RVI	48	630.34	621.54	11.81	7/8/2022 17:10	623.18	1.64	○	7/8/2022 17:40
	WE-28	CS	30	-	-	1.59	7/8/2022 16:50	-	0.46	○	7/8/2022 17:20
	P-21	RVI	54	620.17	608.14	14.99	7/8/2022 17:30	609.59	1.45	○	7/8/2022 18:15
	P-25	RVI	60	598.36	588.06	27.86	7/8/2022 15:30	590.12	2.06	○	7/8/2022 17:20
	P-20	WI	48	630.66	619.72	8.37	7/5/2022 4:10	621.67	1.95	○	7/5/2022 4:45
	P-24	RVI	36	594.24	584.52	12.39	7/5/2022 4:10	585.82	1.30	○	7/8/2022 14:30
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	104.09	7/8/2022 20:10	561.59	6.69	○	7/5/2022 7:55
	WC-S-1	RVI	66	586.88	500.94	131.43	7/8/2022 20:35	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	76.33	7/8/2022 19:05	-	-	-	-
	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:	-

Notes

1. Flow monitors LV-4, LV-11, LV-20, P-7 and P-12 were out-of-service for Significant Storm Event 4. The peak recorded hourly flow rates for these devices are estimated, as noted on Table 8-1, and no depth data is available for this event.

Table 6-5
Rouge Valley Sewage Disposal System
Peak Hydraulic Gradeline Summary for Significant Storm Event 5

Branch	Meter	Interceptor	Interceptor Height (inches)	Interceptor Rim (feet, NAVD88)	Interceptor Invert (feet, NAVD88)	Event 5 8/3-5/2022 1.43 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	11.70	8/3/2022 19:05	-	-	-	-
	P-1	NAI	48	740.82	716.31	14.59	8/3/2022 20:05	717.68	1.37	○	8/3/2022 20:35
	P-3	MRIR	36	681.37	652.48	15.82	8/3/2022 21:05	653.90	1.42	○	8/3/2022 21:20
	P-26	PWI	30	649.24	647.86	1.40	8/3/2022 21:20	648.35	0.49	○	8/3/2022 21:40
	P-7	PWI	48	649.09	625.23	1.90	8/3/2022 18:55	626.38	1.15	○	8/3/2022 19:20
	LV-16	CS	48	-	627.38	6.25	8/3/2022 18:30	628.57	1.19	○	8/3/2022 18:45
	FE-22	RVI	48	685.04	644.88	1.08	8/5/2022 10:50	645.45	0.57	○	8/5/2022 12:00
	P-8	RVI	48	645.40	621.80	2.23	8/5/2022 12:30	622.48	0.68	○	8/5/2022 13:10
	WE-14	CS	42	-	613.48	4.62	8/3/2022 21:20	614.79	1.31	○	8/3/2022 21:45
	LV-15	CS	60	636.29	617.03	3.77	8/3/2022 18:20	618.74	1.71	○	8/3/2022 18:45
	M-22 MP#1	CS	42	630.49	614.41	-	-	617.98	3.57	◉	8/3/2022 19:40
	M-22 MP#2	CS	42	630.49	614.41	-	-	621.96	7.55	◉	8/5/2022 8:05
	M-2	CS	27	636.70	612.39	3.82	8/3/2022 18:45	613.44	1.05	○	8/3/2022 18:55
	M-1	CS	72	630.59	607.59	13.18	8/4/2022 21:55	612.15	4.56	○	8/4/2022 23:20
	LV-14	CS	60	612.02	605.57	6.19	8/3/2022 18:55	606.61	1.04	○	8/3/2022 19:25
	P-28	RVI	54	629.02	607.92	4.45	8/3/2022 19:10	609.37	1.45	○	8/3/2022 21:00
	P-29	CS	42	-	-	5.70	8/3/2022 20:30	-	1.69	○	8/3/2022 21:00
	LV-20	CS	54	-	-	-	-	-	-	-	-
	LV-BASIN	RVI	54	632.00	602.01	16.88	8/3/2022 20:35	605.35	3.34	○	8/3/2022 20:45
	LV-4	CS	30	652.59	638.51	6.06	8/3/2022 18:35	640.20	1.69	○	8/3/2022 19:05
	LV-11	CS	42	-	-	9.04	8/3/2022 19:10	-	1.09	○	8/3/2022 19:30
	P-12	RVI	60	613.41	597.67	23.93	8/3/2022 21:50	599.95	2.28	○	8/3/2022 21:30
	P-9	MRIR	42	610.36	597.01	9.54	8/3/2022 21:05	598.61	1.60	○	8/3/2022 21:30
	P-10	RVI	66	607.65	595.62	37.61	8/3/2022 21:00	598.02	2.40	○	8/3/2022 21:05
	P-11	MRPIE	48	607.91	596.68	23.46	8/3/2022 19:50	599.06	2.38	○	8/3/2022 20:25
	P-13	MRPIE	54	613.22	586.85	28.75	8/3/2022 20:20	589.91	3.06	○	8/3/2022 20:45
	P-35	MRIR	54	597.62	584.15	24.95	8/3/2022 21:25	587.07	2.92	○	8/3/2022 21:15
	P-34	RVI	62	595.60	582.30	34.74	8/3/2022 21:05	585.52	3.22	○	8/3/2022 21:20
	P-33	MRPIE	48	597.01	585.22	22.17	8/4/2022 22:50	587.25	2.03	○	8/4/2022 23:15
	P-32	MRIR	66	597.03	578.79	33.98	8/3/2022 20:40	581.88	3.09	○	8/3/2022 21:55
	P-31	RVI	78	599.00	578.71	54.05	8/3/2022 21:05	582.27	3.56	○	8/3/2022 22:00
	P-30	MRPIE	60	593.00	580.29	22.21	8/3/2022 21:05	583.25	2.96	○	8/3/2022 21:35
	P-14	RVI	78	604.91	570.93	75.26	8/3/2022 21:45	574.76	3.83	○	8/3/2022 22:15
Lower Rouge	P-15	WRVI	24	667.57	651.67	2.03	8/4/2022 23:45	652.69	1.02	○	8/5/2022 0:25
	P-17	LRIR	30	641.21	632.39	5.45	8/4/2022 22:30	633.82	1.43	○	8/4/2022 22:45
	FE-19	CS	-	-	-	0.00	-	-	-	-	-
	WE-25	CS	27	-	-	2.76	8/3/2022 21:15	-	0.77	○	8/3/2022 21:45
	P-19	RVI	48	630.34	621.54	9.96	8/4/2022 22:40	623.06	1.52	○	8/4/2022 23:05
	WE-28	CS	30	-	-	2.04	8/4/2022 22:20	-	0.56	○	8/4/2022 22:40
	P-21	RVI	54	620.17	608.14	13.94	8/4/2022 23:00	609.54	1.40	○	8/4/2022 23:30
	P-25	RVI	60	598.36	588.06	31.15	8/5/2022 0:05	590.38	2.32	○	8/5/2022 0:00
	P-20	WI	48	630.66	619.72	12.58	8/4/2022 22:35	622.30	2.58	○	8/4/2022 23:10
	P-24	RVI	36	594.24	584.52	16.95	8/4/2022 23:25	586.01	1.49	○	8/5/2022 0:00
RVSDS Outlet	WC-S-1A	RVI	102	583.84	554.90	102.90	8/4/2022 1:00	562.86	7.96	○	8/3/2022 23:30
	WC-S-1	RVI	66	586.88	500.94	121.59	8/5/2022 2:35	-	-	-	-
	WC-S-2	MRPIE	66	619.47	564.01	49.21	8/3/2022 22:35	-	-	-	-
	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:	-

Notes

1. Flow monitor LV-20 was out-of-service for Significant Storm Event 5. The peak recorded hourly flow rate for this devices is estimated, as noted on Table 8-1, and no depth data is available for this event.

Table 6-6
Rouge Valley Sewage Disposal System
Flow Rate Continuity Check

Meter Grouping	Relative Location	Monthly Average Dry Weather Flow Rate (cfs)												Annual Average (cfs)
		Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	
Comparison 1														
[WC-S-2] + [WC-S-3] + [P-14]	Downstream	59.9	56.2	70.0	73.7	67.1	52.6	43.7	41.4	37.9	36.2	36.8	38.4	51.1
[P-30] + [P-31]+ [P-32]	Upstream	59.7	56.0	69.7	73.3	66.7	52.5	43.6	41.5	37.9	36.2	36.8	38.4	51.0
	Incremental	0.2	0.2	0.3	0.4	0.4	0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.1
Comparison 2														
[WC-S-2] + [WC-S-3] + [P-14]	Downstream	59.9	56.2	70.0	73.7	67.1	52.6	43.7	41.4	37.9	36.2	36.8	38.4	51.1
[P-9] + [P-10] + [P-11] + [P-13]	Upstream	53.5	49.7	61.8	64.4	58.4	46.5	37.8	37.3	33.6	31.7	31.2	32.8	44.9
	Incremental	6.4	6.5	8.2	9.3	8.7	6.1	5.9	4.1	4.3	4.5	5.6	5.6	6.2
Comparison 3														
[P-30] + [P-31]+ [P-32]	Downstream	59.7	56.0	69.7	73.3	66.7	52.5	43.6	41.5	37.9	36.2	36.8	38.4	51.0
[P-13] + [P-33] + [P-34]+ [P-35]	Upstream	58.3	55.2	68.1	72.2	64.8	51.6	42.3	41.8	38.0	35.0	35.3	37.0	49.9
	Incremental	1.4	0.8	1.6	1.1	1.9	0.9	1.3	-0.3	-0.1	1.2	1.5	1.4	1.1
Comparison 4														
[P-33] + [P-34] + [P-35]	Downstream	48.4	46.3	56.2	59.7	53.9	43.5	36.4	35.9	32.7	30.4	30.7	32.1	42.2
[P-9] + [P-10] + [P-11]	Upstream	43.6	40.8	49.9	51.9	47.5	38.5	31.9	31.4	28.4	27.0	26.6	27.9	37.1
	Incremental	4.8	5.5	6.3	7.8	6.4	5.0	4.5	4.5	4.3	3.4	4.1	4.2	5.1
Comparison 5														
[WC-S-1]	Downstream	66.3	62.6	74.6	77.7	71.9	56.5	47.2	46.3	43.1	41.4	41.2	43.3	56.0
[WC-S-1A]	Upstream	62.7	60.0	71.2	74.0	68.2	54.6	45.5	43.2	41.5	39.5	39.1	41.7	53.4
	Incremental	3.6	2.6	3.4	3.7	3.7	1.9	1.7	3.1	1.6	1.9	2.1	1.6	2.6
Comparison 6														
[WC-S-1]	Downstream	66.3	62.6	74.6	77.7	71.9	56.5	47.2	46.3	43.1	41.4	41.2	43.3	56.0
[P-14]+[P-24]+[P-25]	Upstream	60.4	57.3	67.6	70.2	65.1	52.1	44.0	43.4	40.6	39.1	38.9	40.8	51.6
	Incremental	5.9	5.3	7.0	7.5	6.8	4.4	3.2	2.9	2.5	2.3	2.3	2.5	4.4
Comparison 7														
[WC-S-1A]	Downstream	62.7	60.0	71.2	74.0	68.2	54.6	45.5	43.2	41.5	39.5	39.1	41.7	53.4
[P-14]+[P-24]+[P-25]	Upstream	60.4	57.3	67.6	70.2	65.1	52.1	44.0	43.4	40.6	39.1	38.9	40.8	51.6
	Incremental	2.3	2.7	3.6	3.8	3.1	2.5	1.5	-0.2	0.9	0.4	0.2	0.9	1.8
Comparison 8														
[P-24] + [P-25]	Downstream	19.3	17.7	21.3	22.3	20.4	14.6	11.3	11.0	10.4	10.3	10.2	11.0	15.0
[P-20] + [P-21]	Upstream	13.9	12.0	15.3	16.1	14.8	10.7	8.4	8.6	8.3	8.3	8.0	8.4	11.1
	Incremental	5.4	5.7	6.0	6.2	5.6	3.9	2.9	2.4	2.1	2.0	2.2	2.6	3.9
Comparison 9														
[P-21]	Downstream	10.0	9.4	11.4	11.6	11.0	8.2	6.2	6.6	6.5	6.7	6.3	6.7	8.4
[P-19] + [WE-28]	Upstream	7.7	7.1	9.4	9.7	9.3	7.0	5.5	5.6	5.3	5.1	5.1	5.4	6.8
	Incremental	2.3	2.3	2.0	1.9	1.7	1.2	0.7	1.0	1.2	1.6	1.2	1.3	1.6
Comparison 10														
[P-19]	Downstream	6.2	5.6	7.5	7.6	7.3	5.6	4.6	4.8	4.5	4.4	4.4	4.6	5.6
[P-17] + [WE-25] + [FE-19]	Upstream	6.0	5.5	6.7	6.5	6.1	4.8	3.9	4.4	3.9	3.8	3.7	4.0	4.9
	Incremental	0.2	0.1	0.8	1.1	1.2	0.8	0.7	0.4	0.6	0.6	0.7	0.6	0.7
Comparison 11														
[P-3] + [P-26]	Downstream	10.9	10.5	11.0	11.7	11.2	10.6	10.3	10.3	9.6	9.8	9.9	11.0	10.6
[P-1]	Upstream	8.9	8.7	9.2	9.6	9.2	8.3	7.8	7.8	7.6	7.3	7.4	7.5	8.3
	Incremental	2.0	1.8	1.8	2.1	2.0	2.3	2.5	2.5	2.0	2.5	2.5	3.5	2.3
Comparison 12														
[P-1]	Downstream	8.9	8.7	9.2	9.6	9.2	8.3	7.8	7.8	7.6	7.3	7.4	7.5	8.3
[BG-1]	Upstream	7.1	6.9	7.3	7.7	7.3	6.6	6.2	6.2	6.0	5.7	5.3	5.9	6.5
	Incremental	1.8	1.8	1.9	1.9	1.9	1.7	1.6	1.6	1.6	1.6	2.1	1.6	1.8
Comparison 13														
[P-12]	Downstream	14.9	13.6	17.4	18.4	16.3	12.8	11.1	10.2	8.7	8.7	9.1	9.3	12.5
[LV-Basin] + [LV-11]	Upstream	15.2	13.9	17.8	18.8	16.5	13.3	11.1	10.9	9.8	9.3	9.4	9.6	12.9
	Incremental	-0.3	-0.3	-0.4	-0.4	-0.2	-0.5	0.0	-0.7	-1.1	-0.6	-0.3	-0.3	-0.4

Table 6-7

Rouge Valley Sewage Disposal System

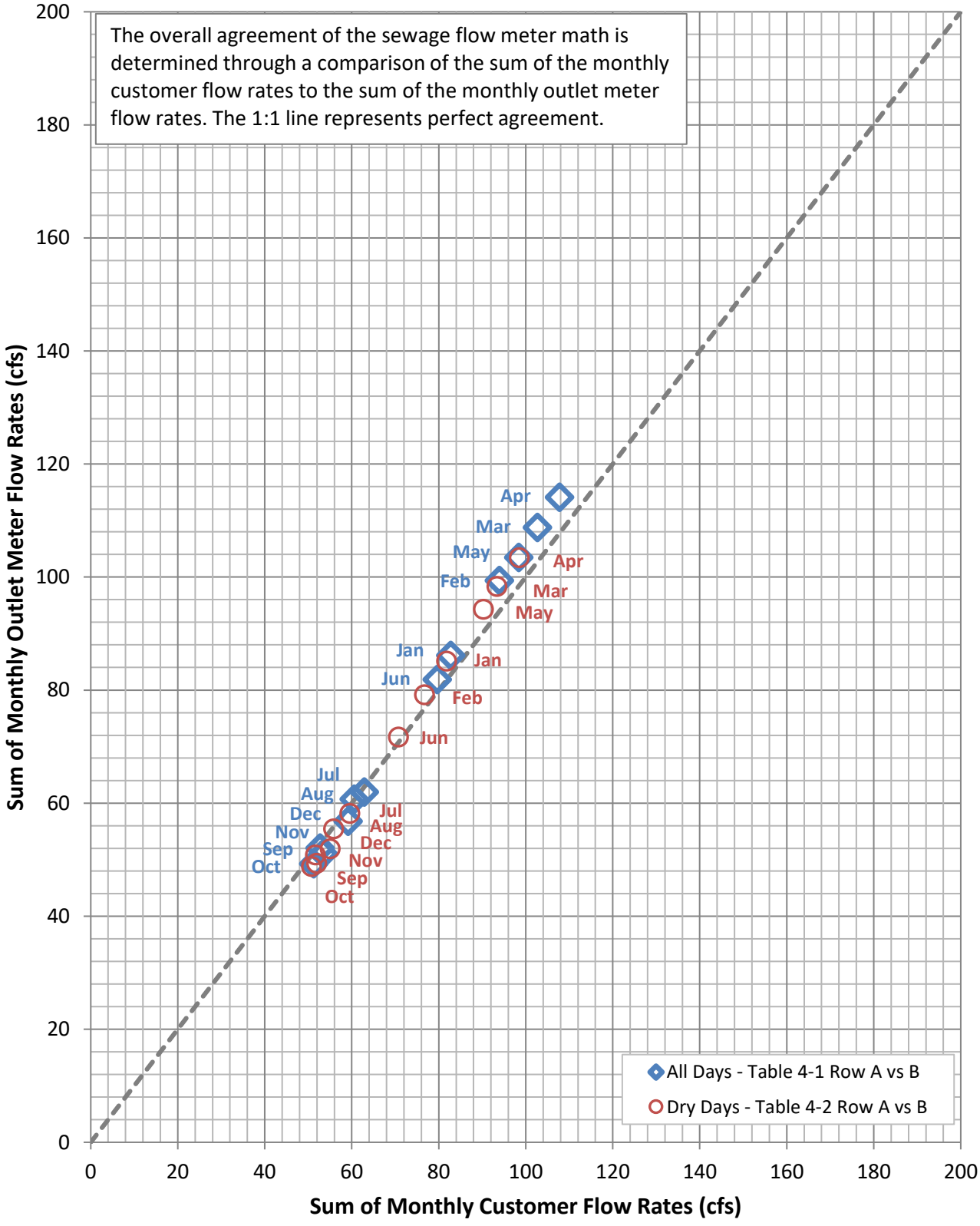
Monthly Average Dry Weather Flow Rate Versus Residential Population Check

Meter Grouping	Year 2020 Residential Population	Metric	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Annual Average	Percent of Area as Residential	Residential Area (acres)	Total Developed Land (Acres)
[BG-1]	51,761	cfs	7.1	6.9	7.3	7.7	7.3	6.6	6.2	6.2	6.0	5.7	5.3	5.9	6.5	62%	7,768	12,473
		GPCD	*88.4*	*86.2*	*91.3*	*95.9*	*91.3*	*82.4*	*77.3*	*77.1*	*74.7*	*71.4*	*65.8*	*74.2*	*81.3*			
[P-1]	57,801	cfs	8.9	8.7	9.2	9.6	9.2	8.3	7.8	7.8	7.6	7.3	7.4	7.5	8.3	63%	8,421	13,361
		GPCD	*99.5*	*97.1*	*102.8*	*107.8*	*102.7*	*93.0*	*87.3*	*87.2*	*84.5*	*81.8*	*82.3*	*83.8*	*92.5*			
[P-3] + [P-26]	63,945	cfs	10.9	10.5	11.0	11.7	11.2	10.6	10.3	10.3	9.6	9.8	9.9	11.0	10.6	63%	8,762	13,982
		GPCD	*110.5*	*106.0*	*111.6*	*118.5*	*112.9*	*106.9*	*104.5*	*103.9*	*97.4*	*98.7*	*100.0*	*111.7*	*106.9*			
[P-3] + [P-7]	68,199	cfs	12.0	11.5	12.2	12.9	12.4	11.6	11.2	11.1	10.4	10.5	10.6	11.8	11.5	62%	9,264	15,018
		GPCD	*114.0*	*109.0*	*115.2*	*122.3*	*117.3*	*110.1*	*106.4*	*105.6*	*98.4*	*99.3*	*100.2*	*111.8*	*109.2*			
[P-8]	8,156	cfs	2.2	2.0	2.2	2.4	2.4	2.0	1.8	1.7	1.6	1.6	1.6	1.6	1.9	42%	378	892
		GPCD	*171.5*	*158.1*	*177.9*	*187.2*	*189.9*	*162.1*	*142.9*	*137.2*	*128.9*	*125.1*	*124.1*	*129.2*	*152.8*			
[LV-16]	4,737	cfs	2.2	1.9	2.5	2.7	2.6	2.0	1.7	1.6	1.4	1.2	1.1	1.2	1.8	62%	599	963
		GPCD	*295.1*	*265.7*	*336.2*	*367.7*	*360.7*	*267.4*	*225.6*	*223.8*	*195.1*	*169.3*	*155.5*	*163.6*	*252.1*			
[LV-15]	7,162	cfs	1.2	1.2	1.5	1.6	1.4	1.1	0.9	0.9	0.8	0.7	0.7	0.8	1.1	81%	484	596
		GPCD	*108.1*	*107.4*	*136.5*	*140.0*	*127.9*	*100.3*	*80.9*	*77.6*	*70.6*	*65.3*	*64.1*	*68.9*	*95.6*			
[WE-14]	27,348	cfs	4.9	4.7	5.3	5.3	5.1	4.5	3.8	3.5	3.4	3.4	3.3	3.4	4.2	60%	2,000	3,348
		GPCD	*116.5*	*111.8*	*126.2*	*126.1*	*120.4*	*105.6*	*90.2*	*82.5*	*81.2*	*79.4*	*78.6*	*79.3*	*99.7*			
[M-2]	13,503	cfs	2.6	2.4	3.2	3.4	3.0	2.2	1.5	1.4	1.4	1.3	1.3	1.5	2.1	81%	1,143	1,409
		GPCD	*123.4*	*116.3*	*154.3*	*161.9*	*145.8*	*105.0*	*73.8*	*68.0*	*64.8*	*63.1*	*64.2*	*71.2*	*100.9*			
[M-1]	14,646	cfs	2.4	2.6	3.2	3.3	2.7	2.2	1.5	1.5	1.4	1.3	1.3	1.5	2.1	81%	1,181	1,453
		GPCD	*103.8*	*113.7*	*140.7*	*146.3*	*117.5*	*96.4*	*64.9*	*64.4*	*60.8*	*58.0*	*58.3*	*64.1*	*90.6*			
[LV-14]	7,518	cfs	1.4	1.3	1.8	1.9	1.7	1.3	1.1	1.0	0.9	0.9	0.8	0.9	1.3	56%	573	1,029
		GPCD	*120.7*	*113.4*	*152.0*	*162.4*	*148.7*	*110.4*	*92.4*	*89.4*	*80.4*	*75.2*	*72.0*	*74.8*	*107.6*			
[LV-11] + [LV-4]	39,763	cfs	7.6	7.1	9.0	9.5	8.5	6.9	6.1	5.8	5.2	5.0	5.1	5.2	6.7	49%	2,439	5,018
		GPCD	*123.2*	*115.7*	*146.5*	*153.8*	*138.1*	*112.6*	*98.8*	*94.2*	*84.9*	*81.8*	*82.6*	*84.5*	*109.7*			
[LV-11] + [LV-Basin]	27,381	cfs	15.2	13.9	17.8	18.8	16.5	13.3	11.1	10.9	9.8	9.3	9.4	9.6	12.9	64%	7,708	11,998
		GPCD	*357.8*	*327.6*	*420.3*	*443.9*	*388.3*	*313.3*	*261.7*	*258.4*	*230.3*	*219.5*	*221.0*	*226.5*	*305.6*			
[P-12]	67,562	cfs	14.9	13.6	17.4	18.4	16.3	12.8	11.1	10.2	8.7	8.7	9.1	9.3	12.5	61%	7,733	12,722
		GPCD	*143.0*	*130.2*	*166.1*	*175.7*	*156.3*	*122.6*	*106.1*	*98.0*	*83.0*	*83.7*	*86.6*	*89.3*	*120.0*			
[P-9] + [P-10] + [P-11]	232,873	cfs	43.6	40.8	49.9	51.9	47.5	38.5	31.9	31.4	28.4	27.0	26.6	27.9	37.1	64%	24,438	38,468
		GPCD	*121.1*	*113.2*	*138.6*	*144.0*	*131.8*	*106.7*	*88.7*	*87.2*	*78.8*	*75.1*	*73.9*	*77.4*	*103.0*			
[P-13]	49,861	cfs	9.8	9.0	11.9	12.5	10.9	8.0	5.9	5.9	5.2	4.7	4.5	5.0	7.8	73%	3,636	4,961
		GPCD	*127.6*	*116.1*	*154.2*	*162.0*	*141.7*	*104.2*	*76.2*	*76.8*	*67.9*	*60.4*	*58.8*	*64.2*	*100.7*			
[WC-S-2] + [WC-S-3] + [P-14]	324,125	cfs	59.9	56.2	70.0	73.7	67.1	52.6	43.7	41.4	37.9	36.2	36.8	38.4	51.1	66%	30,460	46,337
		GPCD	*119.4*	*112.0*	*139.7*	*146.9*	*133.7*	*105.0*	*87.1*	*82.6*	*75.5*	*72.1*	*73.4*	*76.5*	*101.9*			
[P-15]	7,363	cfs	1.3	1.4	1.5	1.6	1.6	1.3	1.1	1.1	1.1	1.1	1.1	1.0	1.3	36%	1,626	4,471
		GPCD	*116.5*	*121.0*	*134.8*	*142.1*	*136.2*	*110.7*	*97.2*	*94.6*	*95.7*	*94.2*	*96.1*	*91.8*	*110.8*			
[P-17]	10,325	cfs	2.6	2.4	2.9	2.8	2.5	2.3	2.0	2.4	2.2	2.1	2.0	2.2	2.4	37%	2,476	6,748
		GPCD	*163.1*	*147.8*	*179.0*	*173.0*	*155.9*	*143.3*	*122.5*	*152.0*	*140.4*	*130.0*	*122.3*	*137.5*	*147.3*			
[WE-25]	15,856	cfs	3.3	3.1	3.8	3.8	3.6	2.5	1.9	1.9	1.7	1.7	1.7	1.8	2.6	70%	1,503	2,141
		GPCD	*136.5*	*126.8*	*155.6*	*153.3*	*145.2*	*102.2*	*78.0*	*78.4*	*68.1*	*69.4*	*69.5*	*73.5*	*104.6*			
[P-19] - [FE-19]	32,757	cfs	6.2	5.6	7.5	7.6	7.3	5.6	4.6	4.8	4.5	4.4	4.4	4.6	5.6	46%	4,454	9,630
		GPCD	*121.4*	*111.3*	*147.6*	*150.1*	*143.8*	*111.1*	*91.0*	*93.9*	*88.0*	*85.9*	*85.9*	*90.5*	*110.0*			
[WE-28]	13,428	cfs	1.6	1.4	1.9	2.1	2.0	1.3	0.9	0.9	0.8	0.7	0.8	0.8	1.3	72%	931	1,294
		GPCD	*75.7*	*69.5*	*91.9*	*101.4*	*94.9*	*63.7*	*44.4*	*42.9*	*38.5*	*34.8*	*37.7*	*38.5*	*61.1*			
[P-21] - [FE-19]	51,479	cfs	10.0	9.4	11.4	11.6	11.0	8.2	6.2	6.6	6.5	6.7	6.3	6.7	8.4	50%	5,665	11,264
		GPCD	*125.1*	*118.4*	*143.1*	*145.6*	*138.4*	*102.8*	*77.9*	*83.5*	*82.2*	*84.5*	*79.5*	*83.9*	*105.3*			
[P-25] - [FE-19]	67,371	cfs	11.5	11.4	13.1	13.6	13.2	9.5	6.8	6.9	6.7	7.0	7.0	7.4	9.5	54%	6,687	12,479
		GPCD	*110.2*	*109.2*	*125.5*	*130.7*	*126.6*	*91.0*	*65.6*	*65.9*	*64.7*	*67.3*	*66.8*	*71.3*	*91.1*			
[P-20]	12,544	cfs	3.9	2.6	3.9	4.5	3.8	2.5	2.2	2.0	1.8	1.5	1.7	1.7	2.7	12%	731	6,147
		GPCD	*202.2*	*134.7*	*201.7*	*233.0*	*195.6*	*130.8*	*114.8*	*100.9*	*90.8*	*79.0*	*85.4*	*89.8*	*138.3*			
[P-24]	29,697	cfs	7.8	6.3	8.3	8.6	7.2	5.1	4.5	4.2	3.7	3.3	3.2	3.6	5.5	66%	2,294	3,498
		GPCD	*170.0*	*136.3*	*179.6*	*188.2*	*157.5*	*111.5*	*97.8*	*90.3*	*80.0*	*71.0*	*69.8*	*78.0*	*119.1*			
[WC-S-1] + [WC-S-2] + [WC-S-3] - [FE-19]	421,193	cfs	85.1	79.2	98.3	103.4	94.3	71.7	58.2	55.4	50.8	48.8	49.3	51.9	70.5	59%	39,441	67,194
		GPCD	*130.6*	*121.5*	*150.9*	*158.6*	*144.7*	*110.0*	*89.3*	*85.1*	*78.0*	*74.8*	*75.7*	*79.7*	*108.2*			

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 6-1
Rouge Valley Sewage Disposal System
End of System Monthly Flow Rate Comparison



7.0 Report of Discharge

This section summarizes the estimated Sanitary Sewer Overflow (SSO) discharges, Retention Treatment Basin (RTB) discharges, uncontrolled Combined Sewer Overflow (CSO) discharges, and any other known discharges from Wayne County owned and/or operated assets within the RVSDS which occurred during 2022. SSO/RTB/CSO discharges related to community owed and/or operated assets, if any, are not documented in this report. Detailed information regarding discharges is available on the Michigan Department of Environment, Great Lakes, and Energy (EGLE) MiWaters website (https://miwaters.deq.state.mi.us/).

Table 7-1 presents the estimated SSO discharges from three former combined sewer overflow outfalls (M-21, M-22 and M-25) on the Middle Rouge Interceptor. These former combined sewer overflow outfalls remain open pending completion of the Long-Term Corrective Action Plan under Final Order of Abatement 2117 (AFO-SW12-002), as amended.

Table 7-2 presents the estimated RTB discharges from the Dearborn Heights CSO RTB, Inkster CSO RTB, and Redford CSO RTB which are operated by Wayne County.

Table 7-3 presents the estimated CSO discharges from the uncontrolled CSO regulators/outfalls.

Figures A1 through A8 in Appendix A show the locations of the outfalls and facilities mentioned above.

Table 7-1
Rouge Valley Sewage Disposal System
Estimated SSO from Regulators/Outfalls M-21, M-22 and M-25

Significant Storm Event	Date	Precipitation (inches)	Estimated SSO Discharge (MG)		
			Outfall M-21	Outfall M-22	Outfall M-25
1	February 16-18, 2022	0.98	0	0	0
2	April 22-25, 2022	1.15	0	0	0
3	June 6-9, 2022	1.84	0	0	0
4	July 5-8, 2022	1.15	0	0	0.01
5	August 3-5, 2022	1.43	0	0	0

Table 7-2
Rouge Valley Sewage Disposal System
Estimated RTB Discharge from Wayne County Operated CSO RTBs

Significant Storm Event	Date	Precipitation (inches)	Estimated RTB Discharge (MG)		
			Dearborn Heights CSO RTB	Inkster CSO RTB	Redford CSO RTB
1	February 16-18, 2022	0.98	0	0	0
2	April 22-25, 2022	1.15	0	0	0
3	June 6-9, 2022	1.84	0	0	0
4	July 5-8, 2022	1.15	0	0	0
5	August 3-5, 2022	1.43	0	0	0

Table 7-3
Rouge Valley Sewage Disposal System
Estimated CSO from Uncontrolled CSO Regulators/Outfalls

Significant Storm Event	Date	Precipitation (inches)	Estimated Uncontrolled CSO Discharge (MG)														
			MI0051489				MI0051462		MI0051535							MI0051471	Total
			M-13	M-14	U-1	L-43	L-41	L-42	U-2	U-3	U-4	U-5	U-9	U-10	U-11	010	
1	February 16-18, 2022	0.98	0.4	0.3	0.4	0.2	4.8	0.5	5.7	0.2	0.1	0.3	0.7	0.3	1.6	2.8	18.3
-	February 21, 2022	0	0	0	0	0	1.4	0.01	0	0	0	0	0	0	0	1.1	2.5
-	February 22, 2022	0.15	0.2	0.1	0.1	0.1	0.5	0.2	0	0	0	0	0	0	0	0	1.2
-	March 22-23, 2022	0.79	0.2	0.1	0.2	0.1	2.2	0.2	0	0	0	0	0	0	0	1.4	4.4
2	April 22-25, 2022	1.15	0.3	0.2	0.2	0.1	4.7	0.3	0	0	0	0	0	0	0	3.1	8.9
-	May 3, 2022	0.80	0.4	0.3	0.3	0.2	4.2	0.5	0	0	0	0	0	0	0	2.4	8.3
-	May 15-16, 2022	0.78	0.3	0.3	0.3	0.1	2.4	0.4	0	0	0	0	0	0	0	1.2	5.0
-	May 18, 2022	0.41	0.3	0.2	0.2	0.1	2.0	0.3	0	0	0	0	0	0	0	1.0	4.1
-	May 25-26, 2022	0.43	0.1	0.1	0.1	0.1	2.1	0.2	0	0	0	0	0	0	0	1.3	4.0
-	June 1, 2022	0.25	0.2	0.2	0.2	0.1	2.2	0.3	0	0	0	0	0	0	0	1.1	4.3
3	June 6-9, 2022	1.84	0.5	0.4	0.4	0.2	5.0	0.6	0	0	0	0	0	0	0	2.8	9.9
4	July 5-8, 2022	1.15	0.3	0.2	0.2	0.1	2.7	0.3	8.1	0.2	0.1	0.5	1.0	0.4	2.3	1.6	18.0
5	August 3-5, 2022	1.43	0.3	0.3	0.3	0.1	3.3	0.4	7.4	0.2	0.1	0.4	0.9	0.3	2.1	1.9	18.0
-	August 8, 2022	0.94	0.2	0.2	0.2	0.1	0.6	0.2	0	0	0	0	0	0	0	0	1.5
-	August 21, 2022	1.49	0.2	0.1	0.1	0.1	2.1	0.2	0	0	0	0	0	0	0	1.2	4.0
-	August 29, 2022	0.54	0	0	0	0	1.8	0.01	0	0	0	0	0	0	0	1.5	3.3
-	September 20-21, 2022	0.55	0.2	0.2	0.2	0.1	0.6	0.2	0	0	0	0	0	0	0	0	1.5
-	December 15, 2022	0.69	0.2	0.2	0.2	0.1	1.9	0.2	0	0	0	0	0	0	0	1.1	3.9
-	December 30-31, 2022	1.15	0.2	0.2	0.2	0.1	1.9	0.2	0	0	0	0	0	0	0	1.1	3.9
Total			4.5	3.6	3.8	2.0	46.4	5.2	21.2	0.6	0.3	1.2	2.6	1.0	6.0	26.6	125.0

8.0 Data Edits and Flow Meter Reports

The flow monitoring data were reviewed and edited as summarized on Table 8-1. Figure 8-1 shows charts of the flow meter maintenance issue that occurred during the year.

Figures 8-2 through 8-44 are detailed quarterly reports for each flow meter. These figures show a plot of the daily average flow rate with wet and dry days identified and daily total precipitation, a plot of the typical weekday and weekend diurnal pattern, a summary table of monthly flow rate statistics, and a summary table of significant storm event statistics.

Table 8-1
Rouge Valley Sewage Disposal System
Notable Data Edits

Meter	Period		Issue	Fix Applied
	Start	Stop		
BG-1	1/1/2022	10/26/2022	There was a significant decrease in the recorded flow rate on 6/17/2021 when the meter was serviced to correct an erratic data issue. This device is owned by the City of Novi and ownership is being transferred to Oakland County Water Resources Commissioner (WRC). This issue will be resolved once WRC takes over maintenance of the device.	Correlation to Meter P-1
	11/29/2022	12/31/2022		
FE-22	1/1/2022	12/31/2022	Bad flow rate data	Correlation to Meter P-8
LV-4	6/6/2022	7/28/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-29
LV-11	6/22/2022	7/28/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to LV-14
LV-14	6/6/2022	6/10/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to LV-15
LV-15	1/24/2022	1/31/2022	No data available	Correlation to Meter LV-14
LV-16	10/26/2022	11/10/2022	No data available	Correlation to Meter LV-15
LV-Basin	6/6/2022	7/8/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to LV-11 and P-12 Correlation to P-28 and P-29
M-1	6/6/2022	6/25/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters LV-15 and WE-25
M-2	6/6/2022	6/8/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to LV-15 and WE-25
M-2	7/24/2022	7/28/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to P-11
M-22	6/1/2022	6/2/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	No Fix
P-1	7/10/2022	7/22/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-3 and P-26
P-3	6/6/2022	6/18/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-1
P-7	6/27/2022	7/14/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-8 and P-26
	10/29/2022	11/8/2022	Data unavailable due to a blown fuse. The fuse was replaced.	Correlation to Meter P-8
	11/16/2022	12/2/2022	Data unavailable due to a monitor error. The monitor error was resolved.	Correlation to Meter P-8
P-8	6/6/2022	6/7/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-7
P-9	6/6/2022	6/11/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-10
P-11	6/1/2022	6/2/2022	No data	Correlation to Meter P-10
	6/6/2022	6/14/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	
	6/17/2022	6/18/2022	No data	
P-12	1/2/2022	1/7/2022	Data unavailable due to a battery failure. The battery was replaced.	Correlation to Meter LV-11 and LV-Basin
	4/22/2022	4/25/2022	Data unavailable due to a battery failure. The battery was replaced.	Correlation to LV-Basin and LV-11
	6/21/2022	7/22/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-9 and P-10
	12/26/2022	12/28/2022	Data unavailable due to a blown fuse. The fuse was replaced.	Correlation to Meter LV-Basin
P-14	6/6/2022	6/14/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-30, P-31 and P-32
P-17	6/6/2022	6/14/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-15
P-19	6/6/2022	6/14/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-15 and P-25
P-21	6/6/2022	6/15/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-15 and P-25
P-24	6/6/2022	6/21/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-20
P-25	2/14/2022	2/15/2022	Data unavailable due to a power converter malfunction. The power converter was replaced.	Correlation to Meter P-20 and P-21
	2/21/2022	2/28/2022		
P-28	6/6/2022	6/7/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-29
P-30	6/6/2022	6/11/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-34
WE-14	6/6/2022	6/14/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meter P-7
	8/20/2022	8/23/2022	Data unavailable due to a blown fuse. The fuse and sensor were replaced.	Correlation to Meters WE-28 and P-8
WC-S-1A	6/6/2022	6/11/2022	Data unavailable due to a combination of no communication and dead battery. AT&T shut down their GSM (3G) network. Modem upgraded from a 3G to a 4G LTEM Modem. The battery was replaced.	Correlation to Meters P-14, P-24 and P-25
WC-S-1	1/1/2022	12/31/2022	Out-of-service	Correlation to Meters P-14, P-24 and P-25
WC-S-2 + WC-S-3	1/1/2022	12/31/2022	Out-of-service	Correlation to Meters P-30, P-31, P-32 and P-14

Figure 8-1
Rouge Valley Sewage Disposal System
2022 Flow Rate Flags

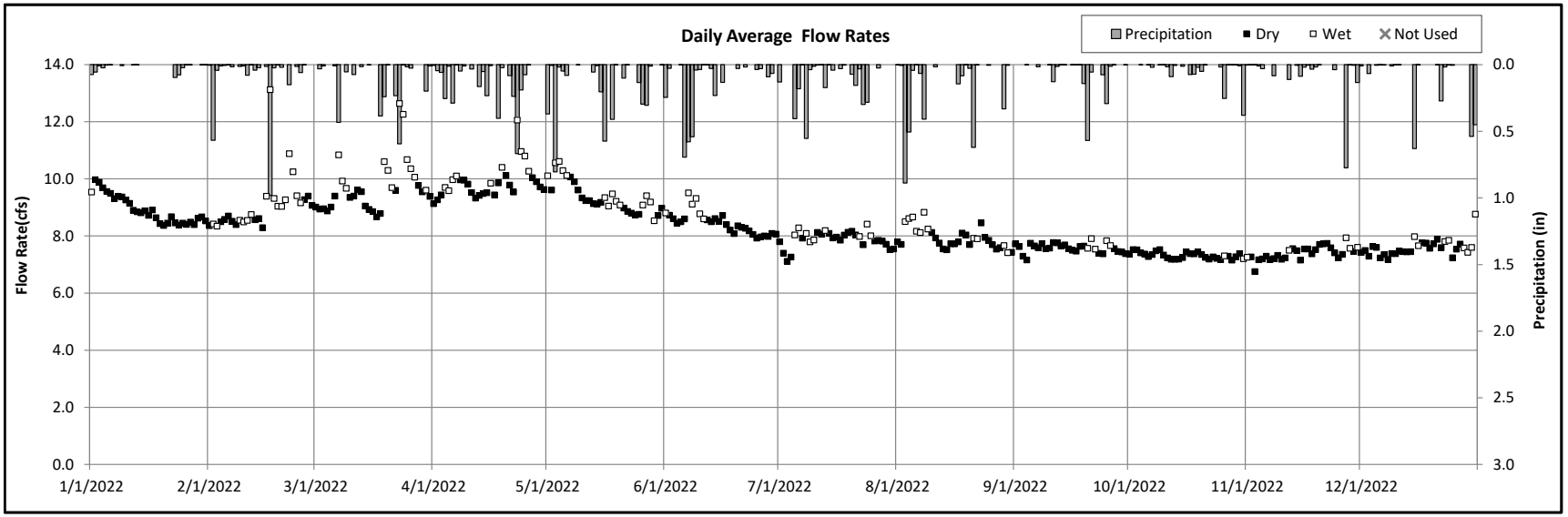


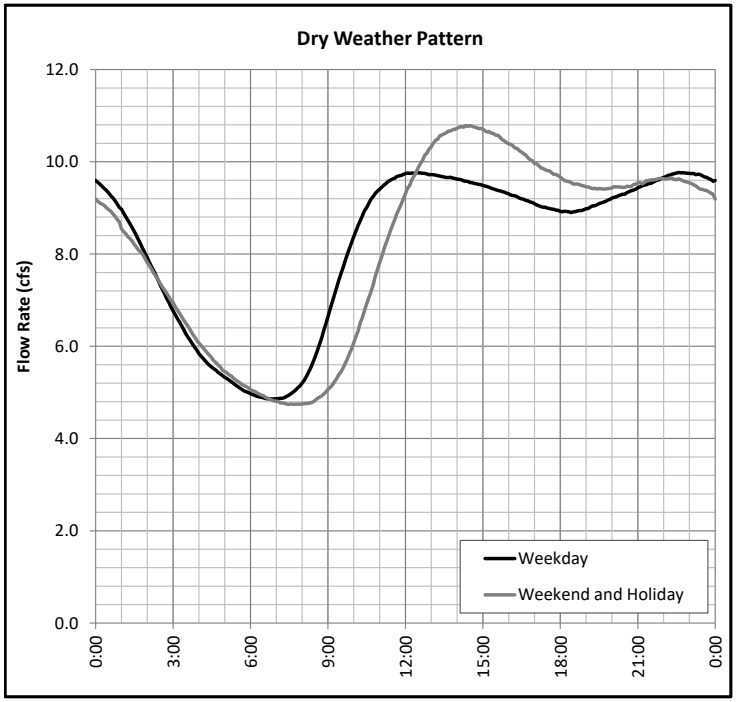
Figure 8-2
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

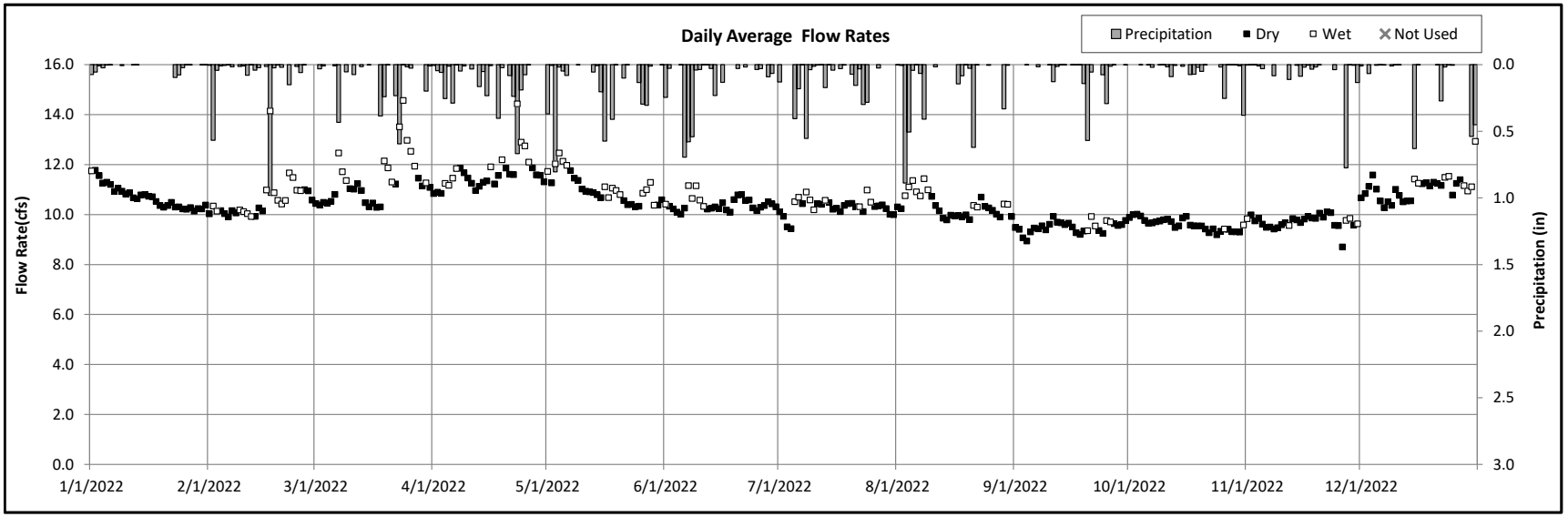
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	8.9	178.7	8.9	178.3	30	1
Feb-22	9.1	164.2	8.7	157.1	12	16
Mar-22	9.7	194.7	9.2	184.1	19	12
Apr-22	9.9	191.6	9.6	186.9	20	10
May-22	9.4	187.6	9.2	184.1	17	14
Jun-22	8.5	163.9	8.3	161.2	24	6
Jul-22	7.9	157.9	7.8	156.4	22	9
Aug-22	7.9	158.9	7.8	156.2	20	11
Sep-22	7.6	146.9	7.6	146.4	25	5
Oct-22	7.3	146.5	7.3	146.6	29	2
Nov-22	7.4	143.4	7.4	142.8	25	5
Dec-22	7.6	151.9	7.5	150.2	23	8

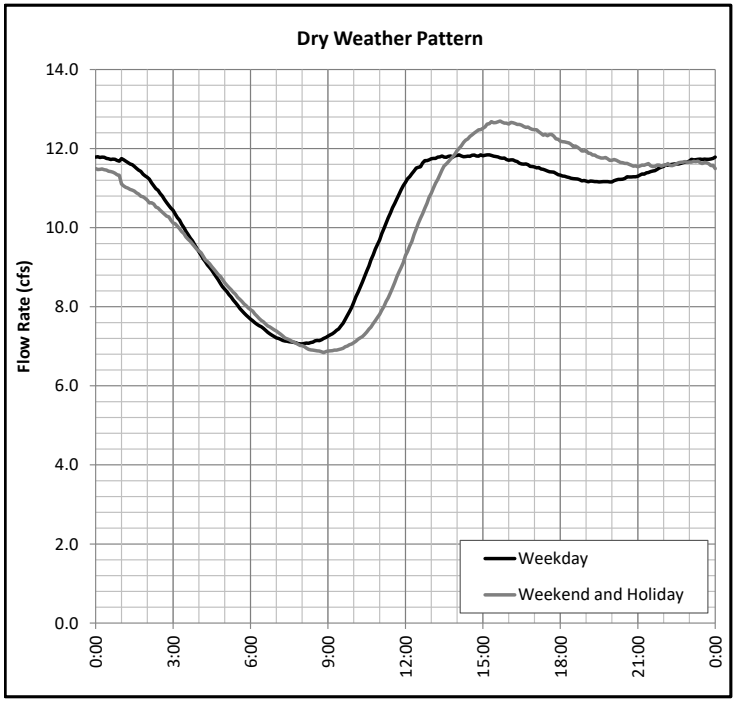
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	18.75	2/17/22 8:00	1.63	2/17/22 8:35
2	1.15	4/22/2022	4/25/2022	14.23	4/23/22 11:20	1.36	4/23/22 11:25
3	1.84	6/6/2022	6/9/2022	12.86	6/8/22 21:25	1.27	6/8/22 21:40
4	1.15	7/5/2022	7/8/2022	11.55	7/6/22 11:40	1.20	7/6/22 12:25
5	1.43	8/3/2022	8/5/2022	14.59	8/3/22 20:05	1.37	8/3/22 20:35
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-3
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-3 **Location: Plymouth Road East of I-275** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: MRIR 5C-01 **Interceptor Branch: Middle Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	10.7	214.6	10.7	213.9	30	1
Feb-22	10.6	191.6	10.3	185.7	12	16
Mar-22	11.3	227.3	10.7	215.2	19	12
Apr-22	11.7	226.0	11.4	220.7	20	10
May-22	11.0	221.3	10.8	216.8	17	14
Jun-22	10.4	202.0	10.3	200.6	24	6
Jul-22	10.3	206.4	10.2	204.2	22	9
Aug-22	10.4	207.4	10.1	202.6	20	11
Sep-22	9.5	184.1	9.5	183.5	25	5
Oct-22	9.6	192.3	9.6	192.5	29	2
Nov-22	9.7	188.2	9.7	188.1	25	5
Dec-22	11.1	221.6	10.9	218.6	23	8

Statistics for Significant Wet Weather Events

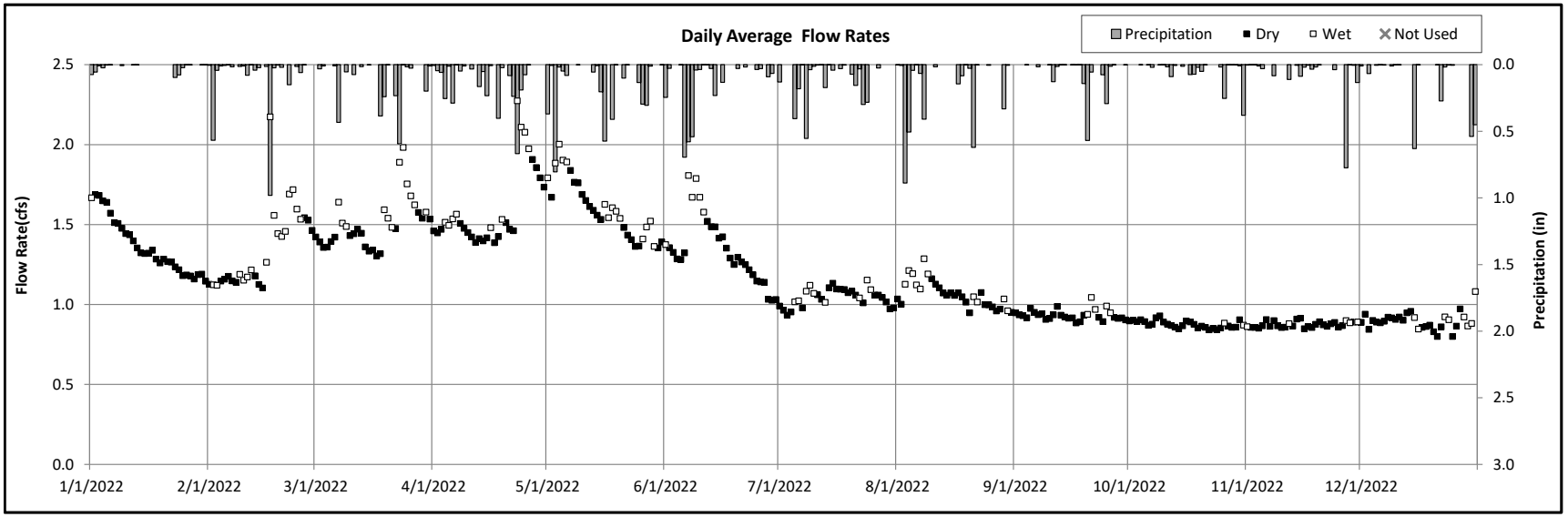
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	16.77	2/17/22 9:50	1.59	2/17/22 10:30
2	1.15	4/22/2022	4/25/2022	15.84	4/23/22 13:35	1.47	4/23/22 13:45
3	1.84	6/6/2022	6/9/2022	14.33	6/8/22 23:45	1.23	6/6/22 0:35
4	1.15	7/5/2022	7/8/2022	14.47	7/8/22 16:15	1.36	7/8/22 16:15
5	1.43	8/3/2022	8/5/2022	15.82	8/3/22 21:05	1.42	8/3/22 21:20
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

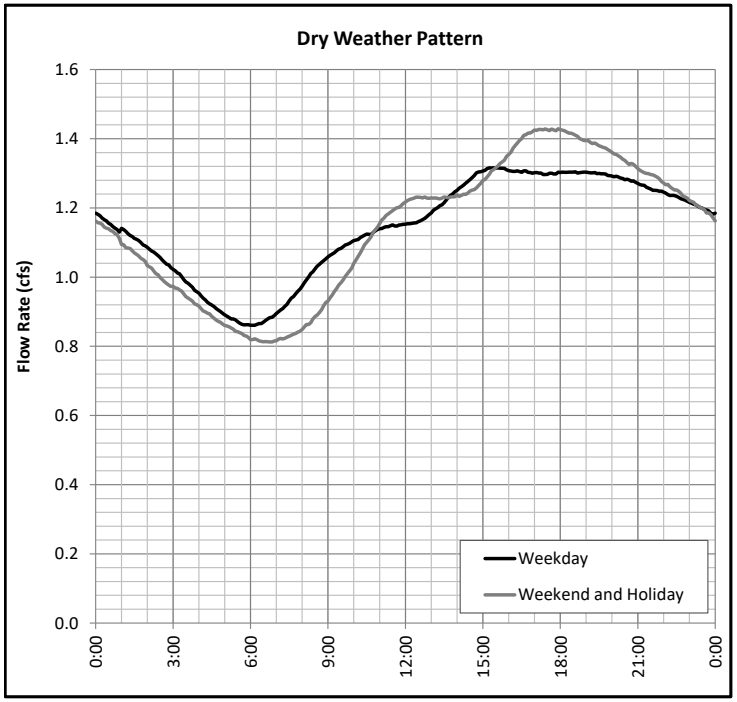
Figure 8-4
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	1.4	27.4	1.4	27.2	30	1
Feb-22	1.3	24.3	1.2	22.4	12	16
Mar-22	1.5	30.2	1.4	28.4	19	12
Apr-22	1.6	31.0	1.5	29.5	20	10
May-22	1.6	32.0	1.6	31.2	17	14
Jun-22	1.3	26.1	1.3	24.6	24	6
Jul-22	1.0	20.9	1.0	20.7	22	9
Aug-22	1.1	21.3	1.0	20.7	20	11
Sep-22	0.9	18.1	0.9	17.9	25	5
Oct-22	0.9	17.5	0.9	17.5	29	2
Nov-22	0.9	16.9	0.9	16.9	25	5
Dec-22	0.9	17.9	0.9	17.8	23	8

Statistics for Significant Wet Weather Events

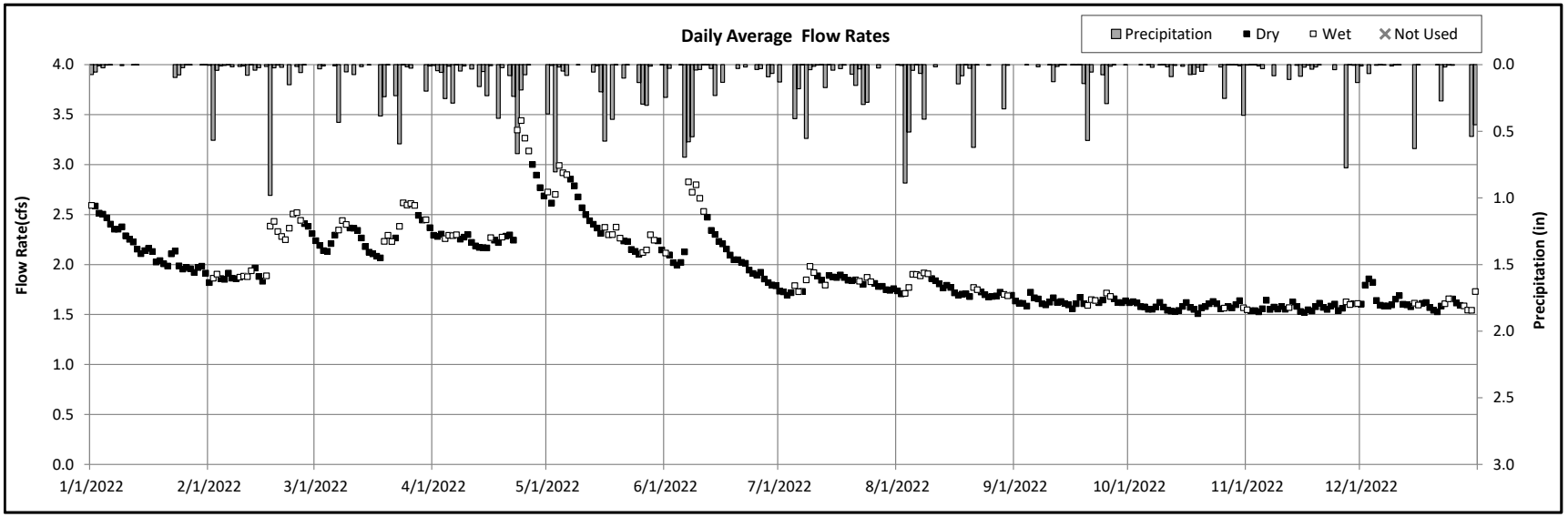
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	3.02	2/17/22 11:10	1.35	2/17/22 10:55
2	1.15	4/22/2022	4/25/2022	2.64	4/23/22 13:05	1.29	4/23/22 14:40
3	1.84	6/6/2022	6/9/2022	2.25	6/6/22 23:45	1.23	6/7/22 0:10
4	1.15	7/5/2022	7/8/2022	1.62	7/8/22 17:55	-	-
5	1.43	8/3/2022	8/5/2022	1.90	8/3/22 18:55	1.15	8/3/22 19:20
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

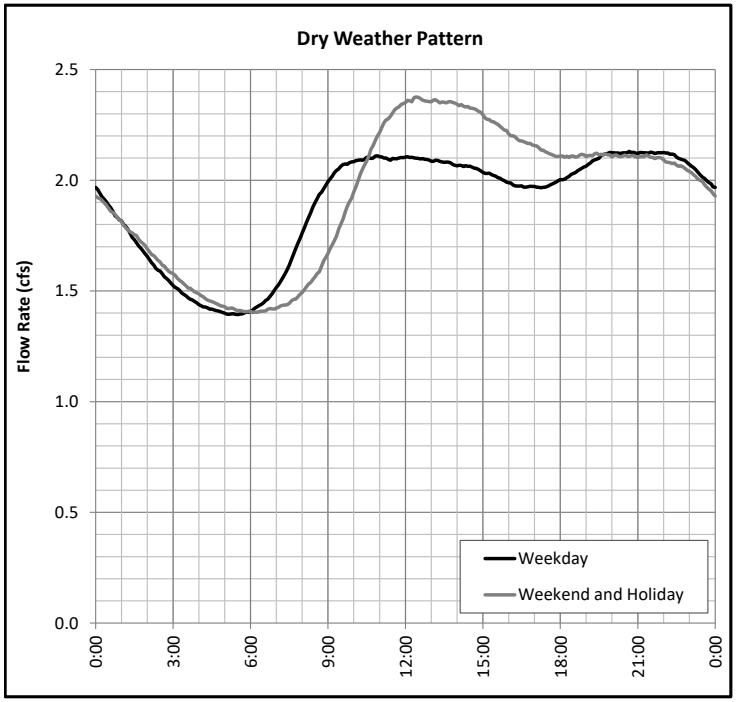
Figure 8-5
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.2	43.6	2.2	43.4	30	1
Feb-22	2.1	37.9	2.0	36.1	12	16
Mar-22	2.3	46.4	2.2	45.0	19	12
Apr-22	2.5	47.9	2.4	45.8	20	10
May-22	2.4	48.7	2.4	48.0	17	14
Jun-22	2.2	41.8	2.0	39.7	24	6
Jul-22	1.8	36.4	1.8	36.1	22	9
Aug-22	1.8	35.2	1.7	34.7	20	11
Sep-22	1.6	31.6	1.6	31.5	25	5
Oct-22	1.6	31.6	1.6	31.6	29	2
Nov-22	1.6	30.4	1.6	30.4	25	5
Dec-22	1.6	32.5	1.6	32.7	23	8

Statistics for Significant Wet Weather Events

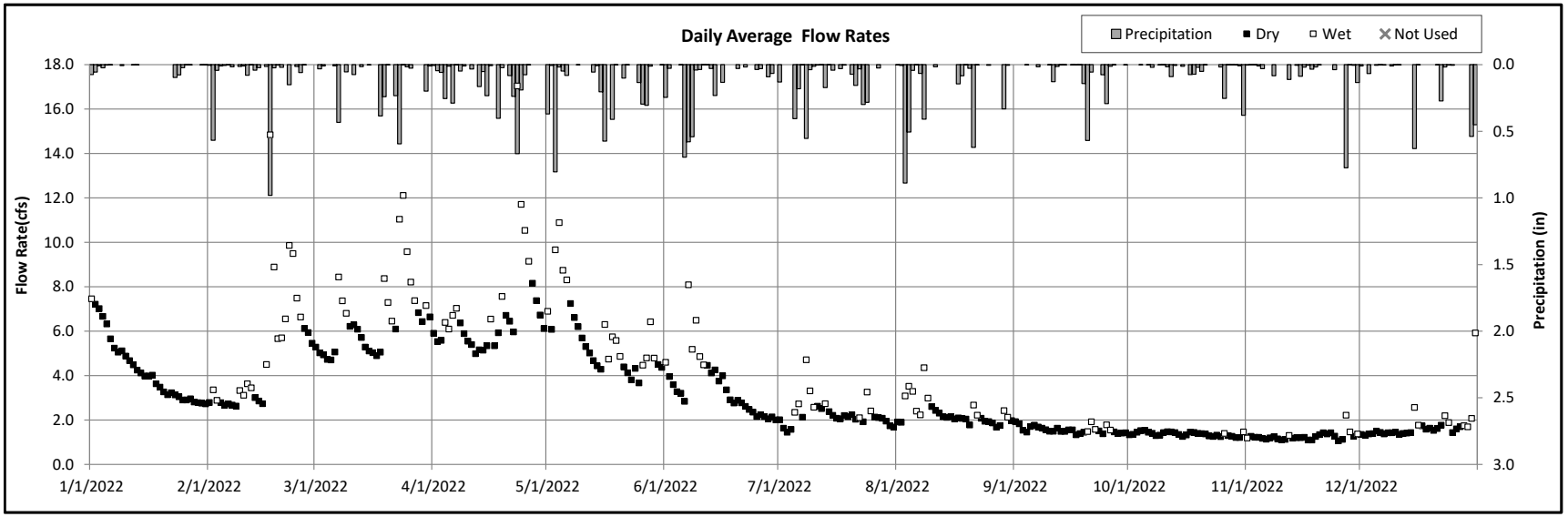
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	2.90	2/17/22 19:50	0.72	2/17/22 20:45
2	1.15	4/22/2022	4/25/2022	4.06	4/23/22 10:35	0.85	4/23/22 10:45
3	1.84	6/6/2022	6/9/2022	3.22	6/6/22 21:35	0.75	6/7/22 14:20
4	1.15	7/5/2022	7/8/2022	2.33	7/8/22 16:40	0.67	7/8/22 16:45
5	1.43	8/3/2022	8/5/2022	2.23	8/5/22 12:30	0.68	8/5/22 13:10
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

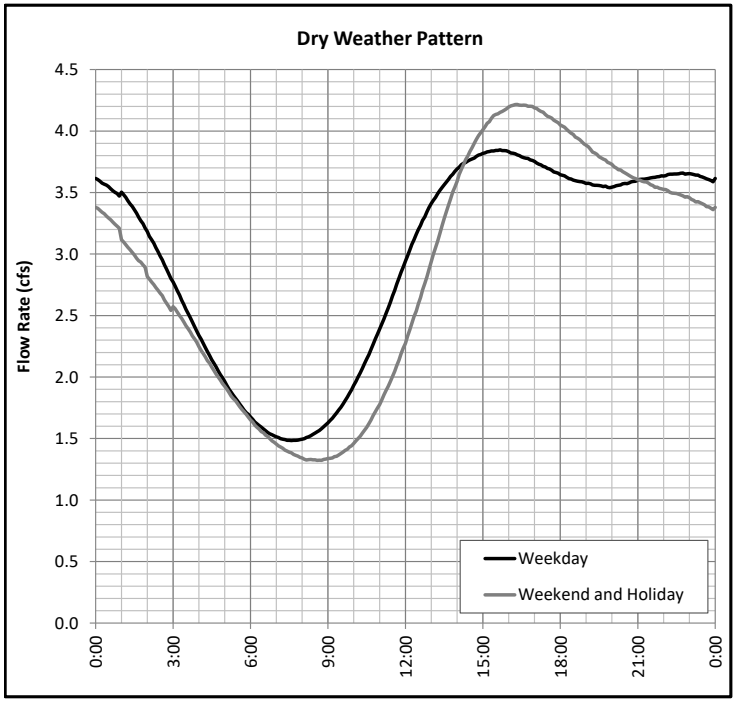
Figure 8-6
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	4.3	85.8	4.2	83.7	30	1
Feb-22	5.1	91.5	3.5	63.8	12	16
Mar-22	6.6	132.8	5.5	111.1	19	12
Apr-22	6.9	134.6	6.0	115.9	20	10
May-22	5.7	114.3	5.0	99.8	17	14
Jun-22	3.5	68.4	3.0	58.3	24	6
Jul-22	2.3	45.8	2.0	40.8	22	9
Aug-22	2.3	46.5	2.0	40.8	20	11
Sep-22	1.6	30.2	1.5	29.8	25	5
Oct-22	1.4	27.3	1.4	27.2	29	2
Nov-22	1.3	24.4	1.2	23.5	25	5
Dec-22	1.7	34.8	1.5	29.7	23	8

Statistics for Significant Wet Weather Events

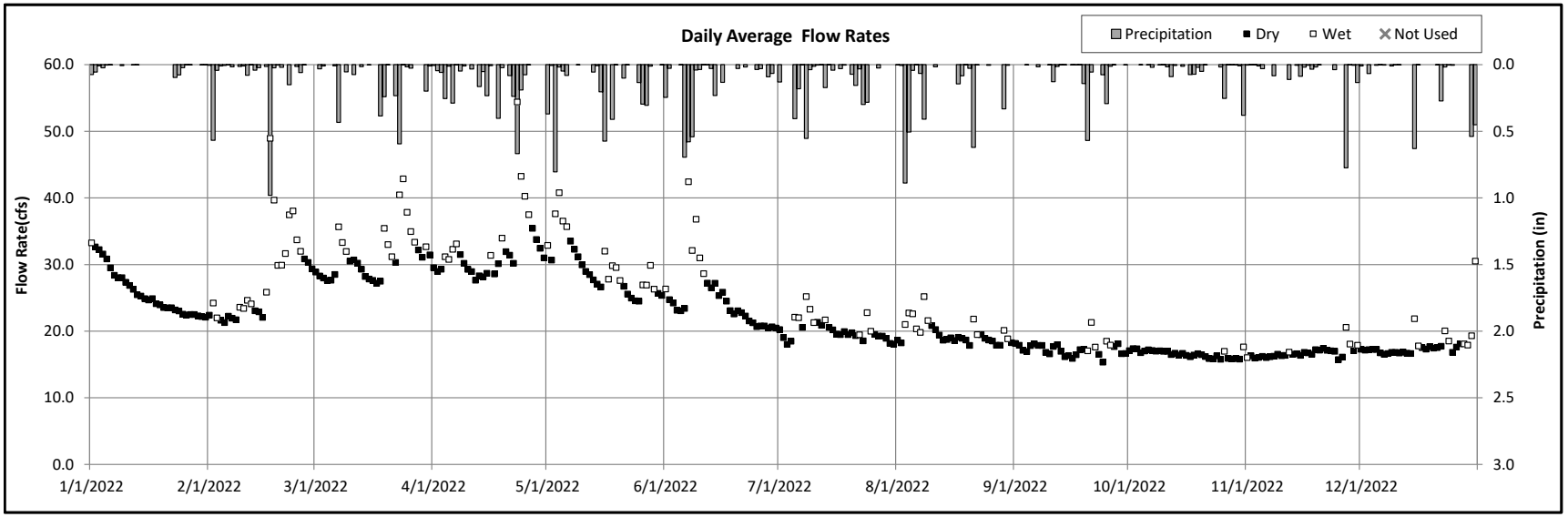
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	20.78	2/17/22 9:25	3.06	2/17/22 10:45
2	1.15	4/22/2022	4/25/2022	21.51	4/23/22 4:50	2.91	4/23/22 5:30
3	1.84	6/6/2022	6/9/2022	11.06	6/7/22 1:10	0.92	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	13.97	7/8/22 16:45	2.11	7/8/22 17:05
5	1.43	8/3/2022	8/5/2022	9.54	8/3/22 21:05	1.60	8/3/22 21:30
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

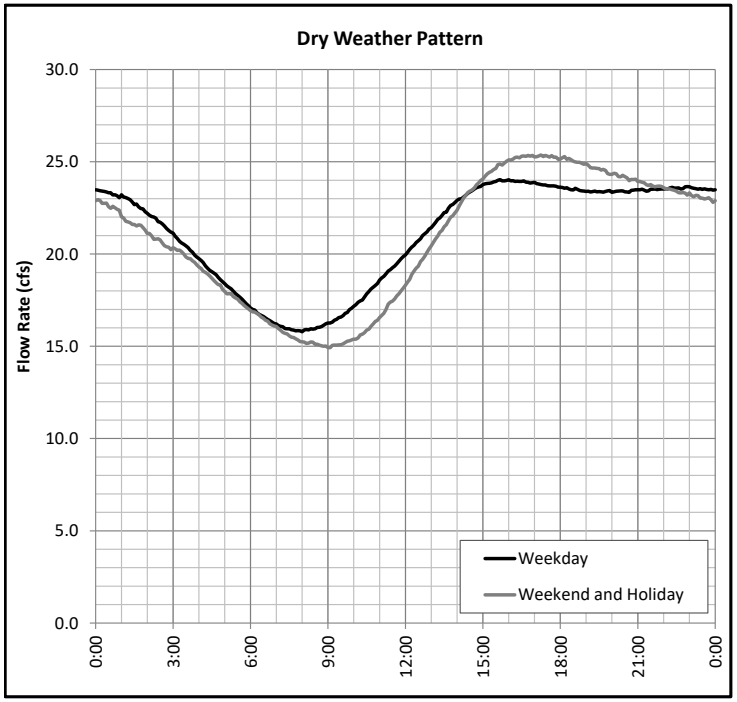
Figure 8-7
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

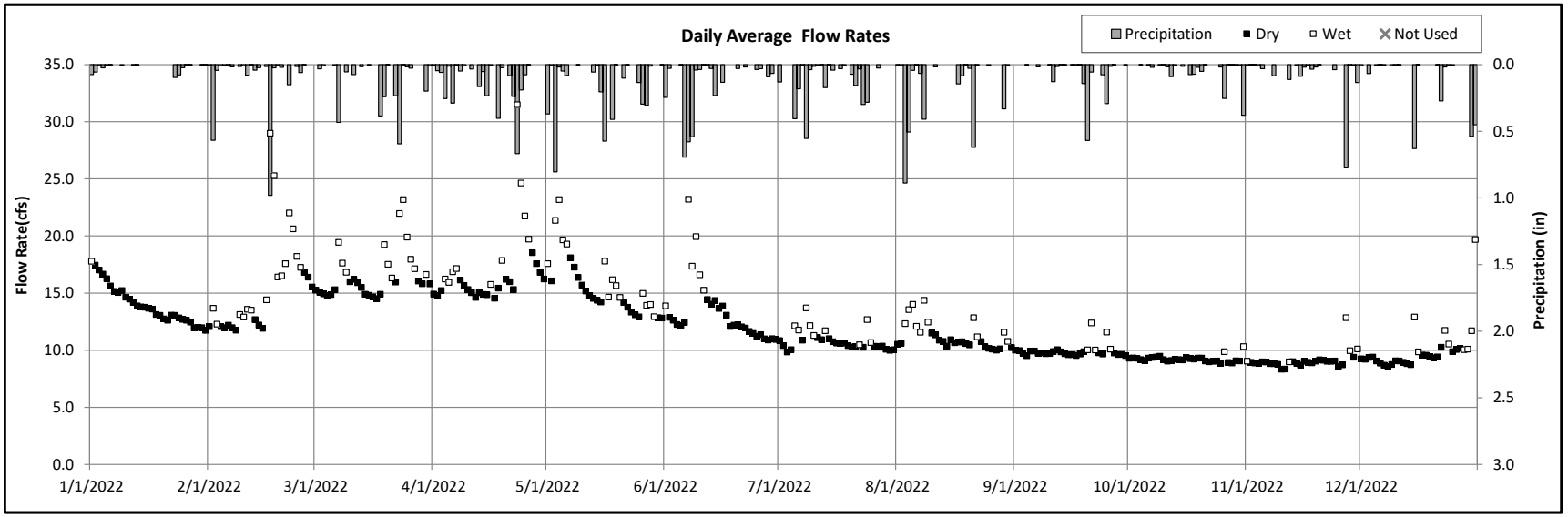
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	25.8	517.7	25.6	512.8	30	1
Feb-22	27.8	503.0	24.1	436.7	12	16
Mar-22	31.5	630.2	29.1	582.8	19	12
Apr-22	32.4	628.8	30.2	586.5	20	10
May-22	29.5	590.4	27.9	558.0	17	14
Jun-22	25.1	486.2	23.1	448.5	24	6
Jul-22	20.2	404.5	19.5	390.0	22	9
Aug-22	19.7	393.9	18.8	376.8	20	11
Sep-22	17.3	336.1	17.1	331.7	25	5
Oct-22	16.6	332.0	16.5	331.0	29	2
Nov-22	16.8	324.8	16.5	320.5	25	5
Dec-22	18.0	360.6	17.1	343.2	23	8

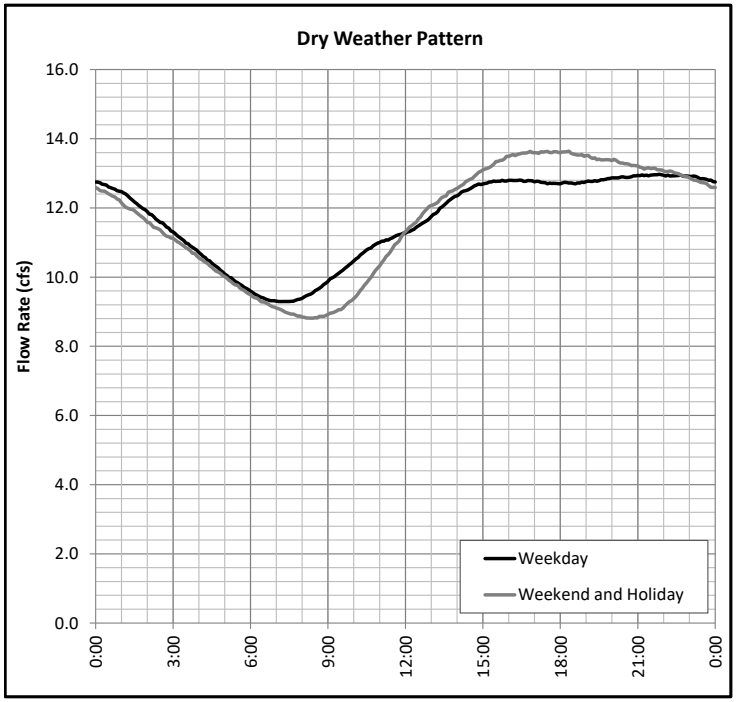
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	62.28	2/17/22 11:25	3.68	2/17/22 11:10
2	1.15	4/22/2022	4/25/2022	62.14	4/23/22 6:30	3.58	4/23/22 5:40
3	1.84	6/6/2022	6/9/2022	52.92	6/7/22 1:20	3.22	6/7/22 1:55
4	1.15	7/5/2022	7/8/2022	45.27	7/8/22 17:05	2.77	7/8/22 17:40
5	1.43	8/3/2022	8/5/2022	37.61	8/3/22 21:00	2.40	8/3/22 21:05
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-8
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-11 **Location: Hines Drive East of Inkster Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: MR II-18 **Interceptor Branch: Middle Rouge**





Monthly Statistics

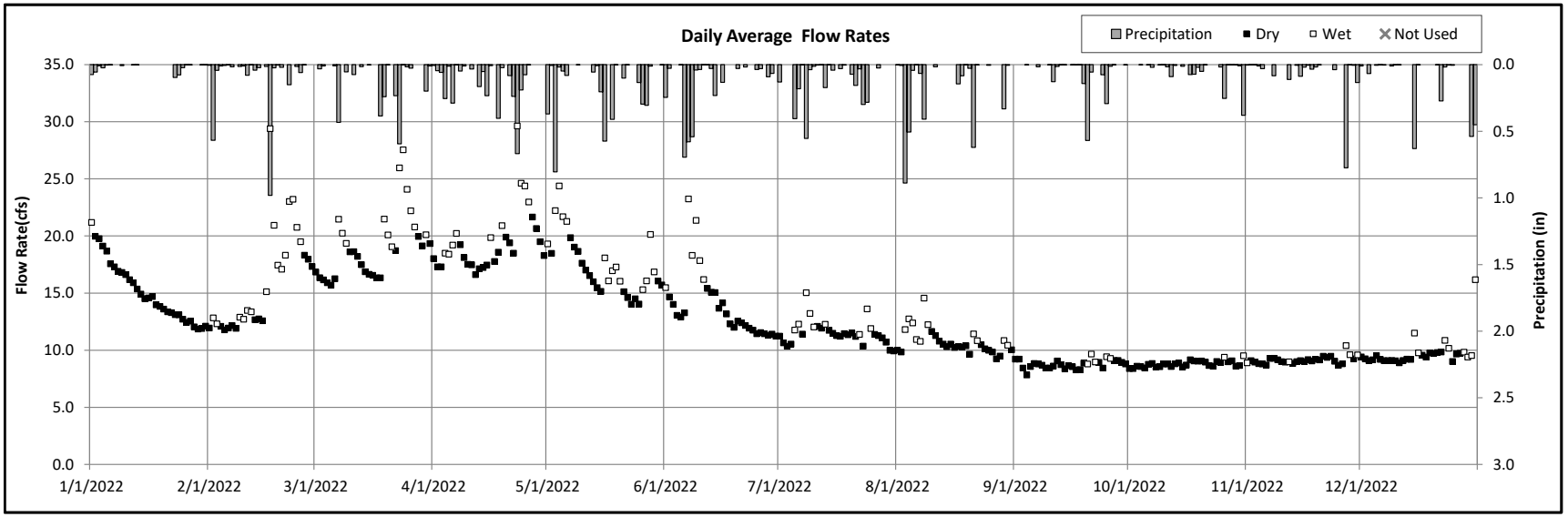
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	14.0	280.4	13.9	277.9	30	1
Feb-22	15.5	280.3	13.1	237.4	12	16
Mar-22	16.6	332.6	15.3	306.9	19	12
Apr-22	17.0	329.7	15.6	303.4	20	10
May-22	15.6	313.4	14.7	293.8	17	14
Jun-22	13.4	259.6	12.3	238.7	24	6
Jul-22	10.8	217.4	10.4	209.3	22	9
Aug-22	11.2	225.0	10.6	211.9	20	11
Sep-22	9.9	192.3	9.7	188.8	25	5
Oct-22	9.2	184.8	9.2	183.6	29	2
Nov-22	9.1	176.4	8.9	172.2	25	5
Dec-22	10.0	200.1	9.3	185.7	23	8

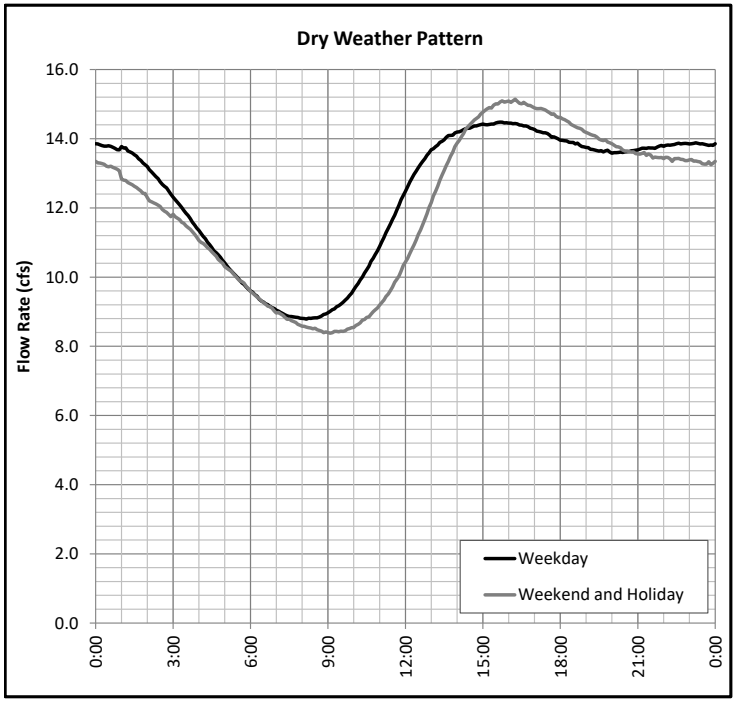
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	33.40	2/17/22 10:35	3.80	2/17/22 10:50
2	1.15	4/22/2022	4/25/2022	34.94	4/23/22 4:45	3.78	4/23/22 5:00
3	1.84	6/6/2022	6/9/2022	29.36	6/7/22 0:55	1.71	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	27.62	7/8/22 16:30	2.71	7/8/22 16:50
5	1.43	8/3/2022	8/5/2022	23.46	8/3/22 19:50	2.38	8/3/22 20:25
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-9
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-12 **Location: Inkster Road North of Hines Drive** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: RVI 12-01 **Interceptor Branch: Middle Rouge**





Monthly Statistics

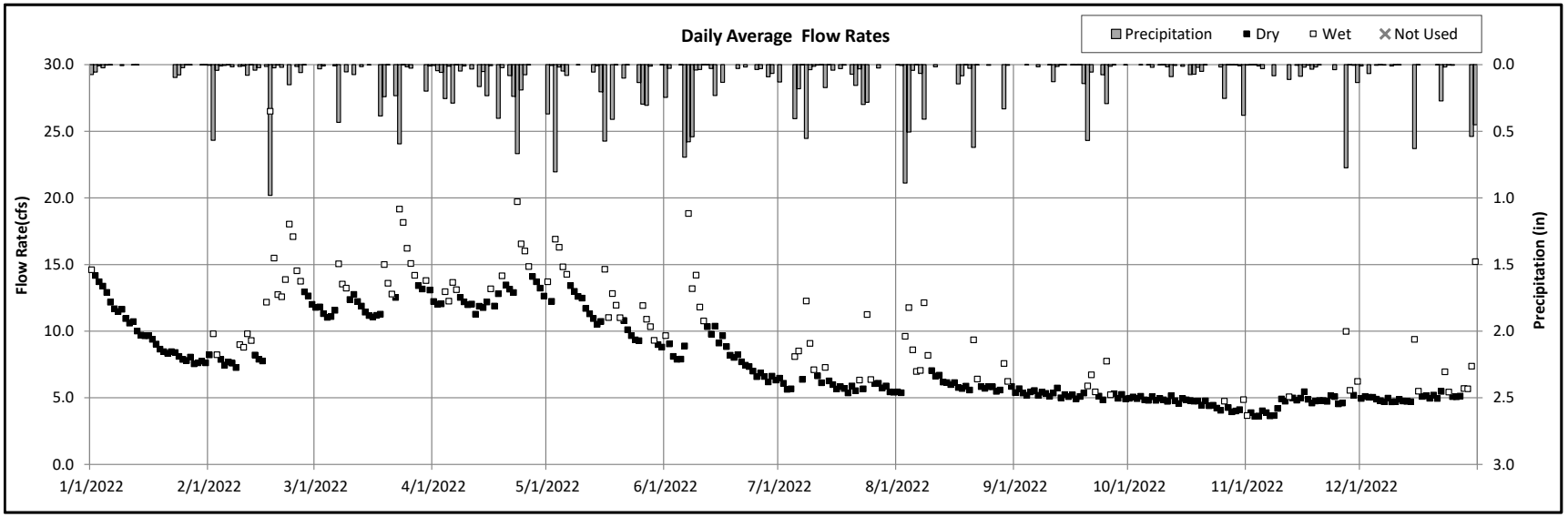
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	15.1	303.5	14.9	299.5	30	1
Feb-22	15.9	287.9	13.6	246.3	12	16
Mar-22	19.1	382.7	17.4	347.8	19	12
Apr-22	19.5	378.7	18.4	356.2	20	10
May-22	17.4	348.5	16.3	327.3	17	14
Jun-22	14.0	271.4	12.8	248.5	24	6
Jul-22	11.5	230.9	11.1	222.1	22	9
Aug-22	10.8	215.7	10.2	205.2	20	11
Sep-22	8.8	170.0	8.7	168.3	25	5
Oct-22	8.8	176.1	8.7	175.3	29	2
Nov-22	9.1	177.0	9.1	175.6	25	5
Dec-22	9.7	195.1	9.3	187.0	23	8

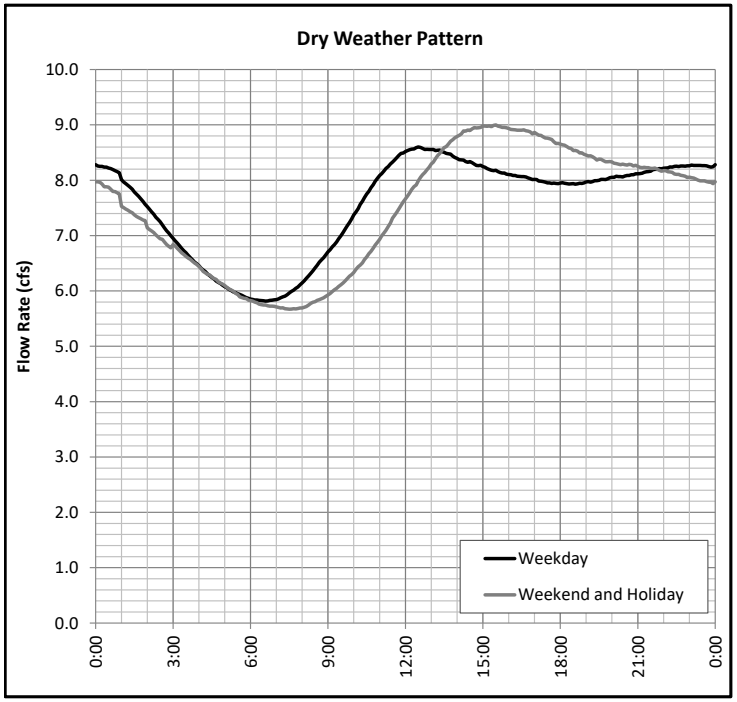
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	39.46	2/17/22 10:15	3.12	2/17/22 11:00
2	1.15	4/22/2022	4/25/2022	34.42	4/23/22 5:45	2.72	4/23/22 16:15
3	1.84	6/6/2022	6/9/2022	25.67	6/7/22 1:55	2.61	6/7/22 2:15
4	1.15	7/5/2022	7/8/2022	28.68	7/8/22 17:10	-	-
5	1.43	8/3/2022	8/5/2022	23.93	8/3/22 21:50	2.28	8/3/22 21:30
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-10
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-13 **Location: Telegraph Road North of Joy Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: MR IV -07 **Interceptor Branch: Middle Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	10.0	200.3	9.8	197.2	30	1
Feb-22	11.4	206.2	9.0	162.1	12	16
Mar-22	13.1	262.3	11.9	238.4	19	12
Apr-22	13.2	256.1	12.5	242.3	20	10
May-22	11.8	236.3	10.9	219.0	17	14
Jun-22	9.0	175.3	8.0	155.8	24	6
Jul-22	6.6	132.9	5.9	117.8	22	9
Aug-22	6.8	137.2	5.9	118.7	20	11
Sep-22	5.4	104.6	5.2	101.5	25	5
Oct-22	4.7	93.6	4.7	93.4	29	2
Nov-22	4.8	93.0	4.5	87.9	25	5
Dec-22	5.6	113.2	5.0	99.2	23	8

Statistics for Significant Wet Weather Events

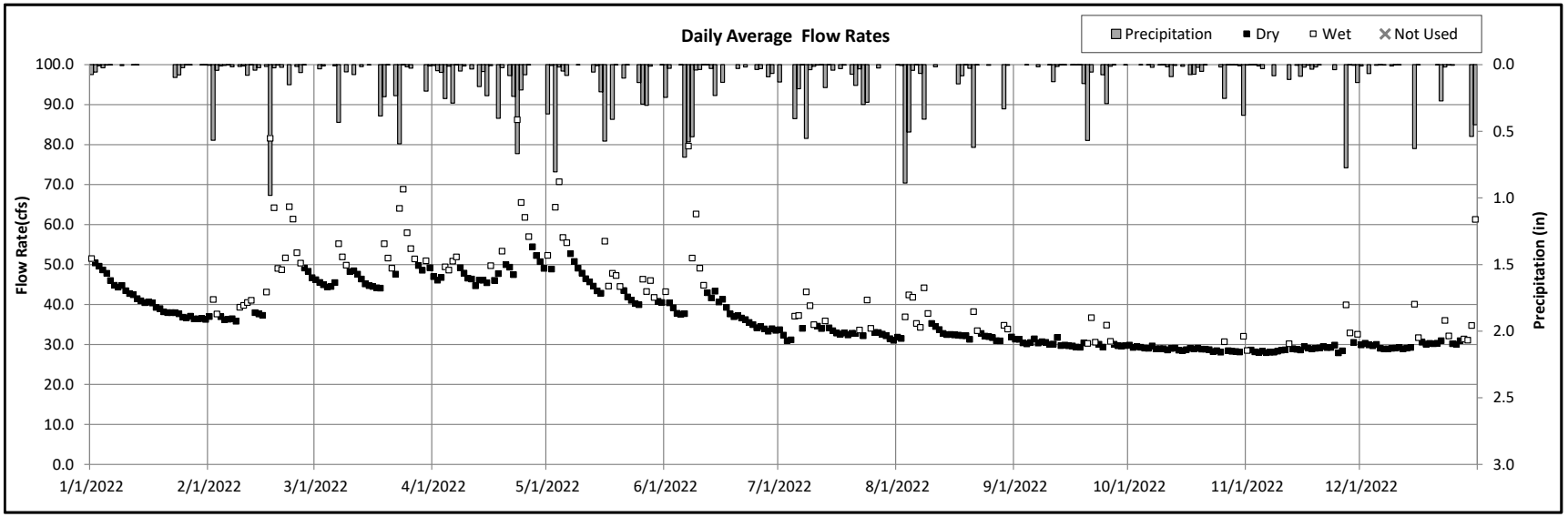
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	31.38	2/17/22 6:30	6.90	2/17/22 10:35
2	1.15	4/22/2022	4/25/2022	26.73	4/23/22 3:40	3.96	4/23/22 6:25
3	1.84	6/6/2022	6/9/2022	31.93	6/7/22 0:20	6.89	6/7/22 3:20
4	1.15	7/5/2022	7/8/2022	30.24	7/8/22 16:45	3.19	7/8/22 17:15
5	1.43	8/3/2022	8/5/2022	28.75	8/3/22 20:20	3.06	8/3/22 20:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

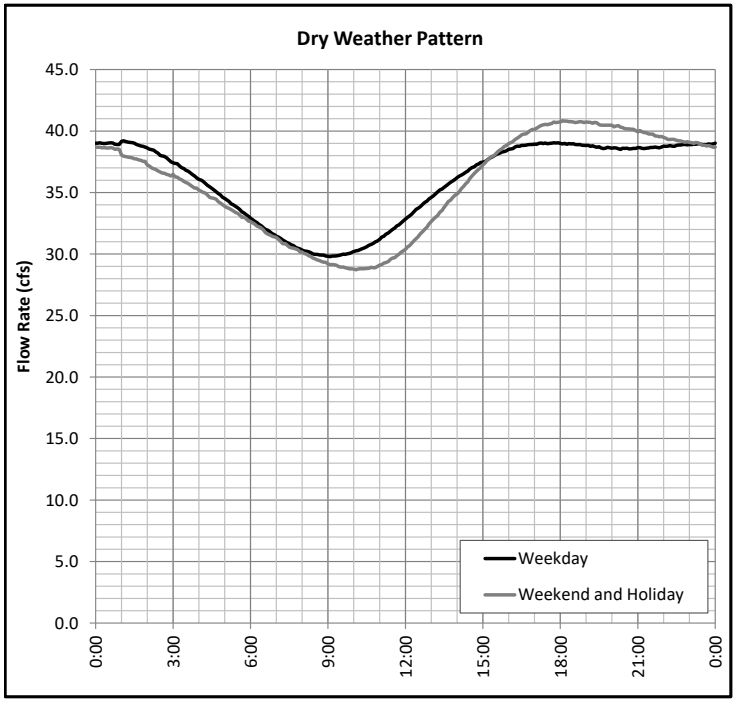
Figure 8-11
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

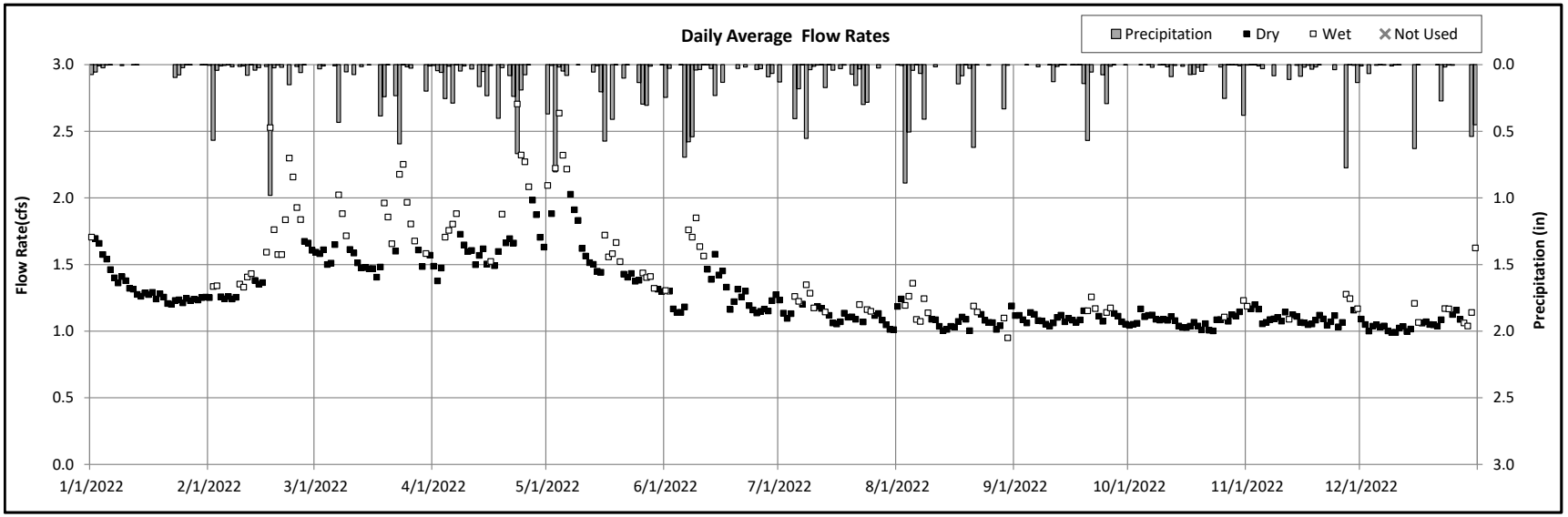
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	41.4	829.7	41.1	823.0	30	1
Feb-22	45.8	828.6	39.6	717.0	12	16
Mar-22	49.6	994.4	46.3	926.9	19	12
Apr-22	51.1	990.6	47.9	929.4	20	10
May-22	47.6	954.1	44.7	895.4	17	14
Jun-22	41.0	795.3	37.5	726.9	24	6
Jul-22	34.1	682.6	32.7	655.3	22	9
Aug-22	34.2	684.6	32.3	647.8	20	11
Sep-22	30.6	592.9	30.2	585.0	25	5
Oct-22	29.0	580.5	28.8	577.2	29	2
Nov-22	29.4	570.4	28.7	557.4	25	5
Dec-22	31.7	635.0	29.8	596.1	23	8

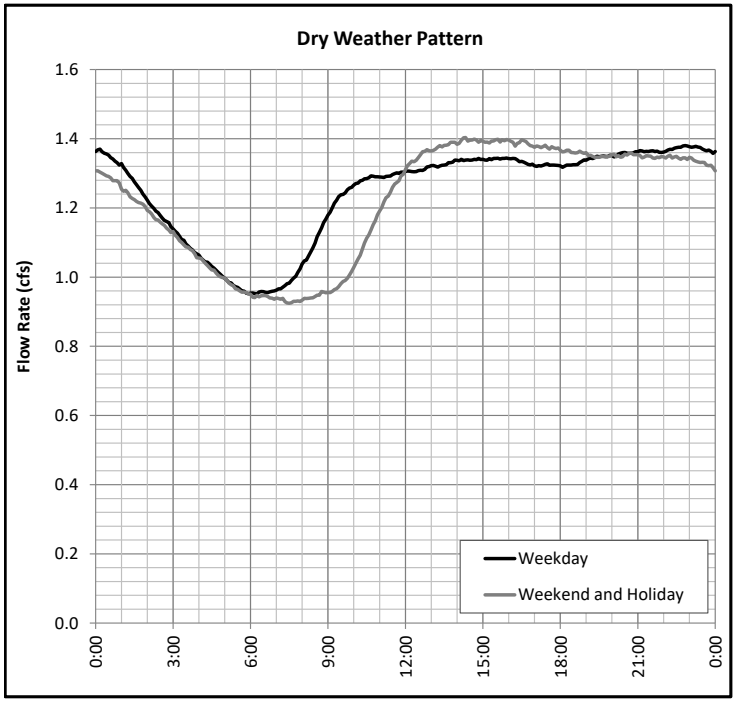
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	102.29	2/17/22 21:15	12.43	2/17/22 11:15
2	1.15	4/22/2022	4/25/2022	110.09	4/23/22 10:15	9.53	4/23/22 6:20
3	1.84	6/6/2022	6/9/2022	107.45	6/7/22 5:10	2.65	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	82.36	7/8/22 18:45	4.01	7/8/22 19:15
5	1.43	8/3/2022	8/5/2022	75.26	8/3/22 21:45	3.83	8/3/22 22:15
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-12
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-15 **Location: Ecorse Road and Hannan Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: WRVI - 54 **Interceptor Branch: Lower Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	1.3	26.8	1.3	26.6	30	1
Feb-22	1.6	28.3	1.4	24.9	12	16
Mar-22	1.7	33.4	1.5	30.8	19	12
Apr-22	1.7	33.8	1.6	31.4	20	10
May-22	1.7	33.3	1.6	31.1	17	14
Jun-22	1.3	25.9	1.3	24.4	24	6
Jul-22	1.1	22.8	1.1	22.2	22	9
Aug-22	1.1	22.2	1.1	21.6	20	11
Sep-22	1.1	21.4	1.1	21.1	25	5
Oct-22	1.1	21.6	1.1	21.5	29	2
Nov-22	1.1	21.5	1.1	21.2	25	5
Dec-22	1.1	21.7	1.0	21.0	23	8

Statistics for Significant Wet Weather Events

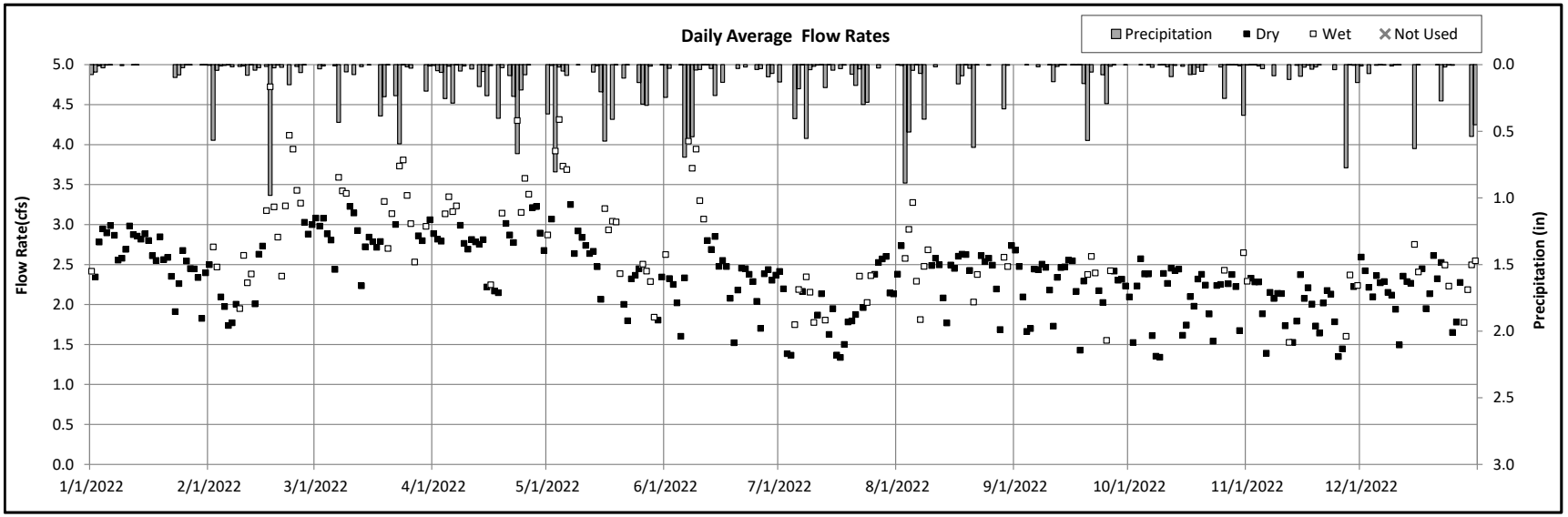
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	3.33	2/17/22 9:50	1.34	2/17/22 10:25
2	1.15	4/22/2022	4/25/2022	3.29	4/23/22 4:15	1.34	4/23/22 4:40
3	1.84	6/6/2022	6/9/2022	2.24	6/8/22 21:35	1.05	6/8/22 22:15
4	1.15	7/5/2022	7/8/2022	2.24	7/8/22 17:50	1.07	7/8/22 18:20
5	1.43	8/3/2022	8/5/2022	2.03	8/4/22 23:45	1.02	8/5/22 0:25
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

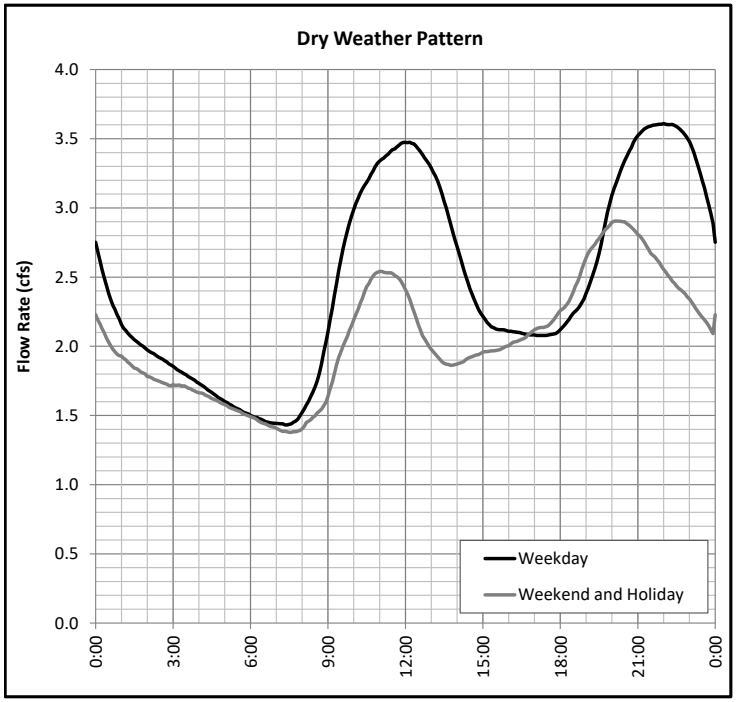
Figure 8-13
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.6	52.1	2.6	52.2	30	1
Feb-22	2.8	49.8	2.4	42.7	12	16
Mar-22	3.0	60.3	2.9	57.3	19	12
Apr-22	2.9	56.8	2.8	53.6	20	10
May-22	2.7	54.6	2.5	49.9	17	14
Jun-22	2.5	48.9	2.3	44.4	24	6
Jul-22	2.0	39.9	2.0	39.2	22	9
Aug-22	2.5	49.2	2.4	48.7	20	11
Sep-22	2.2	43.6	2.2	43.5	25	5
Oct-22	2.1	42.2	2.1	41.6	29	2
Nov-22	2.0	38.1	2.0	37.9	25	5
Dec-22	2.2	44.9	2.2	44.0	23	8

Statistics for Significant Wet Weather Events

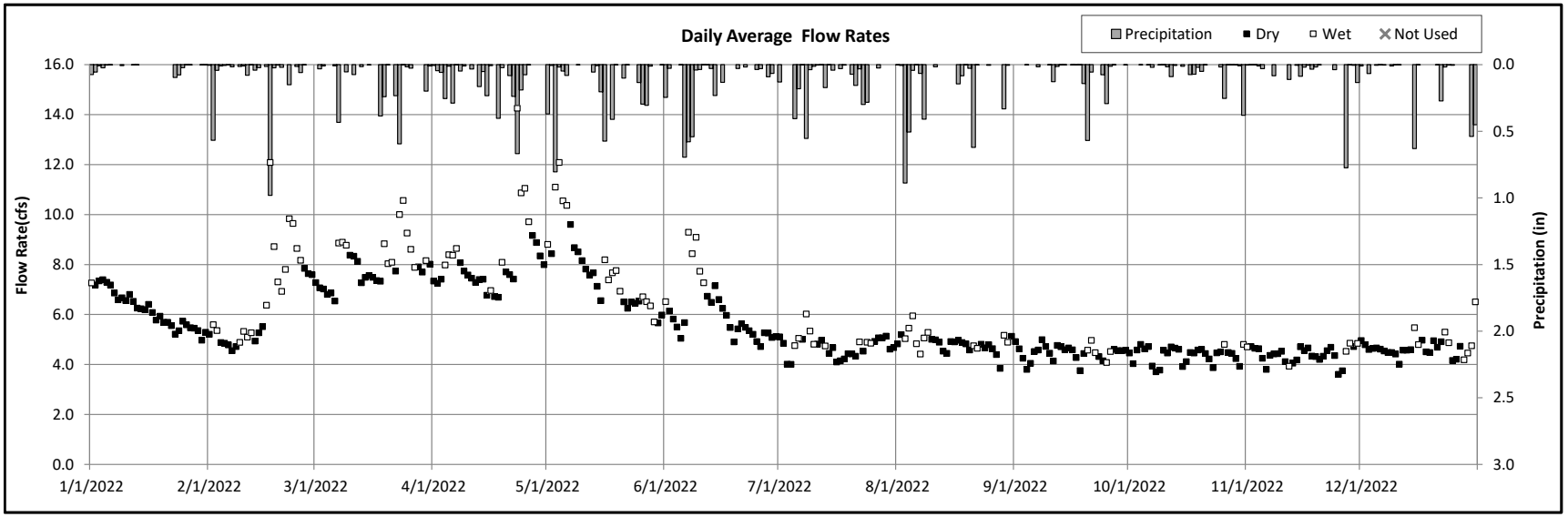
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	6.99	2/17/22 11:15	1.56	2/17/22 11:50
2	1.15	4/22/2022	4/25/2022	6.14	4/23/22 9:00	1.44	4/23/22 9:15
3	1.84	6/6/2022	6/9/2022	5.21	6/8/22 20:30	0.76	6/6/22 1:35
4	1.15	7/5/2022	7/8/2022	4.19	7/8/22 15:25	1.33	7/8/22 15:40
5	1.43	8/3/2022	8/5/2022	5.45	8/4/22 22:30	1.43	8/4/22 22:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

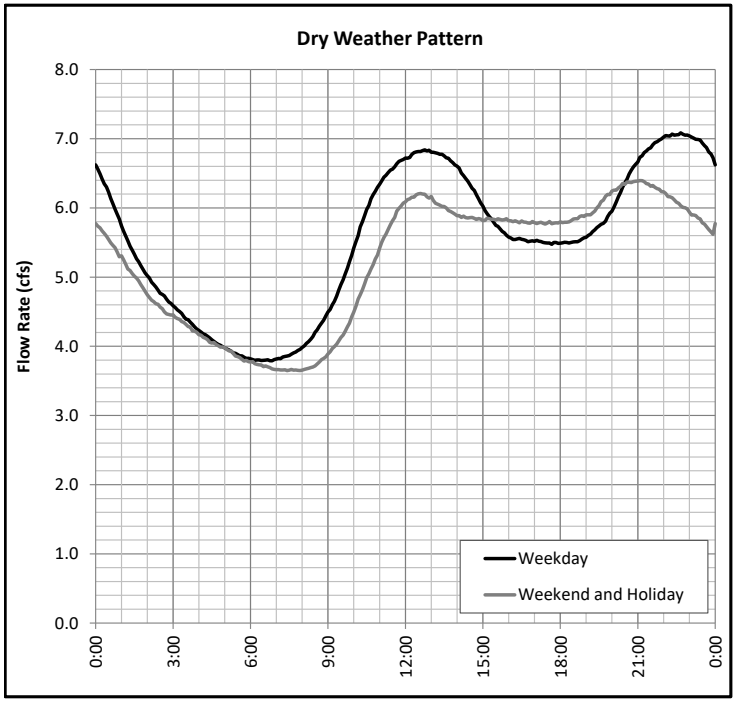
Figure 8-14
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	6.2	123.9	6.2	123.2	30	1
Feb-22	6.6	119.4	5.6	102.1	12	16
Mar-22	8.0	160.3	7.5	149.9	19	12
Apr-22	8.2	159.3	7.6	147.5	20	10
May-22	7.7	155.1	7.3	146.1	17	14
Jun-22	6.1	118.5	5.6	109.1	24	6
Jul-22	4.7	94.9	4.6	92.4	22	9
Aug-22	4.9	97.3	4.8	95.3	20	11
Sep-22	4.5	86.6	4.5	86.4	25	5
Oct-22	4.4	87.8	4.4	87.2	29	2
Nov-22	4.4	85.1	4.4	84.4	25	5
Dec-22	4.7	94.2	4.6	91.9	23	8

Statistics for Significant Wet Weather Events

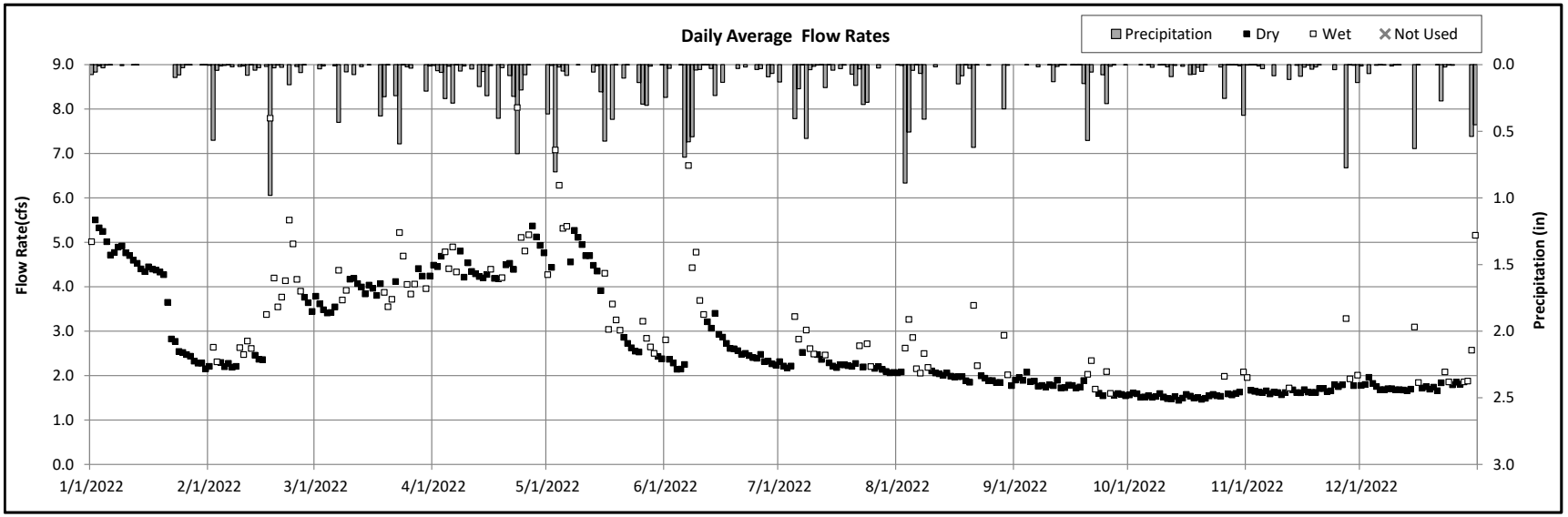
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	16.27	2/17/22 9:30	2.00	2/17/22 9:55
2	1.15	4/22/2022	4/25/2022	16.90	4/23/22 9:25	1.98	4/23/22 9:15
3	1.84	6/6/2022	6/9/2022	11.53	6/8/22 21:20	1.08	6/6/22 0:05
4	1.15	7/5/2022	7/8/2022	11.81	7/8/22 17:10	1.64	7/8/22 17:40
5	1.43	8/3/2022	8/5/2022	9.96	8/4/22 22:40	1.52	8/4/22 23:05
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

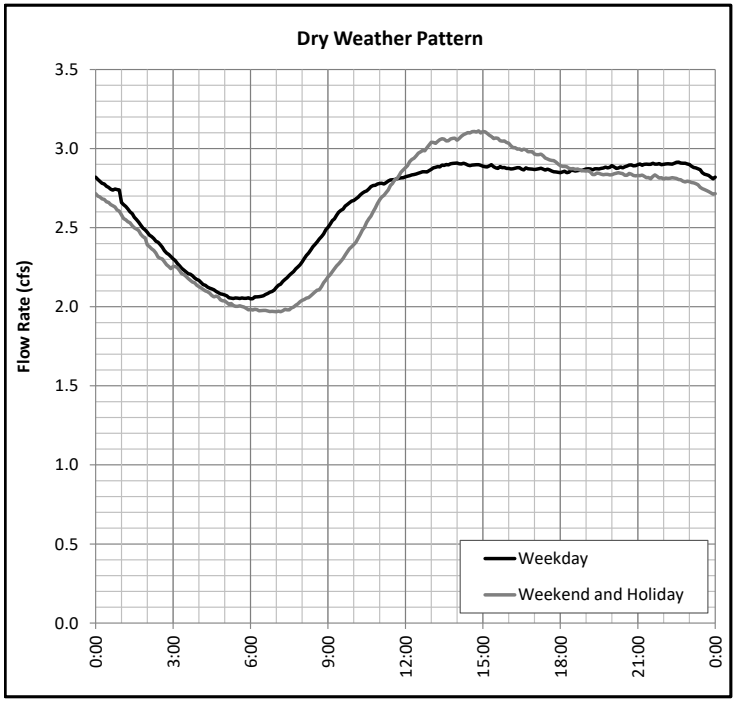
Figure 8-15
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

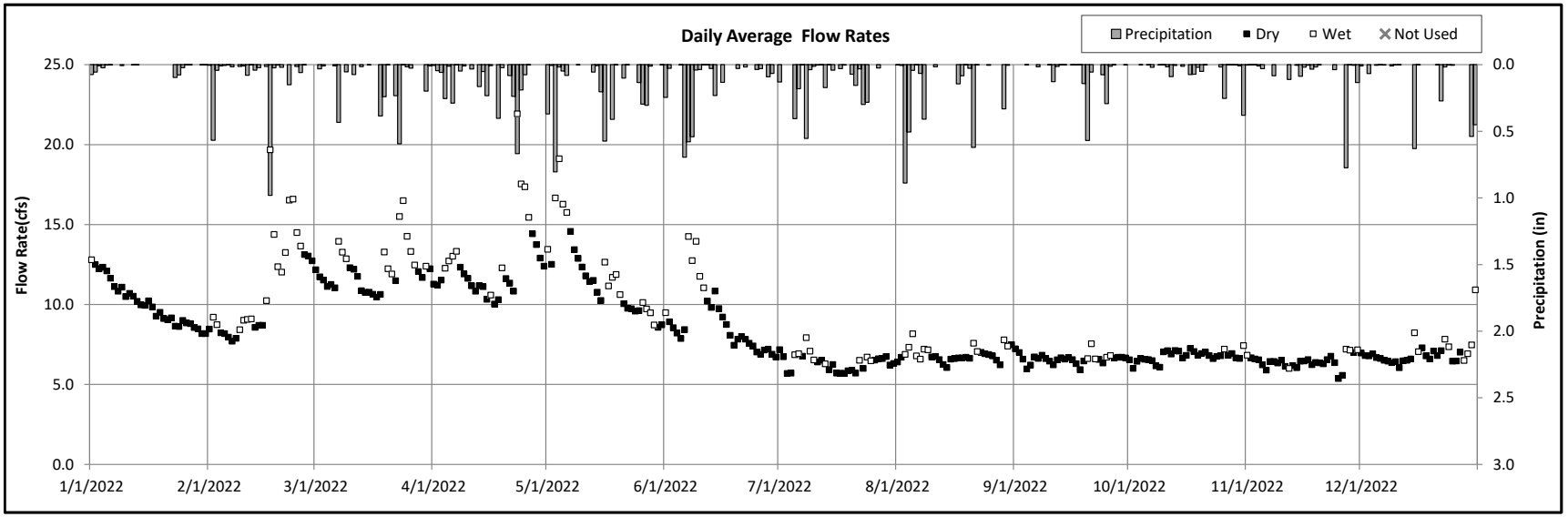
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	4.0	79.3	3.9	78.6	30	1
Feb-22	3.3	59.5	2.6	47.3	12	16
Mar-22	4.0	79.7	3.9	78.4	19	12
Apr-22	4.7	90.8	4.5	87.7	20	10
May-22	3.9	78.4	3.8	76.1	17	14
Jun-22	2.9	56.1	2.5	49.2	24	6
Jul-22	2.4	47.4	2.2	44.6	22	9
Aug-22	2.2	43.6	2.0	39.2	20	11
Sep-22	1.8	34.8	1.8	34.2	25	5
Oct-22	1.6	31.4	1.5	30.7	29	2
Nov-22	1.7	33.8	1.7	32.2	25	5
Dec-22	1.9	39.0	1.7	34.9	23	8

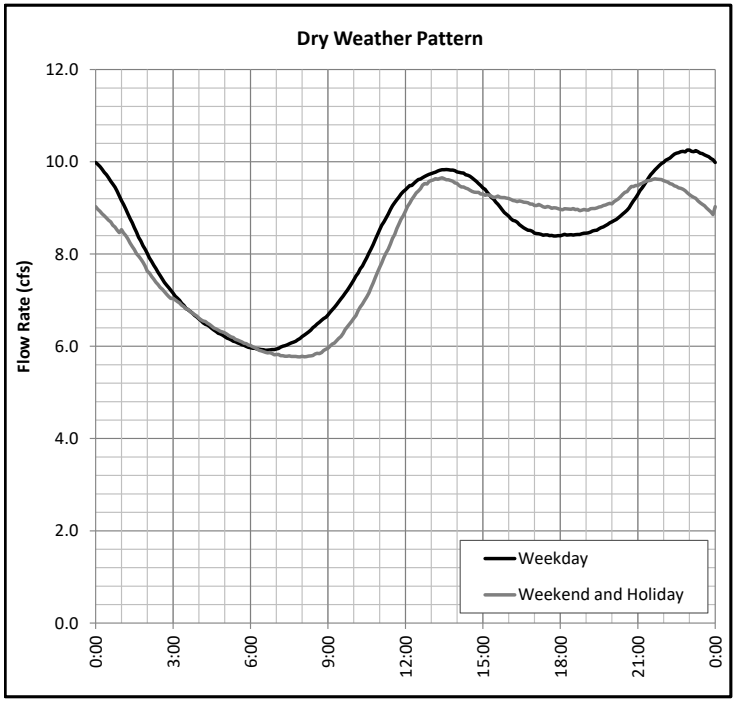
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	12.32	2/17/22 6:35	2.54	2/17/22 7:20
2	1.15	4/22/2022	4/25/2022	14.23	4/23/22 3:55	2.83	4/23/22 4:00
3	1.84	6/6/2022	6/9/2022	14.19	6/7/22 1:00	2.87	6/7/22 1:20
4	1.15	7/5/2022	7/8/2022	8.37	7/5/22 4:10	1.95	7/5/22 4:45
5	1.43	8/3/2022	8/5/2022	12.58	8/4/22 22:35	2.58	8/4/22 23:10
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-16
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-21 **Location: Merriman Road and Lower Rouge River** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: RVI 14-19 **Interceptor Branch: Lower Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	10.1	201.5	10.0	199.7	30	1
Feb-22	11.1	200.3	9.4	170.7	12	16
Mar-22	12.2	244.6	11.4	228.4	19	12
Apr-22	12.6	244.6	11.6	224.9	20	10
May-22	11.8	235.7	11.0	220.9	17	14
Jun-22	9.0	174.3	8.2	158.7	24	6
Jul-22	6.4	127.9	6.2	124.4	22	9
Aug-22	6.9	137.6	6.6	133.2	20	11
Sep-22	6.6	127.9	6.5	127.0	25	5
Oct-22	6.8	135.6	6.7	134.8	29	2
Nov-22	6.4	124.4	6.3	122.7	25	5
Dec-22	7.0	139.5	6.7	133.9	23	8

Statistics for Significant Wet Weather Events

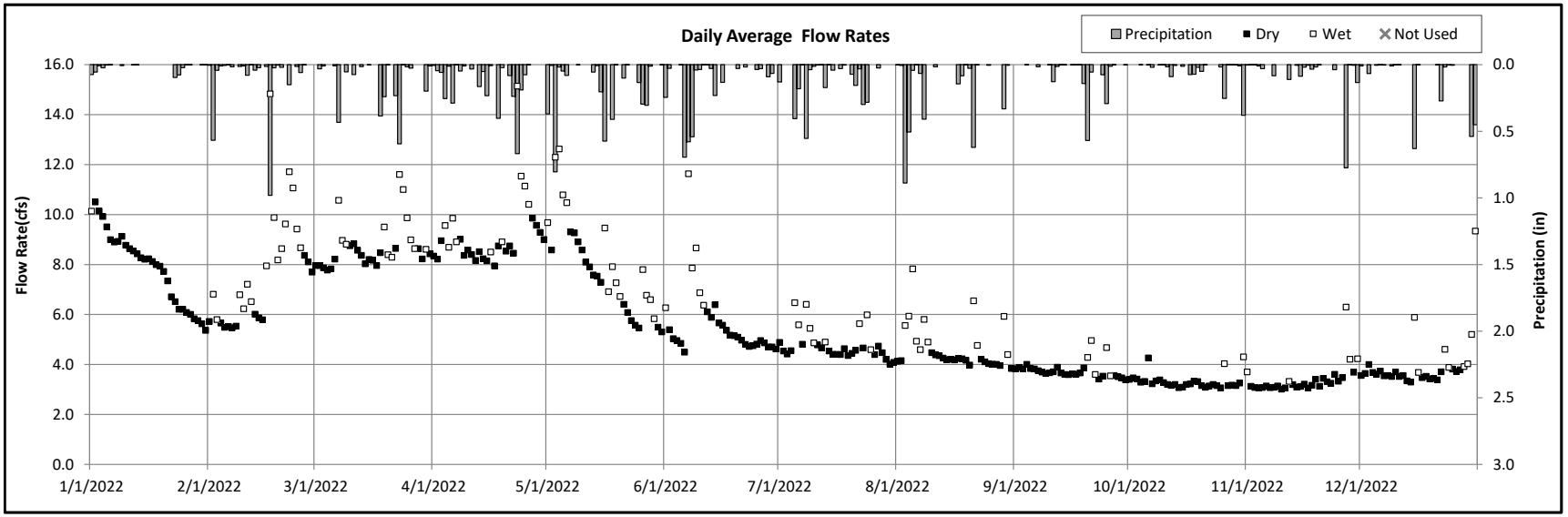
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	25.03	2/17/22 9:45	1.90	2/17/22 9:50
2	1.15	4/22/2022	4/25/2022	26.84	4/23/22 4:05	1.96	4/23/22 4:15
3	1.84	6/6/2022	6/9/2022	17.72	6/8/22 21:30	1.05	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	14.99	7/8/22 17:30	1.45	7/8/22 18:15
5	1.43	8/3/2022	8/5/2022	13.94	8/4/22 23:00	1.40	8/4/22 23:30
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

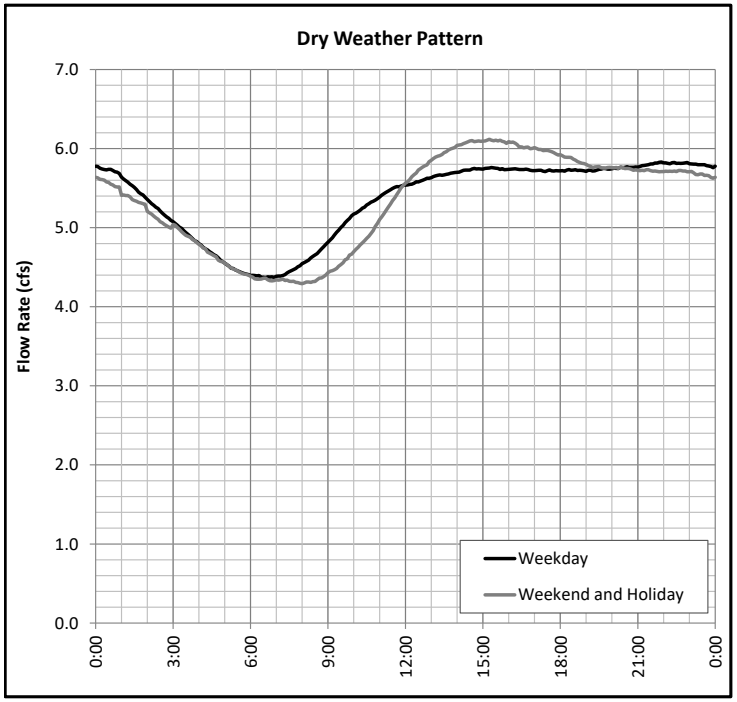
Figure 8-17
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	7.9	158.0	7.8	156.5	30	1
Feb-22	7.7	138.6	6.3	113.4	12	16
Mar-22	8.7	174.5	8.3	165.4	19	12
Apr-22	9.2	178.1	8.6	167.7	20	10
May-22	7.9	157.8	7.2	145.0	17	14
Jun-22	5.7	110.2	5.1	99.3	24	6
Jul-22	4.8	96.1	4.5	90.1	22	9
Aug-22	4.6	93.2	4.2	83.2	20	11
Sep-22	3.8	73.0	3.7	71.3	25	5
Oct-22	3.3	66.5	3.3	65.3	29	2
Nov-22	3.4	65.9	3.2	62.2	25	5
Dec-22	4.0	79.5	3.6	71.8	23	8

Statistics for Significant Wet Weather Events

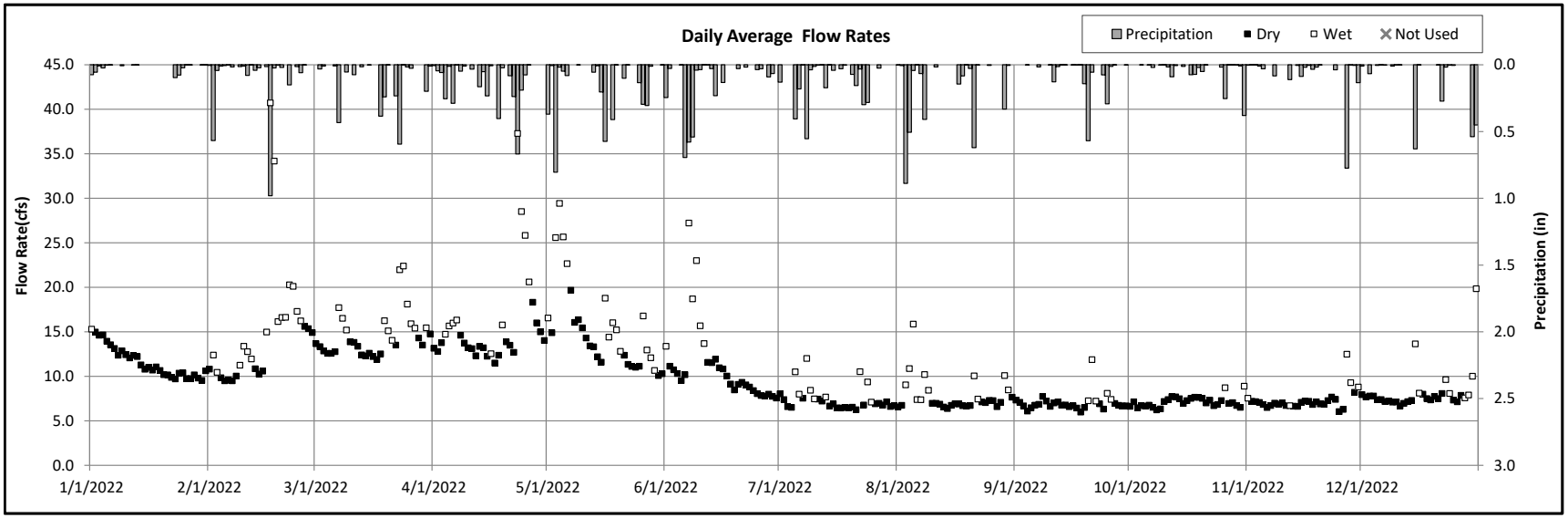
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	18.87	2/17/22 8:10	5.49	2/17/22 11:05
2	1.15	4/22/2022	4/25/2022	19.42	4/23/22 4:10	2.39	4/23/22 6:25
3	1.84	6/6/2022	6/9/2022	23.15	6/7/22 1:50	0.82	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	12.39	7/5/22 4:10	1.30	7/8/22 14:30
5	1.43	8/3/2022	8/5/2022	16.95	8/4/22 23:25	1.49	8/5/22 0:00
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

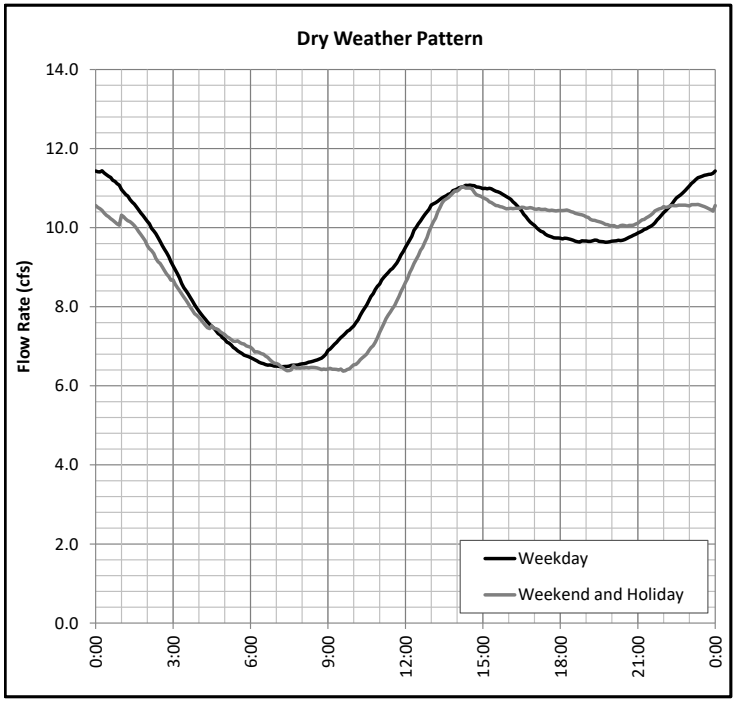
Figure 8-18
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	11.6	232.6	11.5	230.1	30	1
Feb-22	15.1	272.6	11.4	206.1	12	16
Mar-22	14.6	292.5	13.1	262.1	19	12
Apr-22	15.9	307.4	13.6	264.2	20	10
May-22	15.3	306.2	13.2	264.4	17	14
Jun-22	11.3	219.3	9.5	183.9	24	6
Jul-22	7.5	149.6	6.8	137.1	22	9
Aug-22	7.8	156.7	6.9	137.7	20	11
Sep-22	7.0	136.0	6.7	130.8	25	5
Oct-22	7.1	142.8	7.0	140.5	29	2
Nov-22	7.3	141.4	7.0	135.0	25	5
Dec-22	8.2	165.2	7.4	148.8	23	8

Statistics for Significant Wet Weather Events

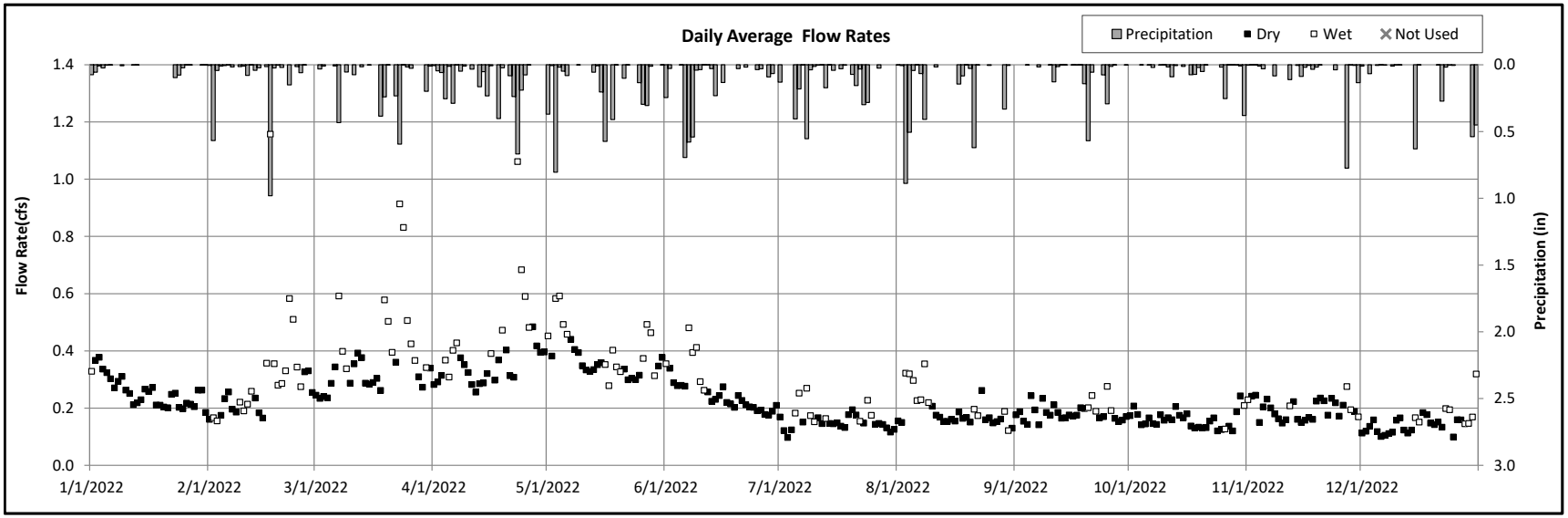
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	50.78	2/17/22 14:55	4.92	2/17/22 11:30
2	1.15	4/22/2022	4/25/2022	48.84	4/23/22 5:15	3.04	4/23/22 5:40
3	1.84	6/6/2022	6/9/2022	43.29	6/7/22 1:40	4.12	6/7/22 3:20
4	1.15	7/5/2022	7/8/2022	27.86	7/8/22 15:30	2.06	7/8/22 17:20
5	1.43	8/3/2022	8/5/2022	31.15	8/5/22 0:05	2.32	8/5/22 0:00
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

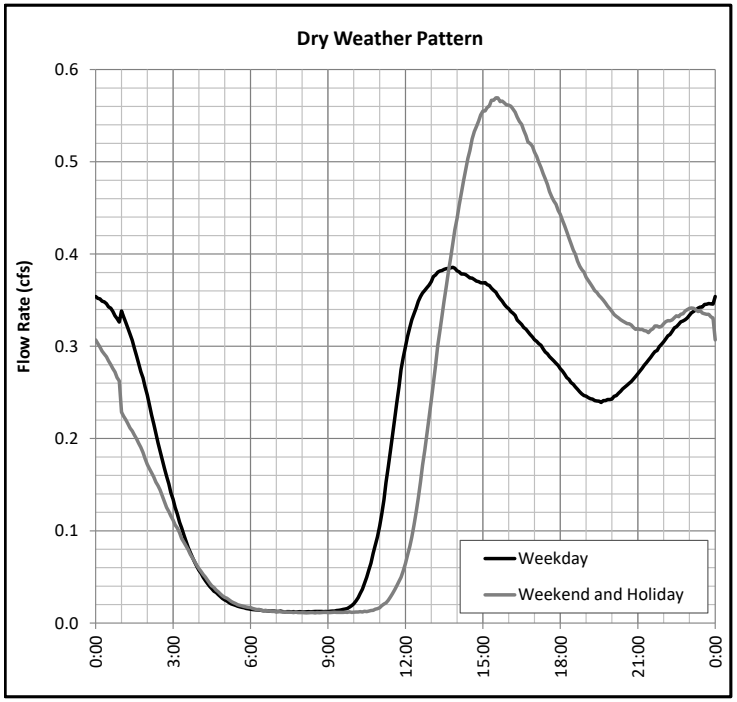
Figure 8-19
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

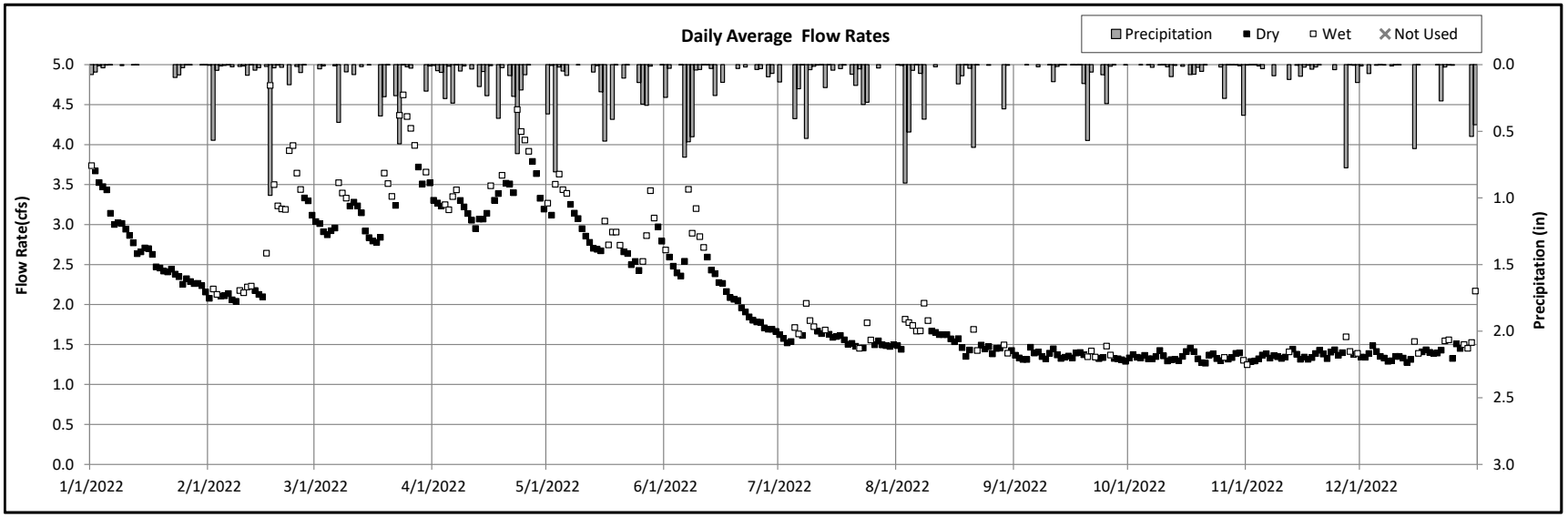
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	0.3	5.1	0.3	5.1	30	1
Feb-22	0.3	5.4	0.2	4.1	12	16
Mar-22	0.4	7.7	0.3	6.0	19	12
Apr-22	0.4	7.7	0.3	6.5	20	10
May-22	0.4	7.7	0.3	7.0	17	14
Jun-22	0.3	5.0	0.2	4.5	24	6
Jul-22	0.2	3.2	0.1	2.9	22	9
Aug-22	0.2	3.9	0.2	3.3	20	11
Sep-22	0.2	3.6	0.2	3.5	25	5
Oct-22	0.2	3.2	0.2	3.2	29	2
Nov-22	0.2	3.8	0.2	3.7	25	5
Dec-22	0.1	3.0	0.1	2.7	23	8

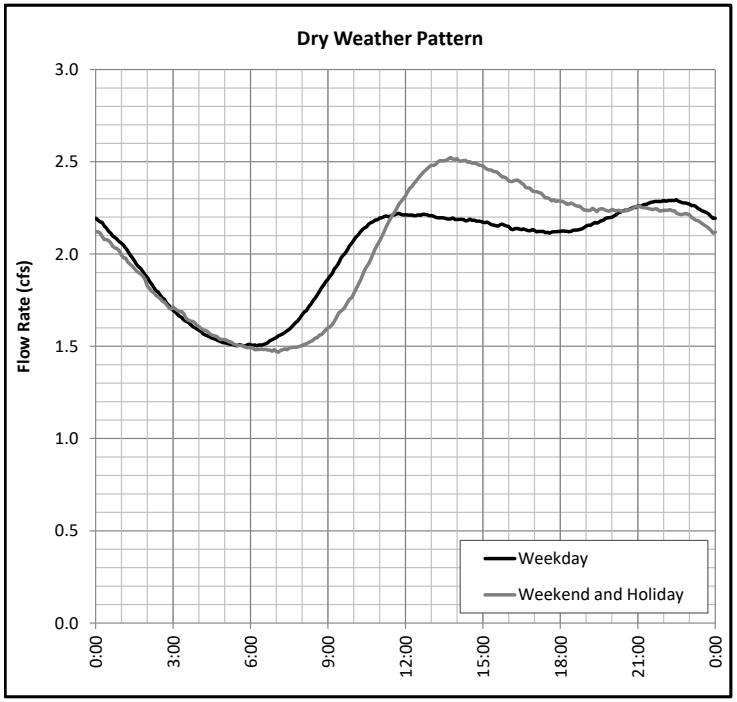
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	2.26	2/17/22 9:15	0.73	2/17/22 9:25
2	1.15	4/22/2022	4/25/2022	1.53	4/23/22 12:40	0.53	4/23/22 13:30
3	1.84	6/6/2022	6/9/2022	1.05	6/8/22 23:00	0.39	6/8/22 23:40
4	1.15	7/5/2022	7/8/2022	0.99	7/8/22 15:20	0.38	7/8/22 15:40
5	1.43	8/3/2022	8/5/2022	1.40	8/3/22 21:20	0.49	8/3/22 21:40
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-20
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-28 **Location: Inkster Road south of Rougeway Street** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: **Interceptor Branch: Middle Rouge**





Monthly Statistics

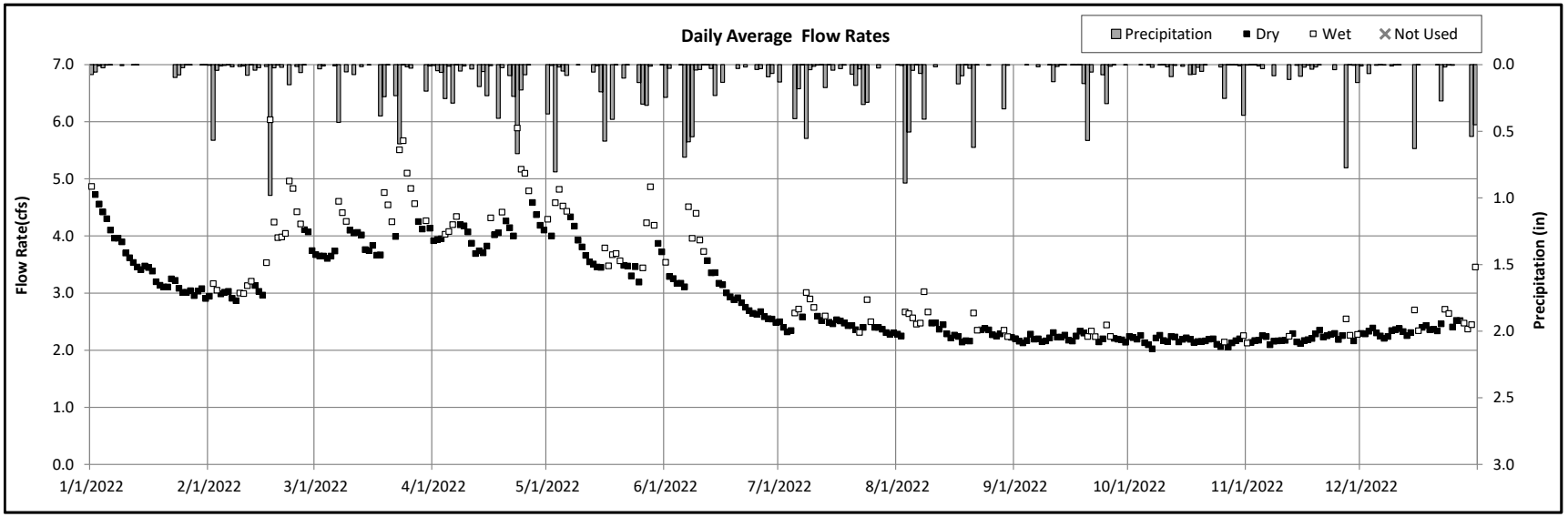
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.7	54.7	2.7	54.0	30	1
Feb-22	2.8	49.9	2.4	43.2	12	16
Mar-22	3.4	67.6	3.1	61.9	19	12
Apr-22	3.4	66.3	3.3	63.8	20	10
May-22	2.9	58.9	2.8	56.3	17	14
Jun-22	2.3	44.1	2.1	40.8	24	6
Jul-22	1.6	31.9	1.5	31.0	22	9
Aug-22	1.6	31.4	1.5	30.2	20	11
Sep-22	1.4	26.4	1.4	26.3	25	5
Oct-22	1.3	26.9	1.3	26.9	29	2
Nov-22	1.4	26.5	1.4	26.3	25	5
Dec-22	1.4	28.6	1.4	27.5	23	8

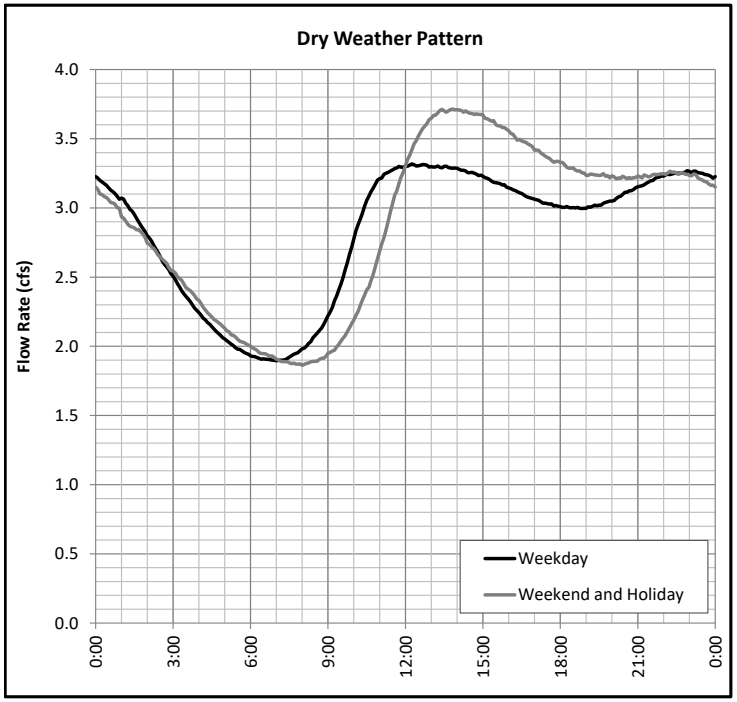
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	6.73	2/17/22 7:10	2.41	2/17/22 8:55
2	1.15	4/22/2022	4/25/2022	4.93	4/23/22 11:20	1.80	4/23/22 11:50
3	1.84	6/6/2022	6/9/2022	4.09	6/8/22 20:35	1.50	6/8/22 22:00
4	1.15	7/5/2022	7/8/2022	4.57	7/8/22 15:45	1.52	7/8/22 16:10
5	1.43	8/3/2022	8/5/2022	4.45	8/3/22 19:10	1.45	8/3/22 21:00
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-21
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-29 **Location: Along Rouge River, Inkster Road south of Rougeway Street** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: **Interceptor Branch: Middle Rouge**





Monthly Statistics

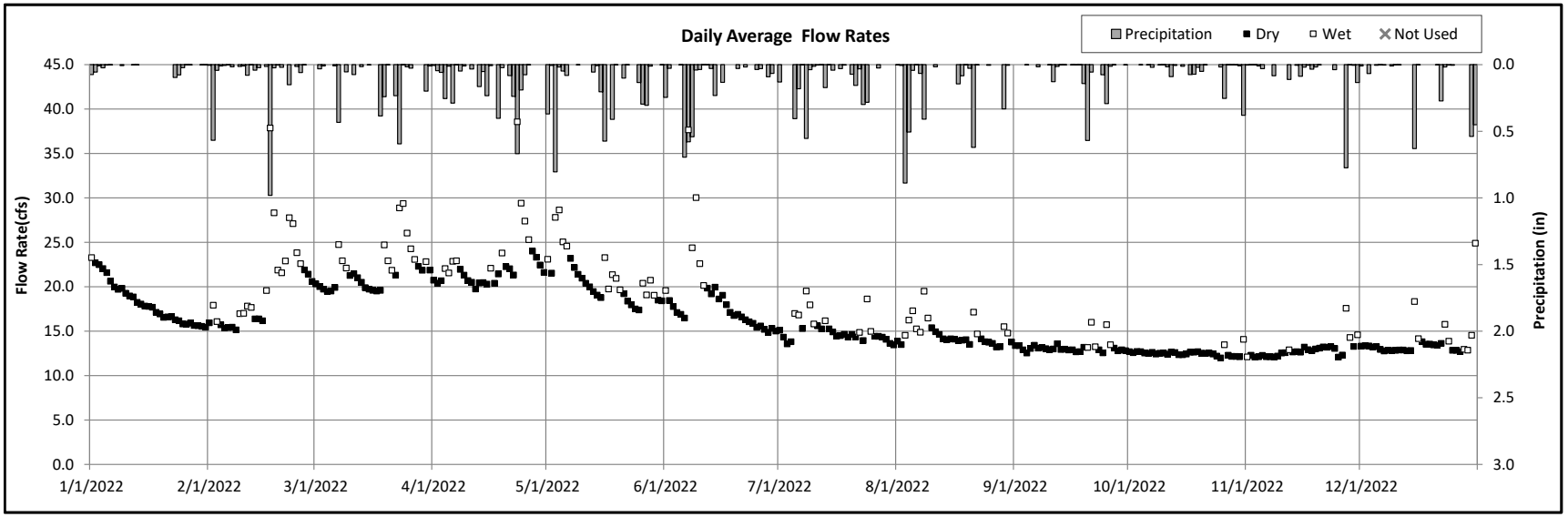
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	3.5	71.0	3.5	70.2	30	1
Feb-22	3.6	65.6	3.2	58.5	12	16
Mar-22	4.2	84.1	3.9	77.3	19	12
Apr-22	4.2	82.1	4.0	78.3	20	10
May-22	3.9	77.5	3.7	73.5	17	14
Jun-22	3.2	61.2	2.9	57.1	24	6
Jul-22	2.5	50.2	2.4	48.6	22	9
Aug-22	2.4	47.8	2.3	45.9	20	11
Sep-22	2.2	43.1	2.2	42.8	25	5
Oct-22	2.2	43.5	2.2	43.4	29	2
Nov-22	2.2	43.0	2.2	42.7	25	5
Dec-22	2.4	48.6	2.3	47.1	23	8

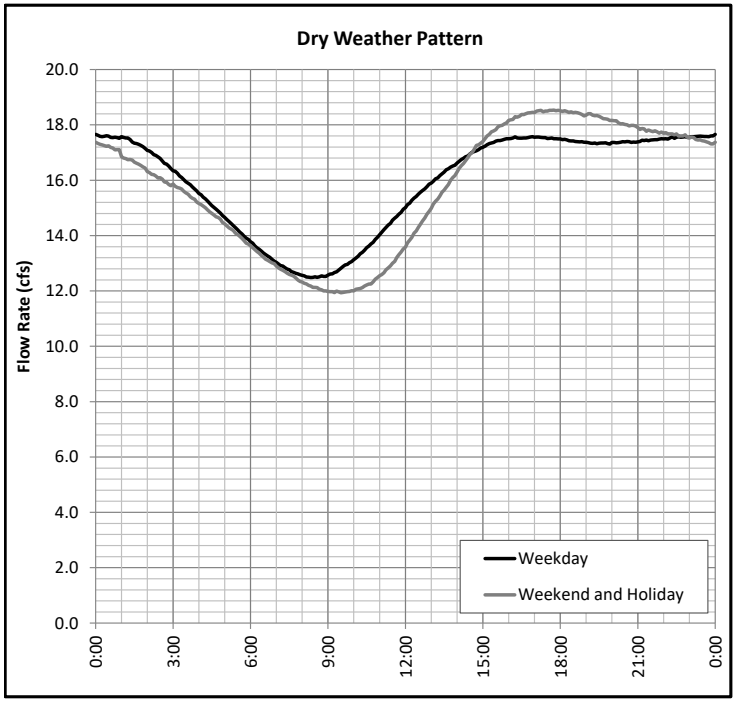
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	9.14	2/17/22 8:30	2.55	2/17/22 9:15
2	1.15	4/22/2022	4/25/2022	6.92	4/23/22 11:15	1.99	4/23/22 12:15
3	1.84	6/6/2022	6/9/2022	5.66	6/8/22 21:45	1.72	6/8/22 22:20
4	1.15	7/5/2022	7/8/2022	4.90	7/6/22 12:15	1.72	7/8/22 16:25
5	1.43	8/3/2022	8/5/2022	5.70	8/3/22 20:30	1.69	8/3/22 21:00
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-22
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-30 **Location: Hines Drive and Outer Drive** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: MR 1-11 **Interceptor Branch: Middle Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	18.2	364.9	18.0	361.5	30	1
Feb-22	20.1	363.5	17.1	310.2	12	16
Mar-22	22.0	440.9	20.5	409.8	19	12
Apr-22	22.7	440.5	21.3	412.8	20	10
May-22	20.9	418.3	19.7	393.7	17	14
Jun-22	18.7	363.5	17.0	329.7	24	6
Jul-22	15.2	303.6	14.5	289.7	22	9
Aug-22	14.7	294.5	14.0	280.0	20	11
Sep-22	13.2	255.9	13.0	251.6	25	5
Oct-22	12.5	251.1	12.4	249.4	29	2
Nov-22	12.9	250.0	12.6	244.7	25	5
Dec-22	13.8	277.2	13.1	262.7	23	8

Statistics for Significant Wet Weather Events

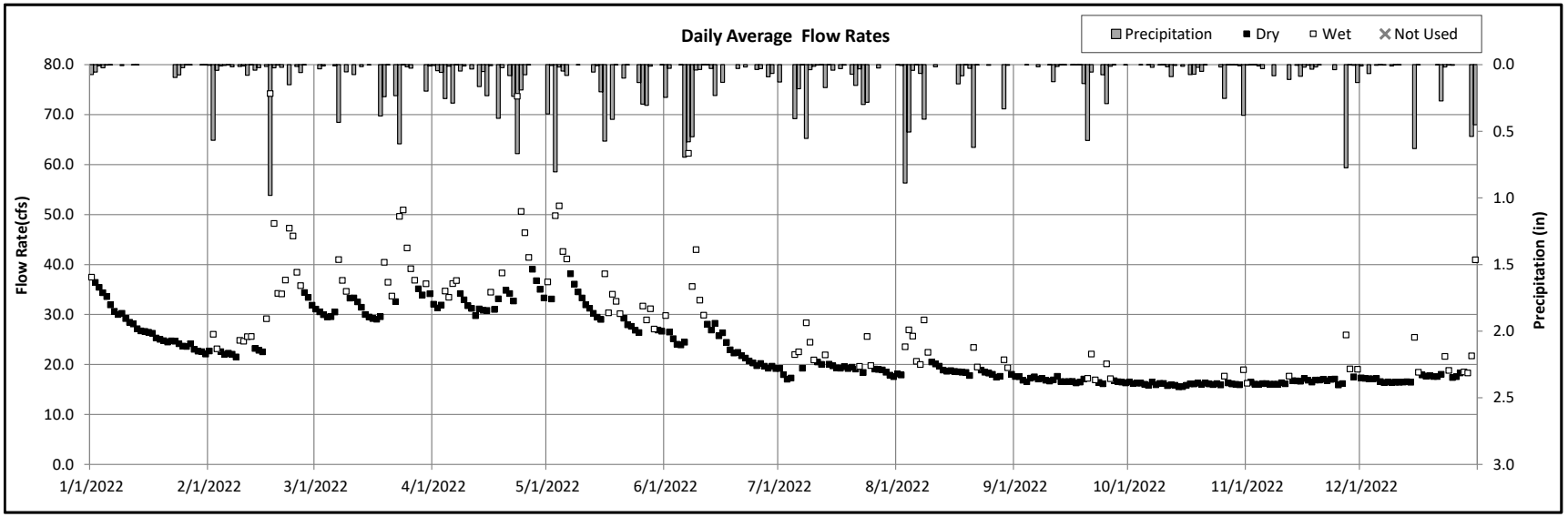
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	46.40	2/17/22 10:05	8.88	2/17/22 10:25
2	1.15	4/22/2022	4/25/2022	46.03	4/23/22 7:20	7.08	4/23/22 6:20
3	1.84	6/6/2022	6/9/2022	52.27	6/7/22 4:30	2.40	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	36.22	7/8/22 17:40	3.20	7/8/22 18:15
5	1.43	8/3/2022	8/5/2022	22.21	8/3/22 21:05	2.96	8/3/22 21:35
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

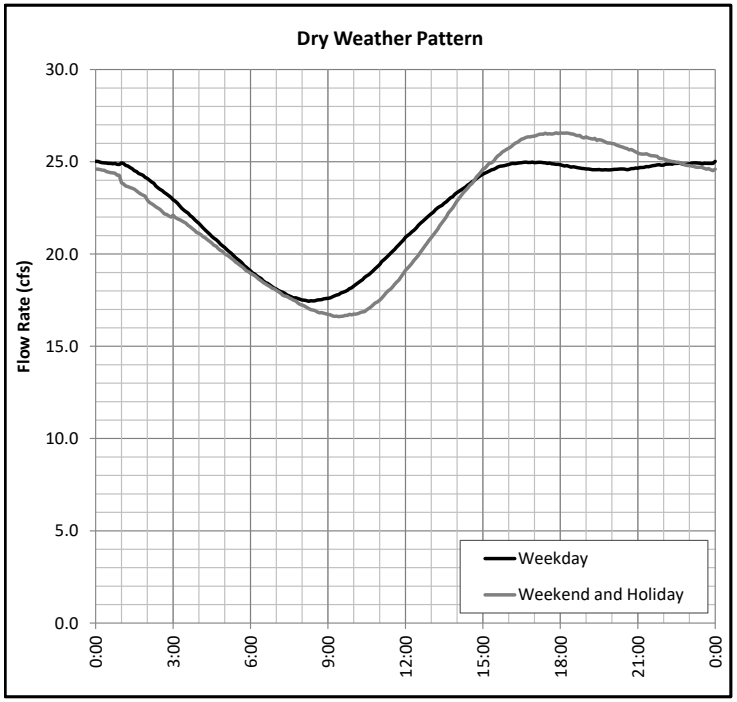
Figure 8-23
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	27.5	551.4	27.2	544.8	30	1
Feb-22	31.2	565.3	25.1	454.1	12	16
Mar-22	34.6	693.6	31.3	626.9	19	12
Apr-22	36.1	700.2	32.9	637.5	20	10
May-22	33.0	661.7	30.5	610.8	17	14
Jun-22	26.2	507.8	23.0	446.4	24	6
Jul-22	20.0	401.2	18.9	378.6	22	9
Aug-22	20.1	401.8	18.5	371.3	20	11
Sep-22	17.1	331.8	16.8	325.7	25	5
Oct-22	16.2	324.3	16.0	321.4	29	2
Nov-22	17.0	330.0	16.5	320.2	25	5
Dec-22	18.6	373.0	17.1	342.8	23	8

Statistics for Significant Wet Weather Events

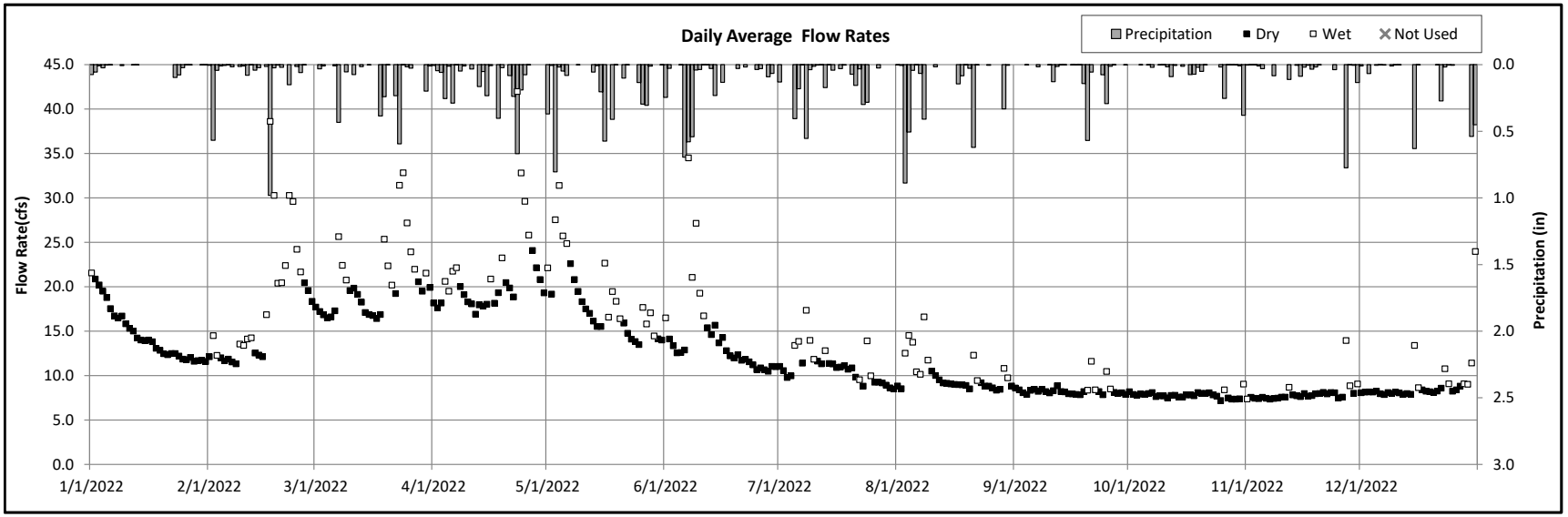
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	97.01	2/17/22 10:45	10.38	2/17/22 10:30
2	1.15	4/22/2022	4/25/2022	96.17	4/23/22 7:15	8.54	4/23/22 6:20
3	1.84	6/6/2022	6/9/2022	91.96	6/7/22 4:40	11.09	6/7/22 3:15
4	1.15	7/5/2022	7/8/2022	63.63	7/8/22 17:30	3.95	7/8/22 18:15
5	1.43	8/3/2022	8/5/2022	54.05	8/3/22 21:05	3.56	8/3/22 22:00
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

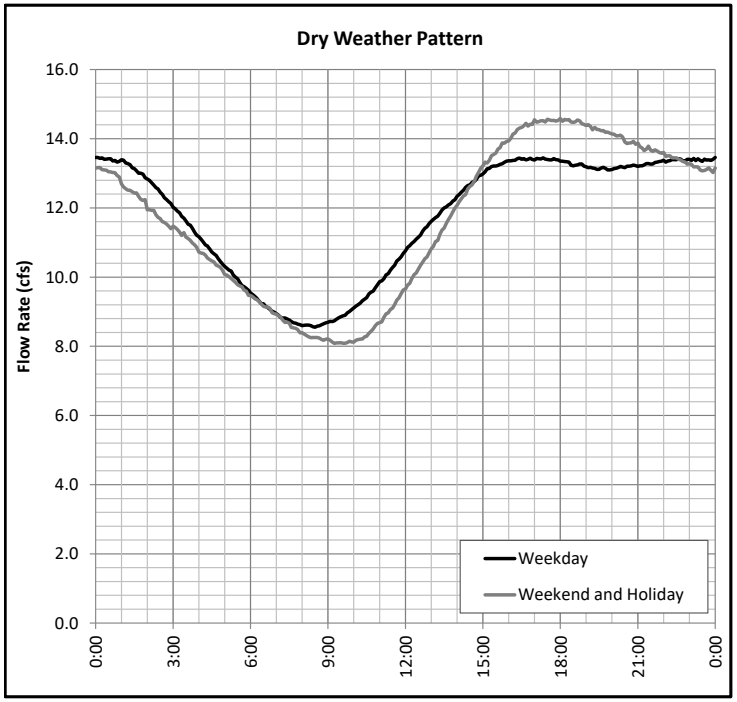
Figure 8-24
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	14.7	293.6	14.4	289.0	30	1
Feb-22	17.9	324.7	13.8	249.9	12	16
Mar-22	20.6	412.0	18.0	360.6	19	12
Apr-22	21.4	414.4	19.1	371.2	20	10
May-22	18.5	369.7	16.6	332.5	17	14
Jun-22	14.5	280.7	12.5	241.7	24	6
Jul-22	11.0	220.7	10.2	204.9	22	9
Aug-22	10.1	201.5	9.0	180.2	20	11
Sep-22	8.4	162.3	8.2	158.1	25	5
Oct-22	7.8	156.3	7.7	155.1	29	2
Nov-22	8.0	155.2	7.7	149.1	25	5
Dec-22	9.1	182.8	8.2	163.4	23	8

Statistics for Significant Wet Weather Events

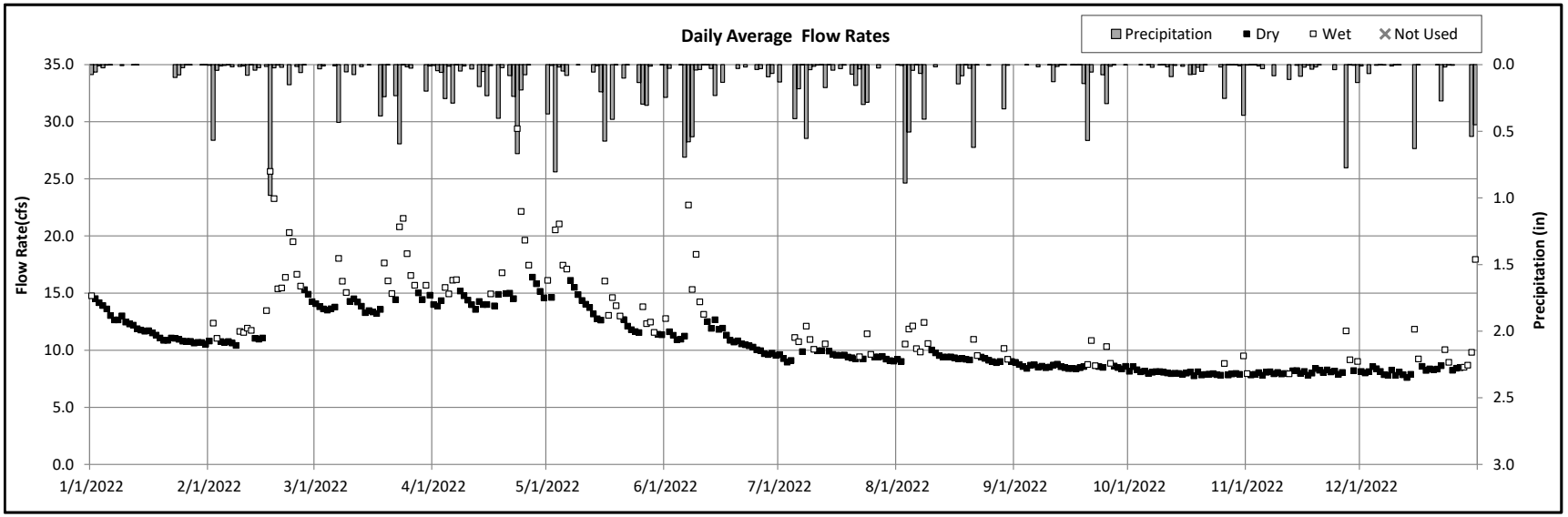
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	48.08	2/17/22 10:50	9.94	2/17/22 10:25
2	1.15	4/22/2022	4/25/2022	46.84	4/23/22 3:50	8.07	4/23/22 6:15
3	1.84	6/6/2022	6/9/2022	43.99	6/7/22 4:30	10.63	6/7/22 3:40
4	1.15	7/5/2022	7/8/2022	41.16	7/8/22 17:35	3.53	7/8/22 18:15
5	1.43	8/3/2022	8/5/2022	33.98	8/3/22 20:40	3.09	8/3/22 21:55
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

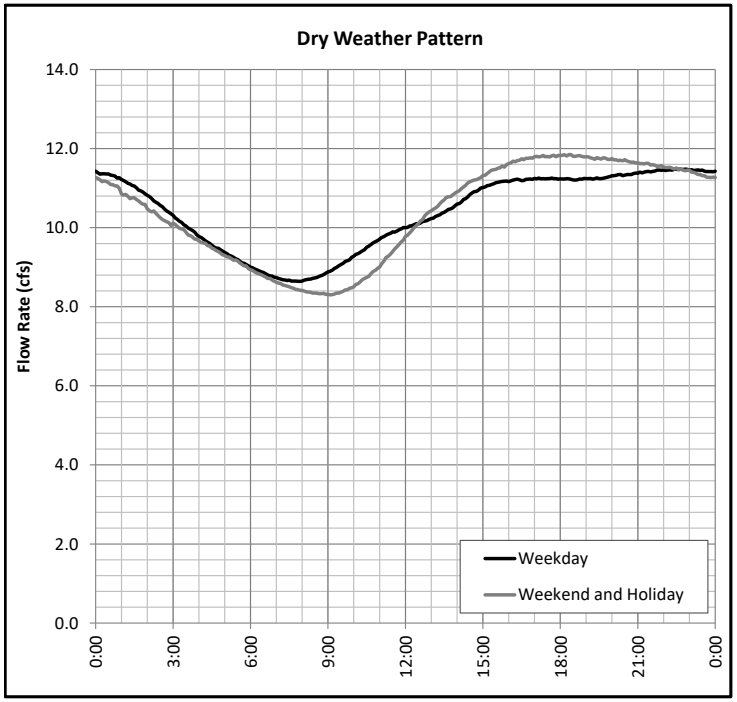
Figure 8-25
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	11.9	238.8	11.8	236.9	30	1
Feb-22	14.0	254.1	11.8	213.3	12	16
Mar-22	15.2	304.4	13.9	279.0	19	12
Apr-22	15.8	306.5	14.6	282.4	20	10
May-22	14.1	282.4	13.2	264.1	17	14
Jun-22	11.9	230.8	10.9	210.6	24	6
Jul-22	9.8	196.1	9.4	189.0	22	9
Aug-22	9.8	195.6	9.3	185.8	20	11
Sep-22	8.7	168.7	8.6	165.8	25	5
Oct-22	8.1	161.7	8.0	160.2	29	2
Nov-22	8.2	159.5	8.0	156.0	25	5
Dec-22	8.8	176.3	8.2	163.7	23	8

Statistics for Significant Wet Weather Events

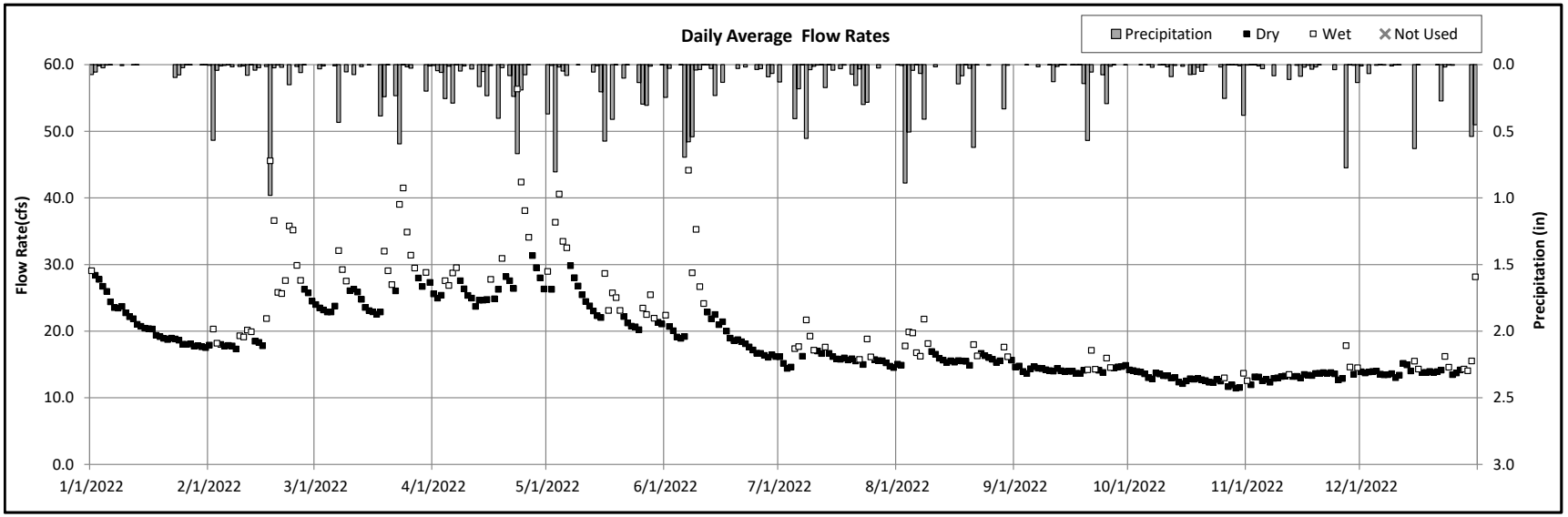
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	30.31	2/17/22 6:30	6.75	2/17/22 10:40
2	1.15	4/22/2022	4/25/2022	34.72	4/23/22 4:20	4.84	4/23/22 6:30
3	1.84	6/6/2022	6/9/2022	34.26	6/7/22 0:50	6.96	6/7/22 3:20
4	1.15	7/5/2022	7/8/2022	22.58	7/8/22 17:15	2.08	7/8/22 17:55
5	1.43	8/3/2022	8/5/2022	22.17	8/4/22 22:50	2.03	8/4/22 23:15
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

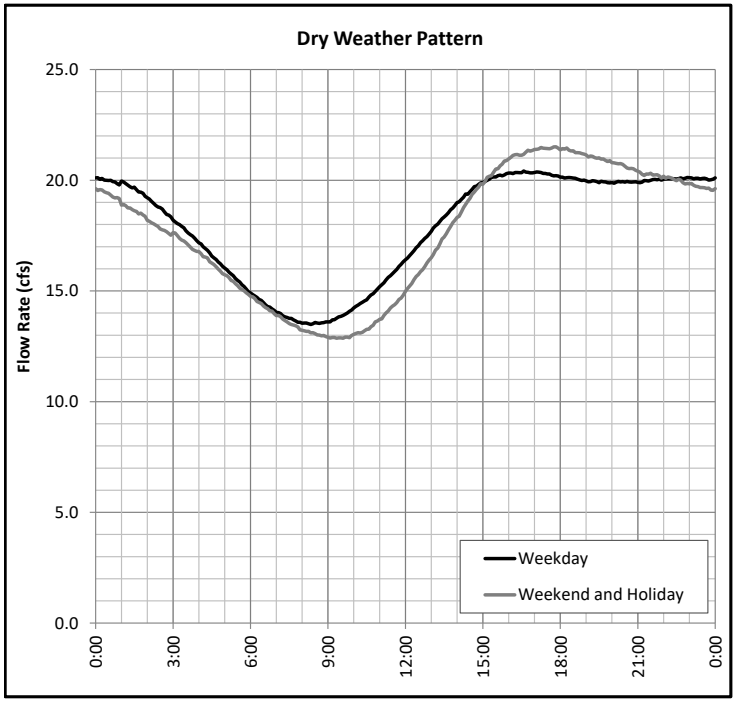
Figure 8-26
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

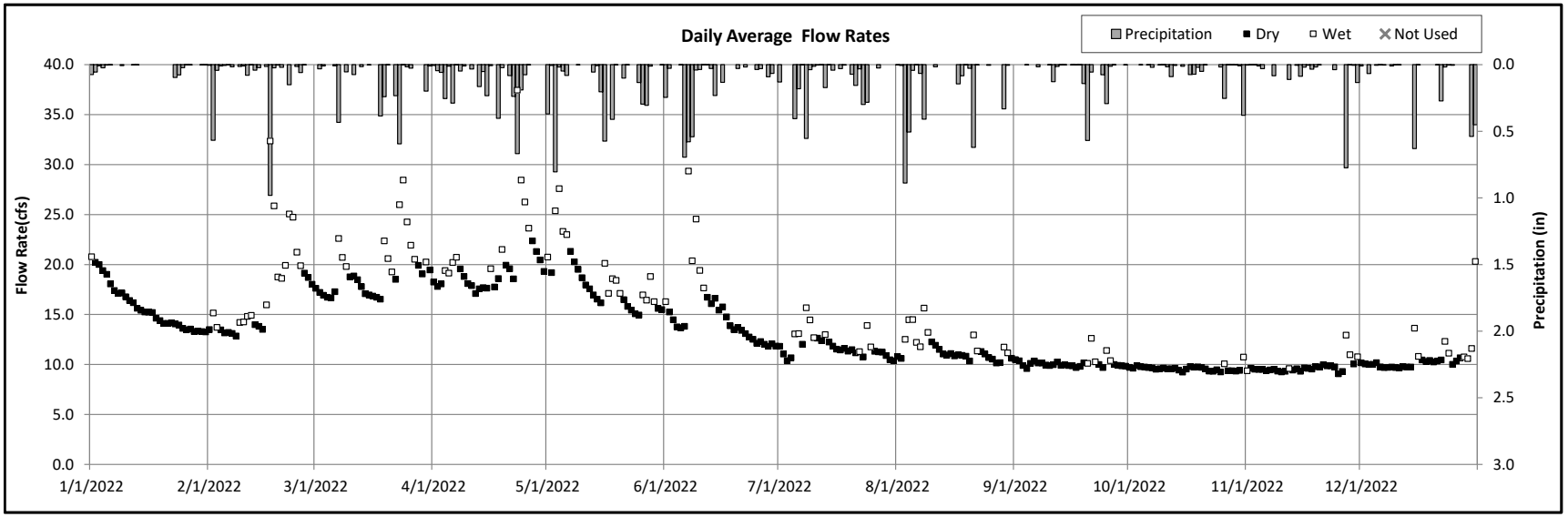
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	21.3	426.5	21.0	421.3	30	1
Feb-22	23.8	430.4	19.8	358.3	12	16
Mar-22	27.3	547.9	24.5	491.3	19	12
Apr-22	28.9	561.2	26.3	510.1	20	10
May-22	25.5	510.5	23.5	470.4	17	14
Jun-22	21.2	410.1	18.9	366.2	24	6
Jul-22	16.3	326.5	15.6	313.1	22	9
Aug-22	16.5	330.9	15.7	314.3	20	11
Sep-22	14.4	278.7	14.2	275.4	25	5
Oct-22	12.9	257.9	12.8	257.3	29	2
Nov-22	13.4	259.6	13.1	255.0	25	5
Dec-22	14.6	291.6	13.9	277.5	23	8

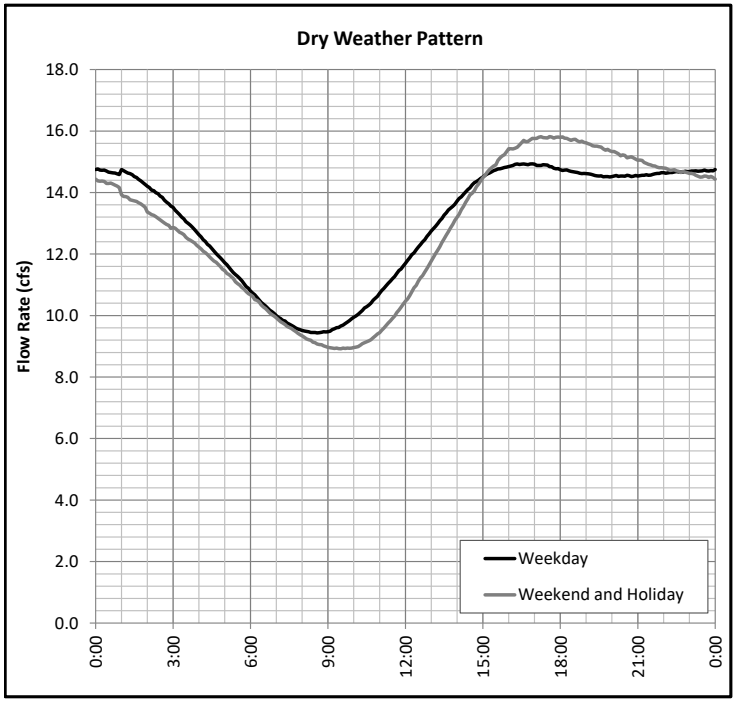
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	58.38	2/17/22 12:05	8.86	2/17/22 10:35
2	1.15	4/22/2022	4/25/2022	72.48	4/23/22 7:15	6.99	4/23/22 6:25
3	1.84	6/6/2022	6/9/2022	61.06	6/7/22 4:30	9.09	6/7/22 3:50
4	1.15	7/5/2022	7/8/2022	43.49	7/8/22 18:00	3.64	7/8/22 18:10
5	1.43	8/3/2022	8/5/2022	34.74	8/3/22 21:05	3.22	8/3/22 21:20
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-27
Rouge Valley Sewage Disposal System
Meter Report

Meter: P-35 **Location: Hines Drive West of Telegraph Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: MRIR 3-1 **Interceptor Branch: Middle Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	15.7	315.5	15.6	312.1	30	1
Feb-22	17.3	313.8	14.7	265.9	12	16
Mar-22	19.5	390.2	17.7	355.5	19	12
Apr-22	20.4	395.8	18.8	364.6	20	10
May-22	18.5	370.0	17.2	345.1	17	14
Jun-22	15.3	296.4	13.8	267.5	24	6
Jul-22	11.9	238.1	11.3	227.4	22	9
Aug-22	11.6	232.5	10.9	218.8	20	11
Sep-22	10.1	196.6	10.0	193.5	25	5
Oct-22	9.6	192.4	9.5	191.3	29	2
Nov-22	9.7	188.9	9.5	185.1	25	5
Dec-22	10.7	214.6	10.0	201.1	23	8

Statistics for Significant Wet Weather Events

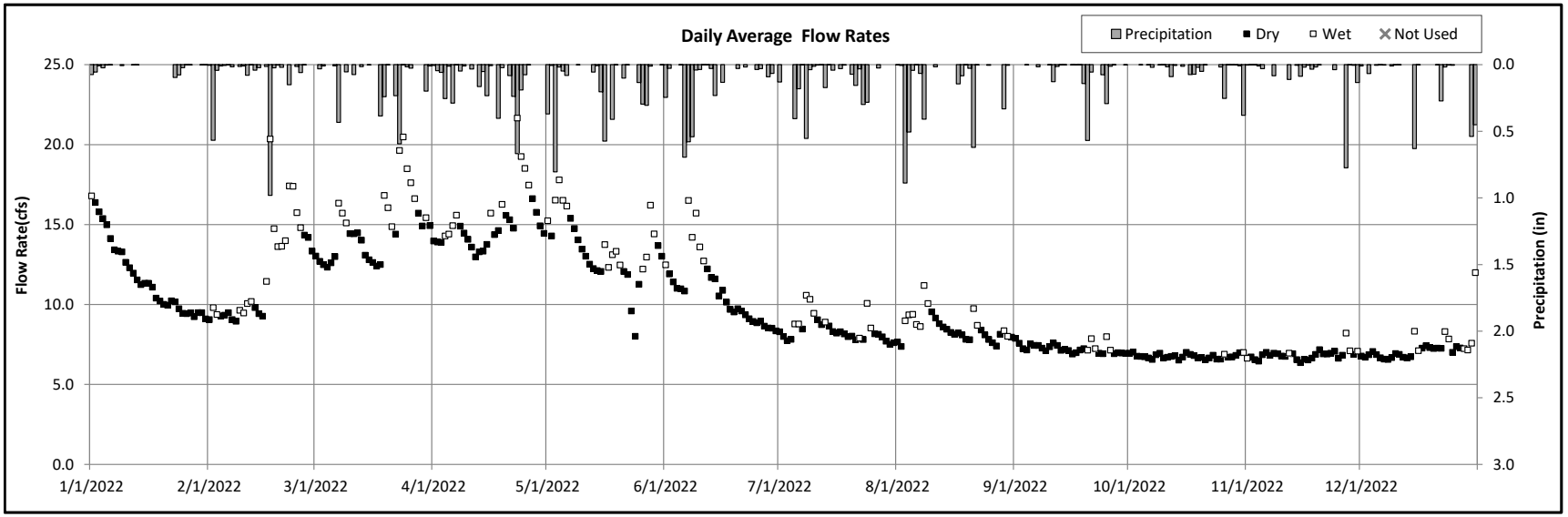
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	38.59	2/17/22 11:45	7.89	2/17/22 10:50
2	1.15	4/22/2022	4/25/2022	45.06	4/23/22 4:35	5.97	4/23/22 6:35
3	1.84	6/6/2022	6/9/2022	39.49	6/7/22 1:15	8.01	6/7/22 3:55
4	1.15	7/5/2022	7/8/2022	31.40	7/8/22 17:40	3.31	7/8/22 18:05
5	1.43	8/3/2022	8/5/2022	24.95	8/3/22 21:25	2.92	8/3/22 21:15
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

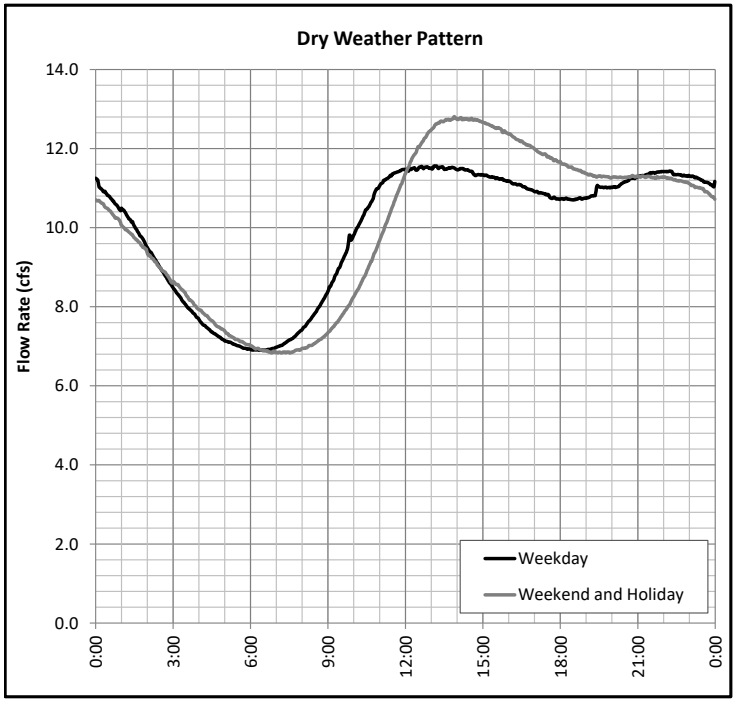
Figure 8-28
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

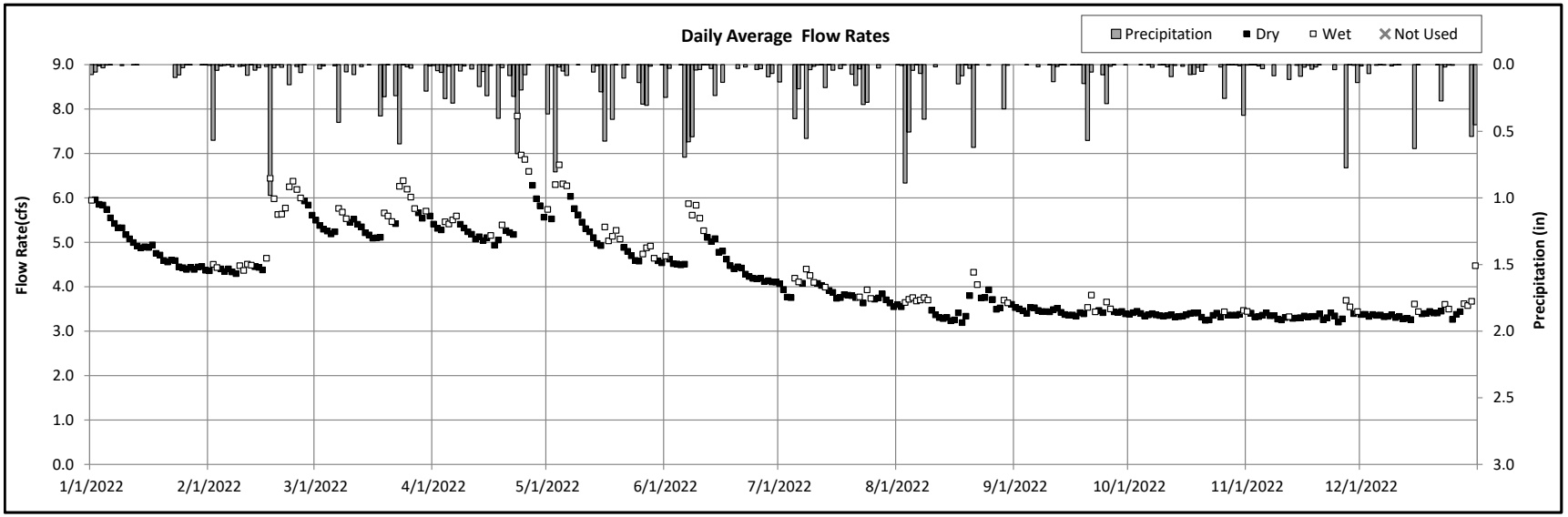
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	11.7	234.7	11.5	231.3	30	1
Feb-22	12.0	217.8	10.5	189.2	12	16
Mar-22	14.8	297.2	13.5	270.8	19	12
Apr-22	15.2	295.0	14.4	279.6	20	10
May-22	13.4	269.0	12.5	251.4	17	14
Jun-22	10.9	210.7	10.0	194.6	24	6
Jul-22	8.4	169.1	8.1	162.4	22	9
Aug-22	8.5	170.8	8.2	163.5	20	11
Sep-22	7.3	140.7	7.2	139.8	25	5
Oct-22	6.8	135.4	6.7	135.2	29	2
Nov-22	6.8	132.8	6.8	131.5	25	5
Dec-22	7.3	145.7	7.0	139.3	23	8

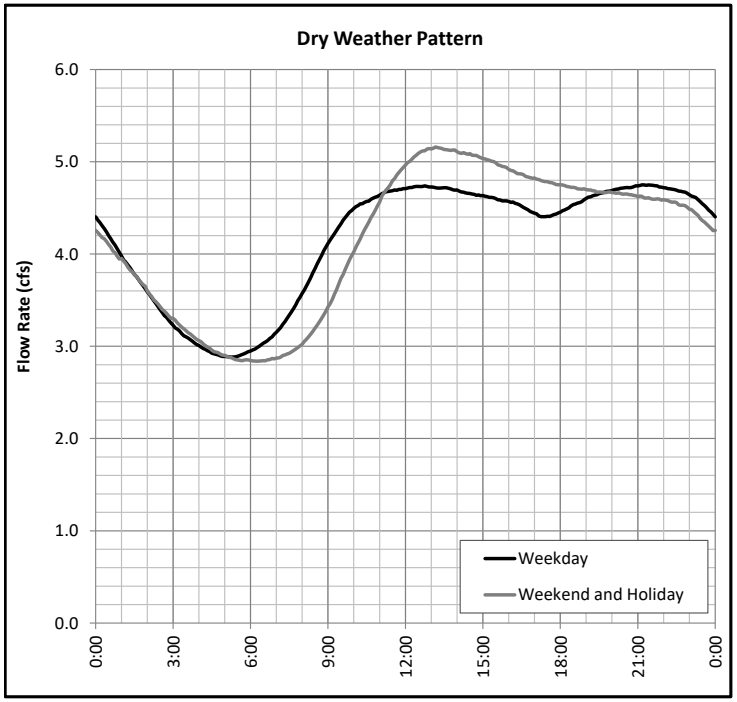
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	27.65	2/17/22 8:10	5.17	2/17/22 9:25
2	1.15	4/22/2022	4/25/2022	23.68	4/23/22 11:50	4.37	4/23/22 5:40
3	1.84	6/6/2022	6/9/2022	18.58	6/8/22 21:55	2.50	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	16.65	7/8/22 17:30	4.04	7/8/22 19:30
5	1.43	8/3/2022	8/5/2022	16.88	8/3/22 20:35	3.34	8/3/22 20:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-29
Rouge Valley Sewage Disposal System
Meter Report

Meter: WE-14 **Location: Hines Drive West of Merriman** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Middle Rouge**





Monthly Statistics

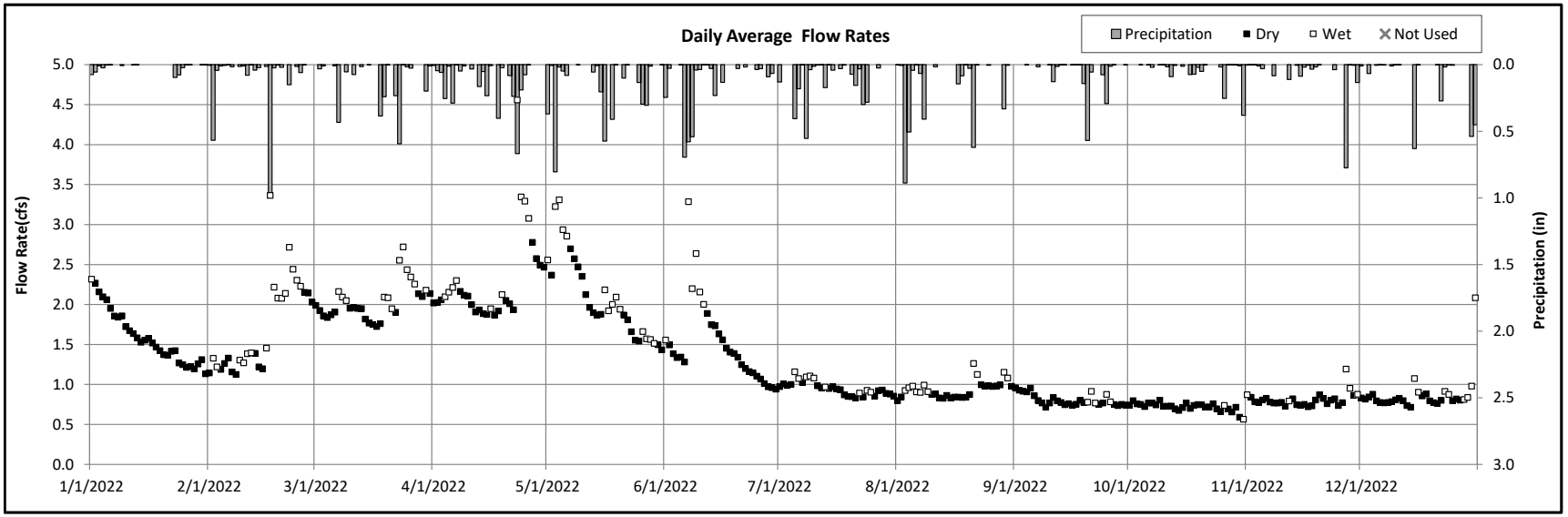
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	5.0	99.4	4.9	98.8	30	1
Feb-22	5.1	92.0	4.7	85.6	12	16
Mar-22	5.5	110.8	5.3	107.0	19	12
Apr-22	5.6	108.3	5.3	103.5	20	10
May-22	5.3	105.3	5.1	102.0	17	14
Jun-22	4.7	90.5	4.5	86.7	24	6
Jul-22	3.9	77.8	3.8	76.5	22	9
Aug-22	3.6	72.0	3.5	70.0	20	11
Sep-22	3.5	67.1	3.4	66.6	25	5
Oct-22	3.4	67.4	3.4	67.3	29	2
Nov-22	3.4	65.0	3.3	64.5	25	5
Dec-22	3.4	68.9	3.4	67.3	23	8

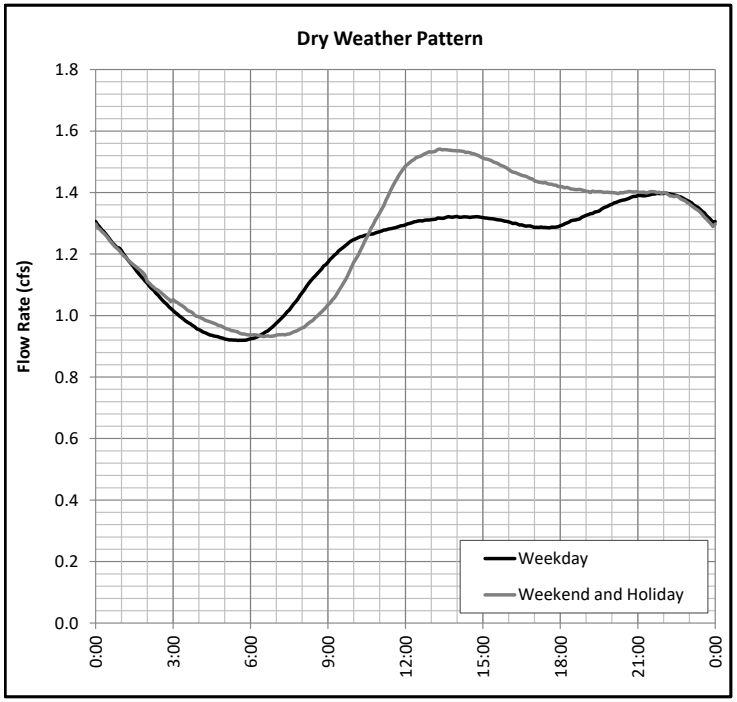
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	7.78	2/17/22 8:50	1.76	2/17/22 9:10
2	1.15	4/22/2022	4/25/2022	9.54	4/23/22 3:30	2.07	4/23/22 4:05
3	1.84	6/6/2022	6/9/2022	7.24	6/6/22 22:35	1.26	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	7.05	7/8/22 16:50	1.66	7/8/22 17:20
5	1.43	8/3/2022	8/5/2022	4.62	8/3/22 21:20	1.31	8/3/22 21:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-30
Rouge Valley Sewage Disposal System
Meter Report

Meter: WE-28 **Location: Merriman Road and Lower Rouge River** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Lower Rouge**





Monthly Statistics

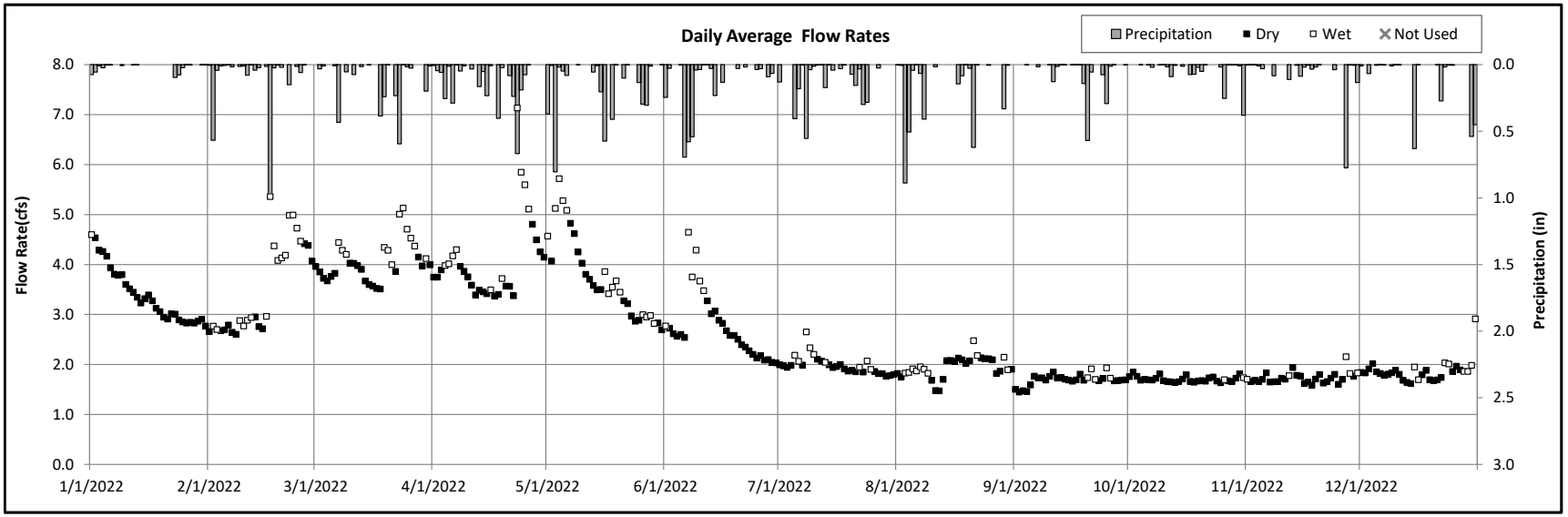
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	1.6	32.0	1.6	31.5	30	1
Feb-22	1.7	31.2	1.4	26.1	12	16
Mar-22	2.0	40.8	1.9	38.2	19	12
Apr-22	2.3	44.7	2.1	40.9	20	10
May-22	2.1	41.9	2.0	39.5	17	14
Jun-22	1.5	29.5	1.3	25.7	24	6
Jul-22	1.0	19.0	0.9	18.5	22	9
Aug-22	0.9	18.8	0.9	17.9	20	11
Sep-22	0.8	15.6	0.8	15.5	25	5
Oct-22	0.7	14.4	0.7	14.5	29	2
Nov-22	0.8	15.7	0.8	15.2	25	5
Dec-22	0.9	17.4	0.8	16.0	23	8

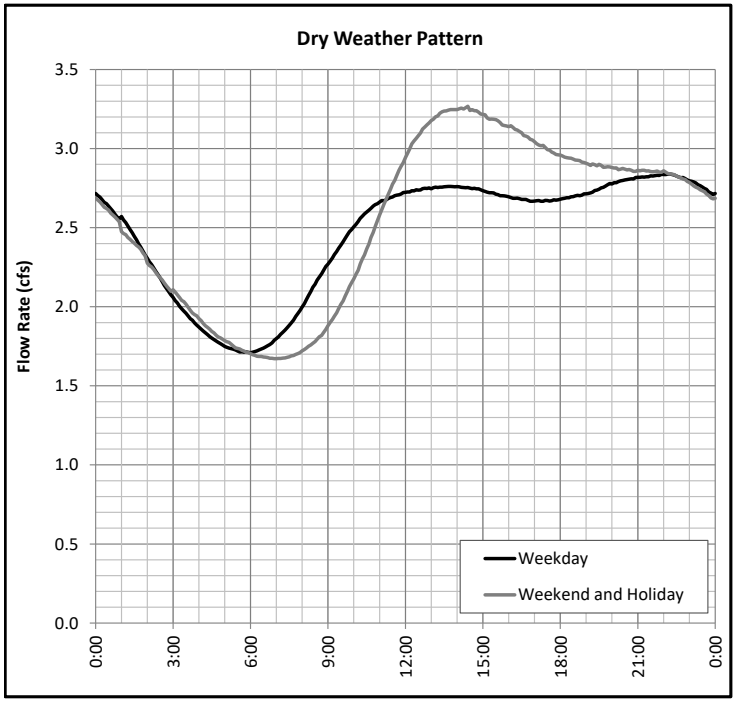
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	5.00	2/17/22 7:45	1.01	2/17/22 8:45
2	1.15	4/22/2022	4/25/2022	7.00	4/23/22 4:10	1.27	4/23/22 4:45
3	1.84	6/6/2022	6/9/2022	6.29	6/7/22 0:40	1.19	6/7/22 1:15
4	1.15	7/5/2022	7/8/2022	1.59	7/8/22 16:50	0.46	7/8/22 17:20
5	1.43	8/3/2022	8/5/2022	2.04	8/4/22 22:20	0.56	8/4/22 22:40
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-31
Rouge Valley Sewage Disposal System
Meter Report

Meter: WE-25 **Location: Thinbark Road at Lower Rouge River** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Lower Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	3.4	67.9	3.3	67.1	30	1
Feb-22	3.5	63.7	3.1	56.3	12	16
Mar-22	4.1	81.4	3.8	76.5	19	12
Apr-22	4.1	79.2	3.8	72.9	20	10
May-22	3.7	75.0	3.6	71.4	17	14
Jun-22	2.8	53.5	2.5	48.6	24	6
Jul-22	2.0	39.7	1.9	38.3	22	9
Aug-22	1.9	38.9	1.9	38.5	20	11
Sep-22	1.7	32.8	1.7	32.4	25	5
Oct-22	1.7	34.1	1.7	34.1	29	2
Nov-22	1.7	33.5	1.7	33.0	25	5
Dec-22	1.9	37.3	1.8	36.1	23	8

Statistics for Significant Wet Weather Events

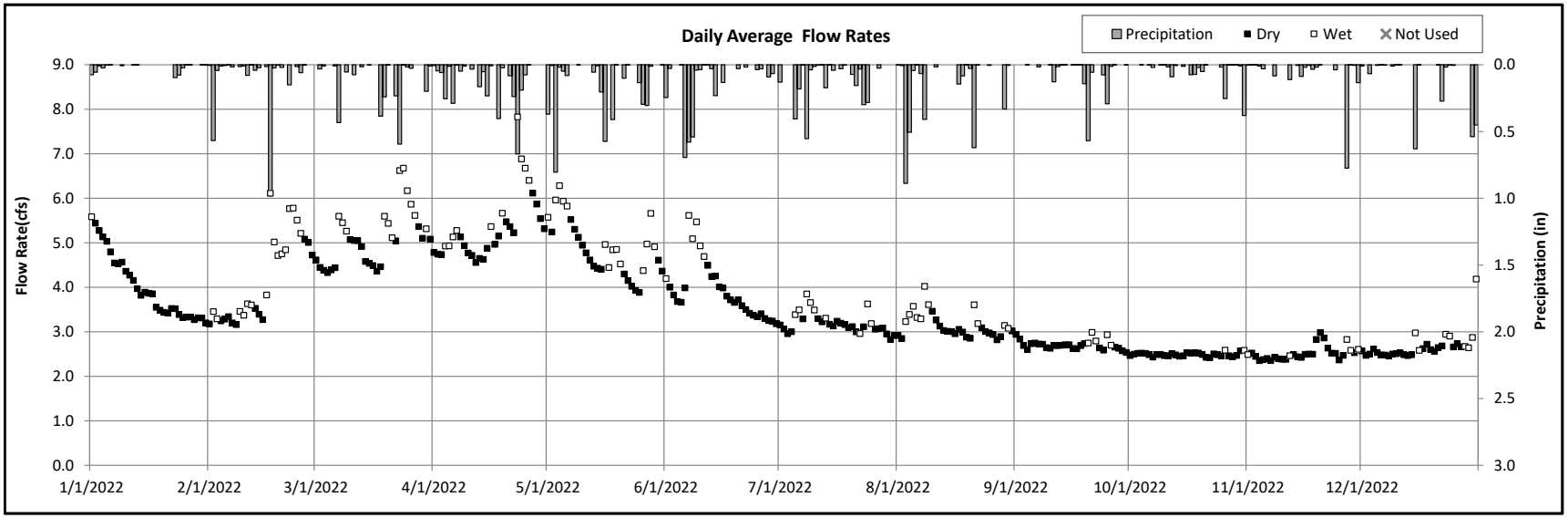
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	7.55	2/17/22 8:05	1.29	2/17/22 8:55
2	1.15	4/22/2022	4/25/2022	9.34	4/23/22 5:20	1.71	4/23/22 7:00
3	1.84	6/6/2022	6/9/2022	7.17	6/7/22 1:45	1.27	6/7/22 2:25
4	1.15	7/5/2022	7/8/2022	7.18	7/8/22 18:00	1.33	7/8/22 18:20
5	1.43	8/3/2022	8/5/2022	2.76	8/3/22 21:15	0.77	8/3/22 21:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

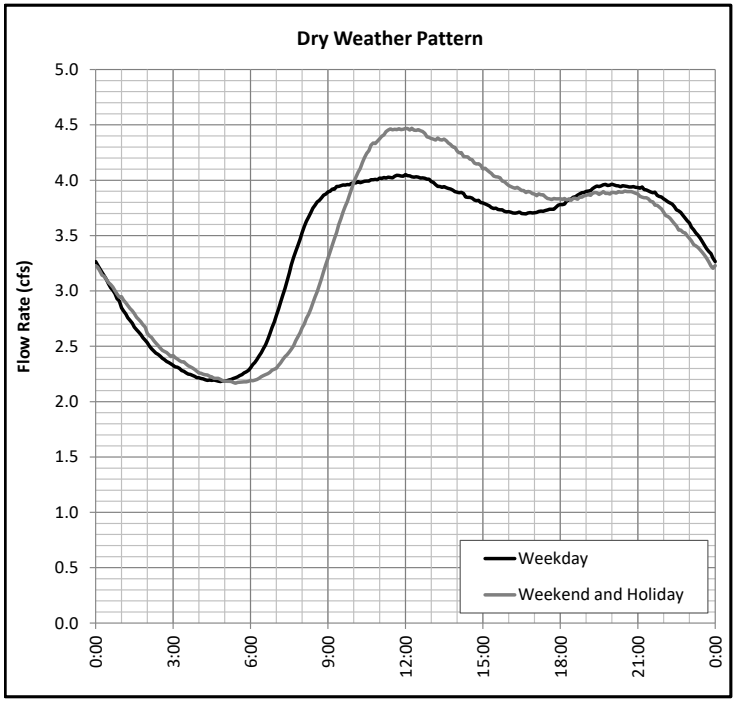
Figure 8-32
Rouge Valley Sewage Disposal System
Meter Report

Meter: LV-4
Interceptor Manhole ID: --

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

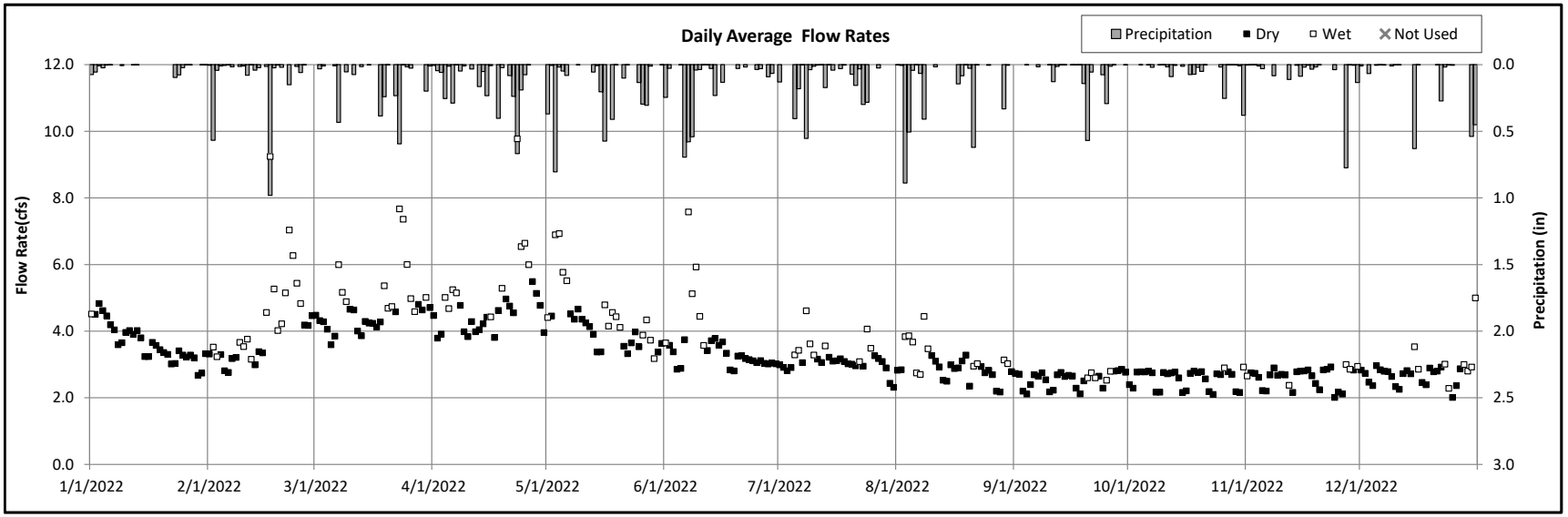
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	4.0	80.4	4.0	79.4	30	1
Feb-22	4.2	75.4	3.7	66.9	12	16
Mar-22	5.1	102.4	4.7	94.6	19	12
Apr-22	5.4	103.8	5.1	98.4	20	10
May-22	4.9	97.7	4.6	92.0	17	14
Jun-22	4.0	76.6	3.7	71.6	24	6
Jul-22	3.2	64.0	3.1	62.0	22	9
Aug-22	3.1	63.0	3.0	60.2	20	11
Sep-22	2.7	52.4	2.7	52.0	25	5
Oct-22	2.5	49.9	2.5	49.7	29	2
Nov-22	2.5	48.8	2.5	48.5	25	5
Dec-22	2.7	53.4	2.6	51.3	23	8

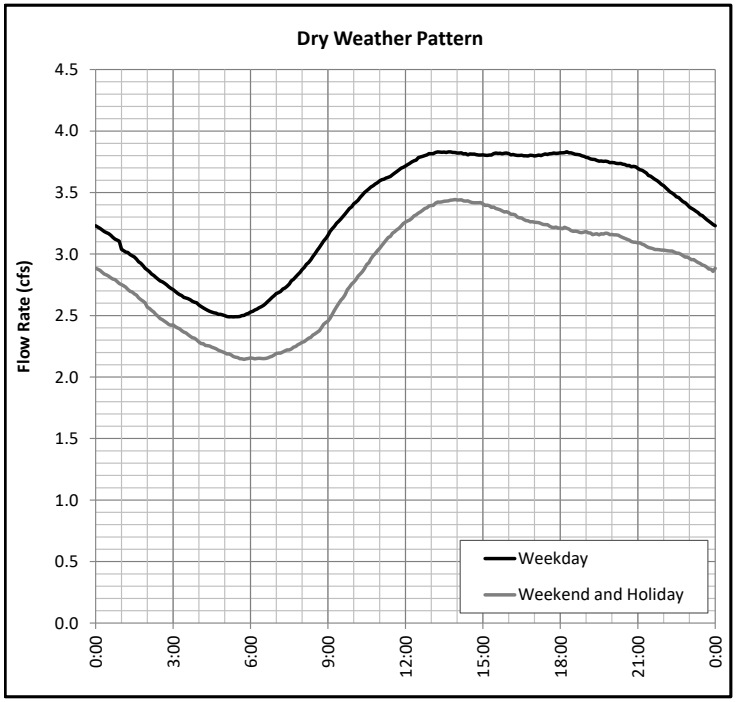
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	8.19	2/17/22 6:50	1.91	2/17/22 7:20
2	1.15	4/22/2022	4/25/2022	9.01	4/23/22 2:35	1.99	4/23/22 3:10
3	1.84	6/6/2022	6/9/2022	7.11	6/8/22 19:35	1.28	6/6/22 7:00
4	1.15	7/5/2022	7/8/2022	6.16	7/6/22 10:05	-	-
5	1.43	8/3/2022	8/5/2022	6.06	8/3/22 18:35	1.69	8/3/22 19:05
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-33
Rouge Valley Sewage Disposal System
Meter Report

Meter: LV-11 **Location: Lyndon Road and Inkster Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: **Interceptor Branch: Middle Rouge**





Monthly Statistics

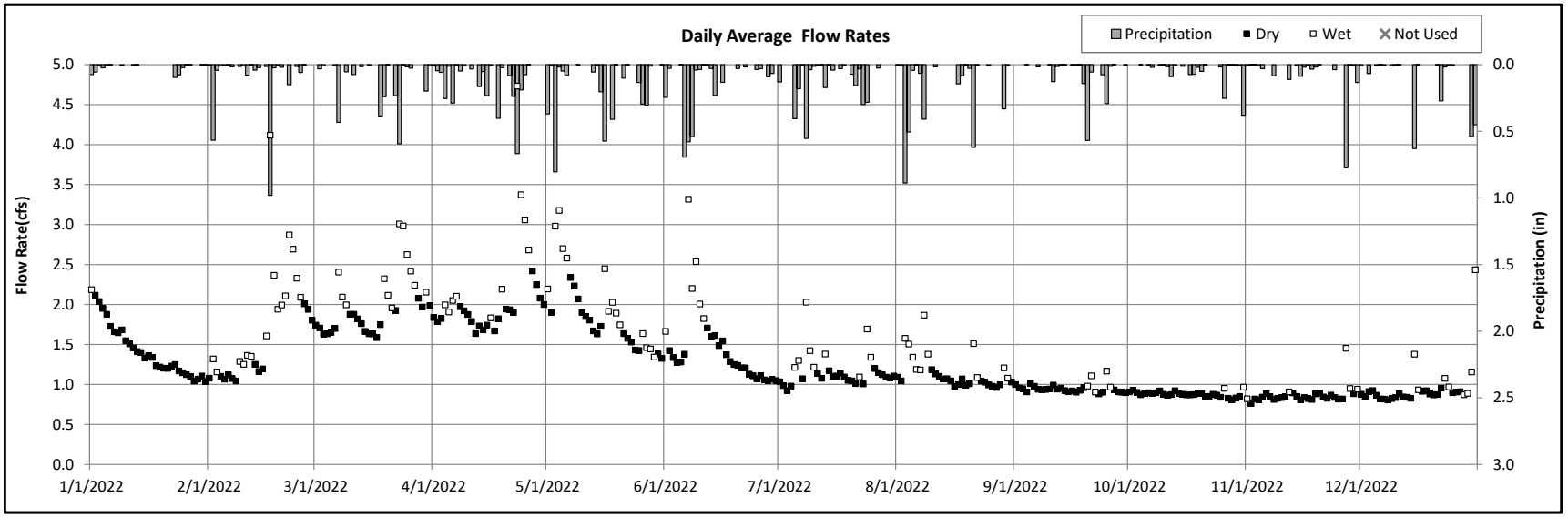
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	3.6	73.0	3.6	72.4	30	1
Feb-22	4.2	76.2	3.4	61.9	12	16
Mar-22	4.8	95.6	4.3	86.0	19	12
Apr-22	4.9	94.6	4.4	85.0	20	10
May-22	4.3	85.9	3.9	78.2	17	14
Jun-22	3.6	69.8	3.2	62.8	24	6
Jul-22	3.2	63.4	3.0	59.8	22	9
Aug-22	3.0	59.8	2.8	55.9	20	11
Sep-22	2.6	49.7	2.5	49.3	25	5
Oct-22	2.6	51.6	2.6	51.1	29	2
Nov-22	2.6	50.6	2.6	50.1	25	5
Dec-22	2.8	55.6	2.6	52.9	23	8

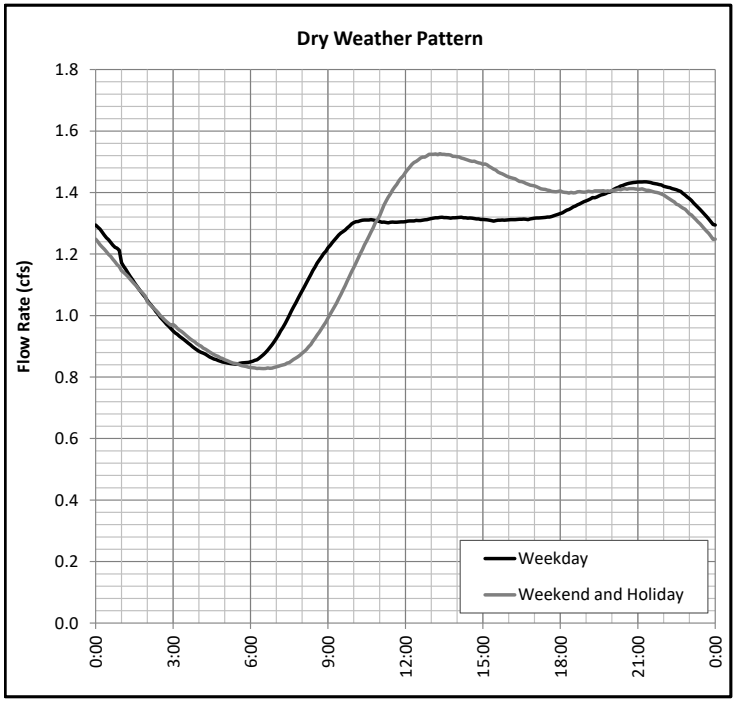
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	14.10	2/17/22 8:30	1.33	2/17/22 9:00
2	1.15	4/22/2022	4/25/2022	13.62	4/23/22 4:55	1.30	4/23/22 5:10
3	1.84	6/6/2022	6/9/2022	12.49	6/6/22 23:55	1.25	6/7/22 0:05
4	1.15	7/5/2022	7/8/2022	17.46	7/8/22 15:20	-	-
5	1.43	8/3/2022	8/5/2022	9.04	8/3/22 19:10	1.09	8/3/22 19:30
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-34
Rouge Valley Sewage Disposal System
Meter Report

Meter: LV-14 **Location: West of Cavell South of Ann Arbor Trail** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Middle Rouge**





Monthly Statistics

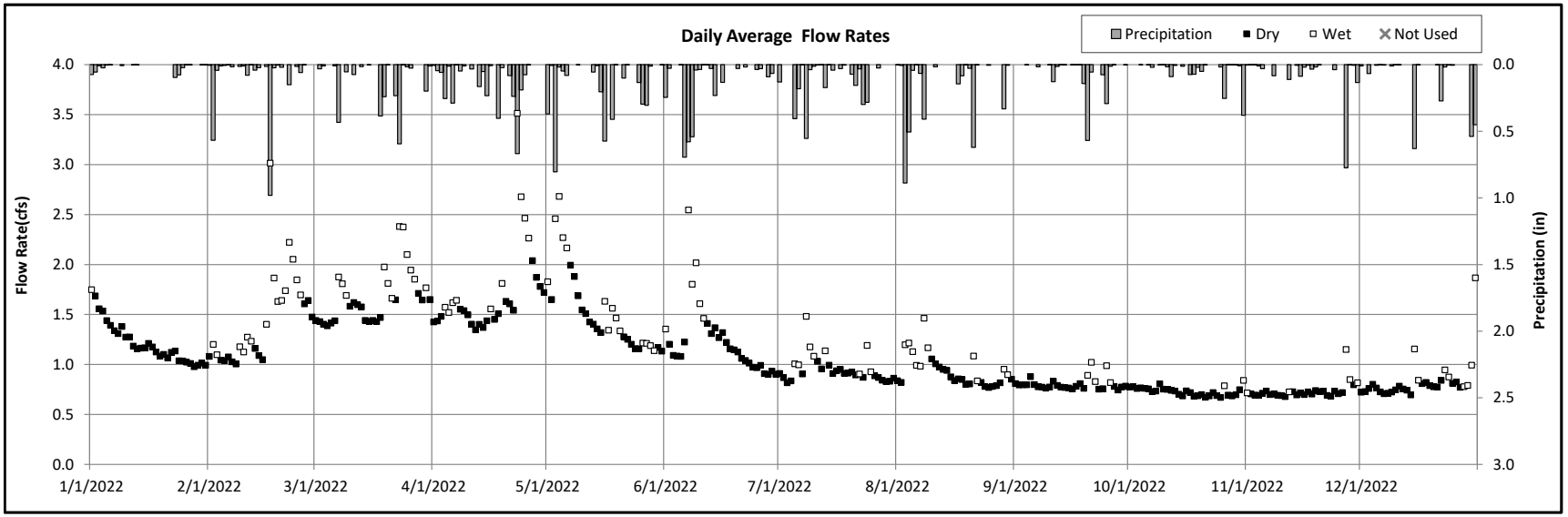
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	1.4	28.6	1.4	28.1	30	1
Feb-22	1.7	30.8	1.3	23.9	12	16
Mar-22	2.0	40.0	1.8	35.4	19	12
Apr-22	2.1	41.2	1.9	36.6	20	10
May-22	1.9	38.1	1.7	34.7	17	14
Jun-22	1.5	28.7	1.3	24.9	24	6
Jul-22	1.2	23.5	1.1	21.5	22	9
Aug-22	1.2	23.1	1.0	20.8	20	11
Sep-22	0.9	18.4	0.9	18.1	25	5
Oct-22	0.9	17.6	0.9	17.5	29	2
Nov-22	0.9	16.8	0.8	16.2	25	5
Dec-22	1.0	19.2	0.9	17.4	23	8

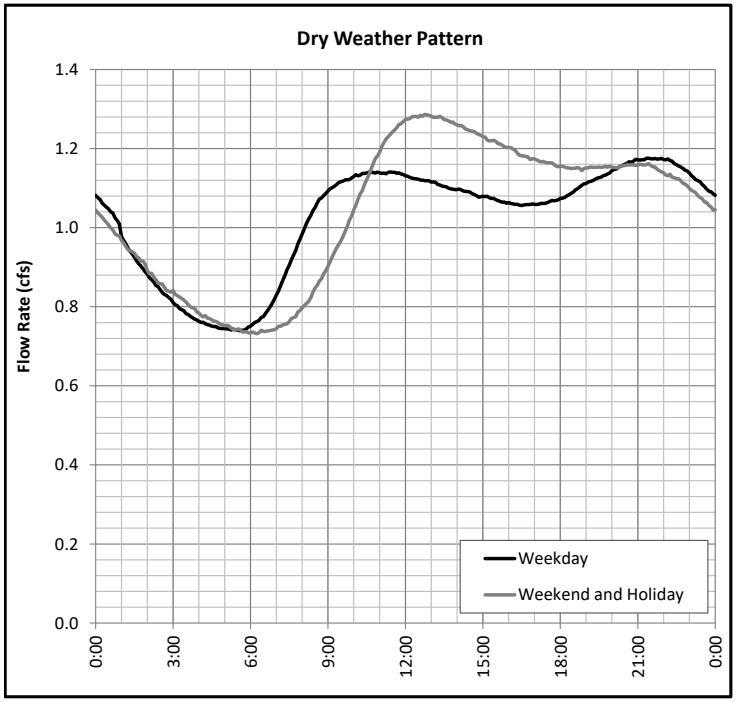
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	6.86	2/17/22 7:40	1.06	2/17/22 7:55
2	1.15	4/22/2022	4/25/2022	8.54	4/23/22 3:40	1.21	4/23/22 4:05
3	1.84	6/6/2022	6/9/2022	6.97	6/6/22 23:50	0.46	6/6/22 7:25
4	1.15	7/5/2022	7/8/2022	9.96	7/8/22 15:30	1.37	7/8/22 16:00
5	1.43	8/3/2022	8/5/2022	6.19	8/3/22 18:55	1.04	8/3/22 19:25
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-35
Rouge Valley Sewage Disposal System
Meter Report

Meter: LV-15 **Location: Merriman Road at Geraldine Street** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Middle Rouge**





Monthly Statistics

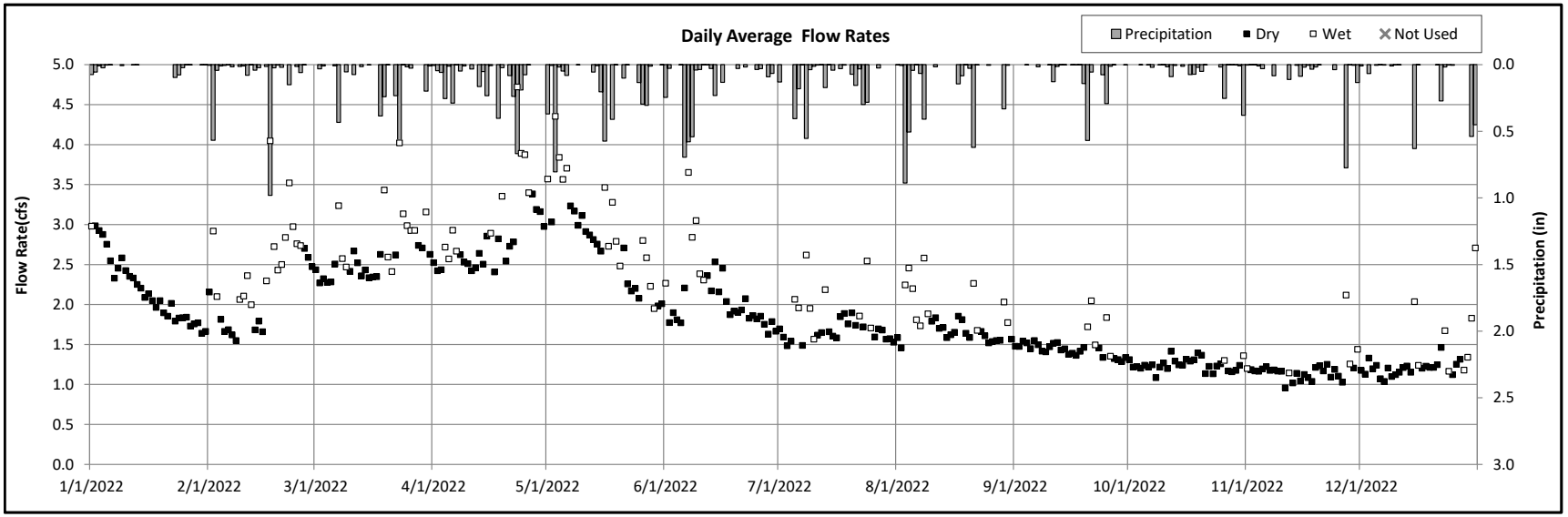
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	1.2	24.3	1.2	24.0	30	1
Feb-22	1.4	26.2	1.2	21.5	12	16
Mar-22	1.7	33.6	1.5	30.3	19	12
Apr-22	1.7	33.4	1.6	30.1	20	10
May-22	1.5	30.8	1.4	28.4	17	14
Jun-22	1.2	24.2	1.1	21.6	24	6
Jul-22	1.0	19.1	0.9	18.0	22	9
Aug-22	0.9	18.8	0.9	17.2	20	11
Sep-22	0.8	15.6	0.8	15.2	25	5
Oct-22	0.7	14.6	0.7	14.5	29	2
Nov-22	0.7	14.2	0.7	13.8	25	5
Dec-22	0.8	16.7	0.8	15.3	23	8

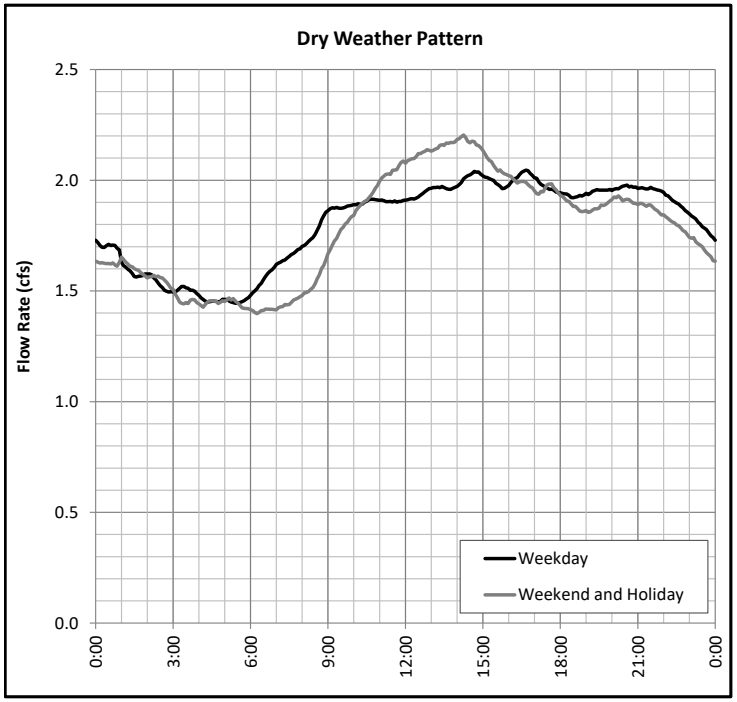
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	4.67	2/17/22 6:25	2.34	2/17/22 9:05
2	1.15	4/22/2022	4/25/2022	5.54	4/23/22 3:00	3.01	4/23/22 5:20
3	1.84	6/6/2022	6/9/2022	5.26	6/6/22 23:30	2.18	6/7/22 1:05
4	1.15	7/5/2022	7/8/2022	5.05	7/8/22 15:10	2.00	7/8/22 16:35
5	1.43	8/3/2022	8/5/2022	3.77	8/3/22 18:20	1.71	8/3/22 18:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-36
Rouge Valley Sewage Disposal System
Meter Report

Meter: LV-16 **Location: 8914 Farmington Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Middle Rouge**





Monthly Statistics

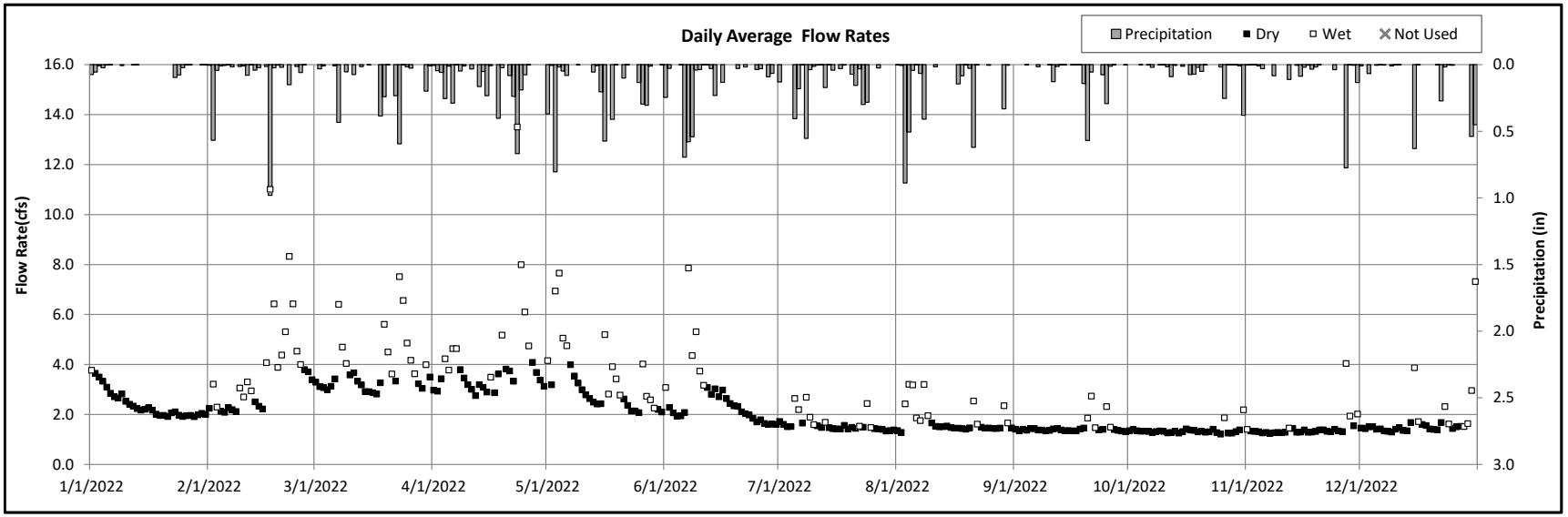
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.2	43.9	2.2	43.3	30	1
Feb-22	2.3	42.5	1.9	35.2	12	16
Mar-22	2.7	53.4	2.5	49.4	19	12
Apr-22	2.9	56.2	2.7	52.3	20	10
May-22	2.8	57.0	2.6	53.0	17	14
Jun-22	2.1	41.1	2.0	38.0	24	6
Jul-22	1.8	35.4	1.7	33.1	22	9
Aug-22	1.8	35.8	1.6	32.9	20	11
Sep-22	1.5	28.6	1.4	27.7	25	5
Oct-22	1.2	25.0	1.2	24.9	29	2
Nov-22	1.2	23.0	1.1	22.1	25	5
Dec-22	1.3	26.3	1.2	24.0	23	8

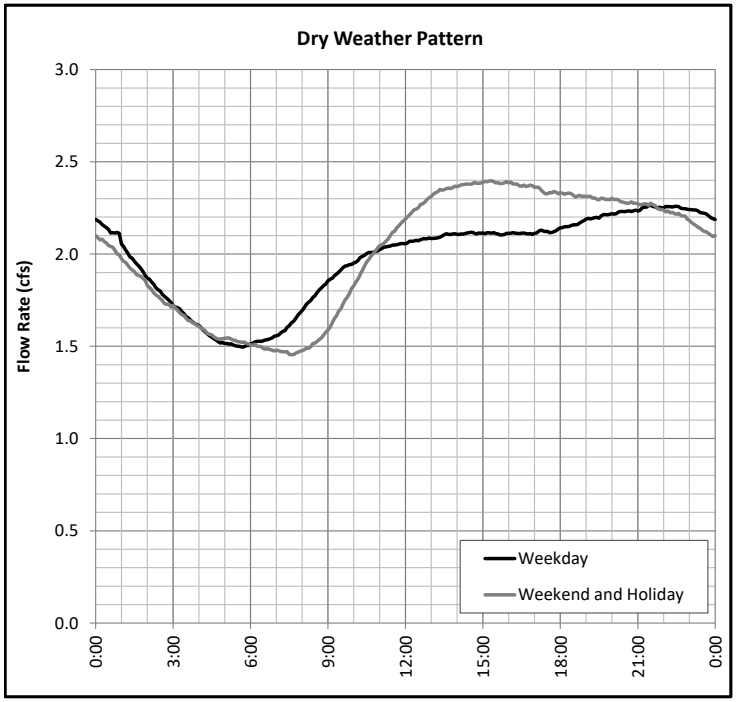
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	5.87	2/17/22 8:35	1.07	2/17/22 9:10
2	1.15	4/22/2022	4/25/2022	7.59	4/23/22 2:45	1.35	4/23/22 3:20
3	1.84	6/6/2022	6/9/2022	7.84	6/6/22 22:50	1.30	6/6/22 23:25
4	1.15	7/5/2022	7/8/2022	9.04	7/8/22 14:55	1.37	7/8/22 15:20
5	1.43	8/3/2022	8/5/2022	6.25	8/3/22 18:30	1.19	8/3/22 18:45
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-37
Rouge Valley Sewage Disposal System
Meter Report

Meter: M-1 **Location: Middlebelt Road North of Rush** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Middle Rouge**





Monthly Statistics

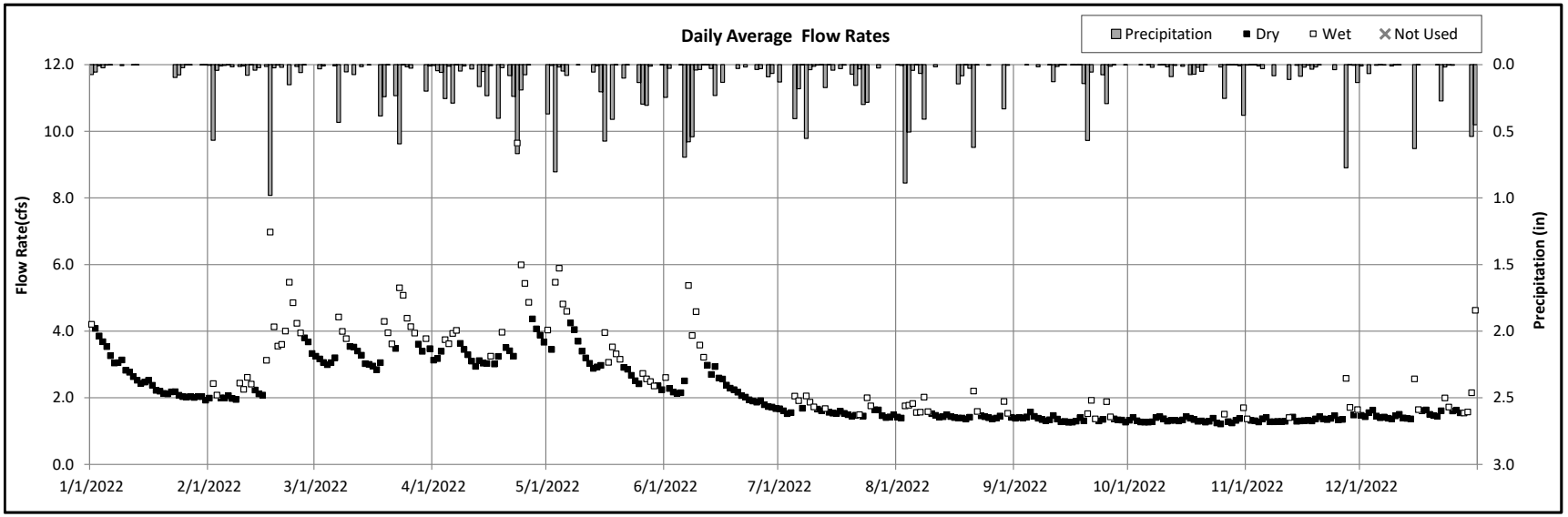
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.4	48.0	2.4	47.1	30	1
Feb-22	3.8	69.0	2.6	46.6	12	16
Mar-22	3.9	77.6	3.2	63.9	19	12
Apr-22	4.2	80.5	3.3	64.3	20	10
May-22	3.3	66.9	2.7	53.4	17	14
Jun-22	2.7	51.6	2.2	42.4	24	6
Jul-22	1.6	32.6	1.5	29.5	22	9
Aug-22	1.8	35.5	1.5	29.2	20	11
Sep-22	1.5	28.6	1.4	26.7	25	5
Oct-22	1.4	27.3	1.3	26.4	29	2
Nov-22	1.5	28.4	1.3	25.6	25	5
Dec-22	1.8	36.4	1.5	29.1	23	8

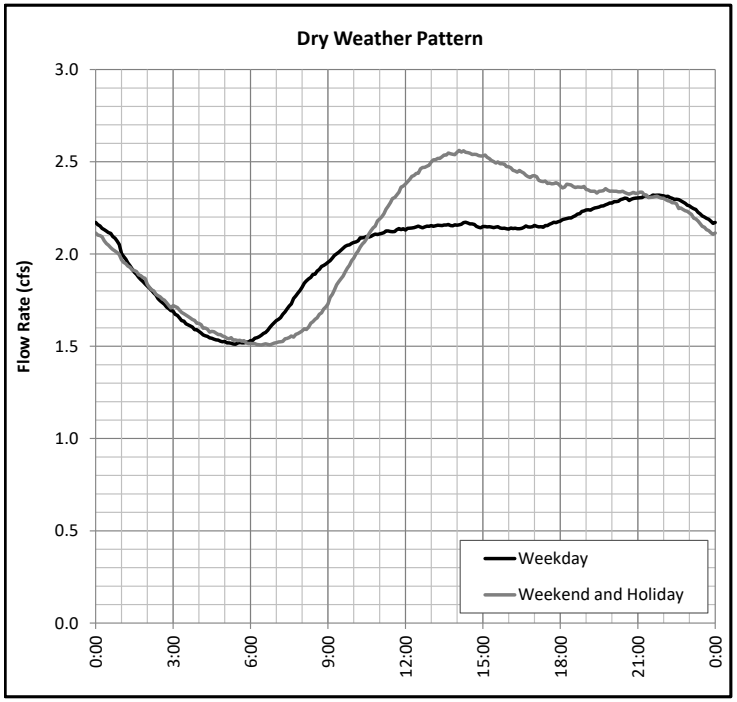
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	18.25	2/17/22 8:35	8.21	2/17/22 21:10
2	1.15	4/22/2022	4/25/2022	27.94	4/23/22 4:25	9.03	4/23/22 4:00
3	1.84	6/6/2022	6/9/2022	20.15	6/7/22 0:25	1.07	6/6/22 8:50
4	1.15	7/5/2022	7/8/2022	8.74	7/8/22 16:10	1.63	7/8/22 16:40
5	1.43	8/3/2022	8/5/2022	13.18	8/4/22 21:55	4.56	8/4/22 23:20
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-38
Rouge Valley Sewage Disposal System
Meter Report

Meter: M-2 **Location: Merriman Road South of Hines Drive** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: -- **Interceptor Branch: Middle Rouge**





Monthly Statistics

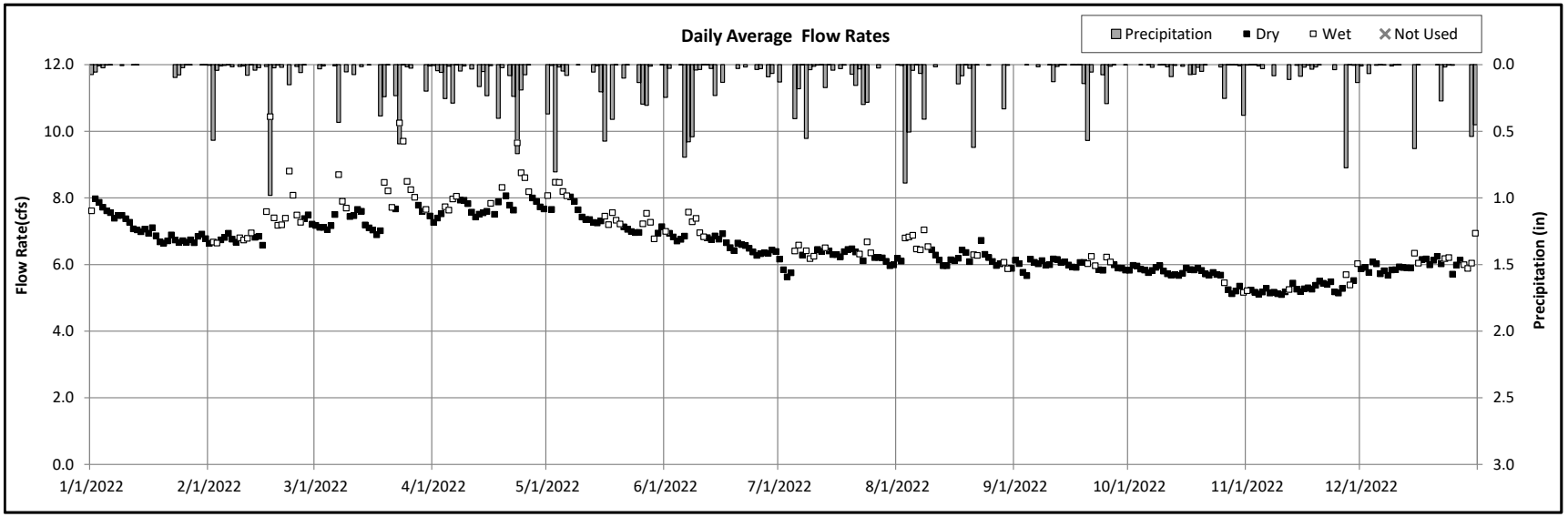
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.6	52.7	2.6	51.7	30	1
Feb-22	3.1	56.4	2.4	44.0	12	16
Mar-22	3.6	72.3	3.2	64.6	19	12
Apr-22	3.9	75.0	3.4	65.6	20	10
May-22	3.3	67.0	3.0	61.0	17	14
Jun-22	2.5	49.0	2.2	42.5	24	6
Jul-22	1.6	32.6	1.5	30.9	22	9
Aug-22	1.5	30.8	1.4	28.5	20	11
Sep-22	1.4	27.1	1.4	26.3	25	5
Oct-22	1.3	26.8	1.3	26.4	29	2
Nov-22	1.4	27.3	1.3	26.0	25	5
Dec-22	1.7	33.6	1.5	29.8	23	8

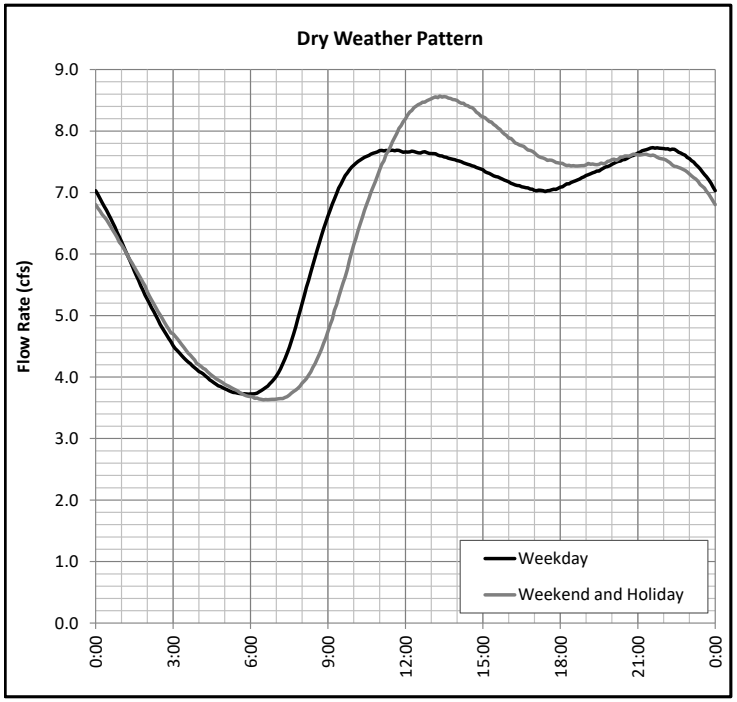
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	9.76	2/17/22 9:00	1.82	2/17/22 8:25
2	1.15	4/22/2022	4/25/2022	14.67	4/23/22 4:05	2.37	4/23/22 4:35
3	1.84	6/6/2022	6/9/2022	10.28	6/6/22 23:30	1.37	6/8/22 20:30
4	1.15	7/5/2022	7/8/2022	4.75	7/8/22 15:35	1.18	7/8/22 16:00
5	1.43	8/3/2022	8/5/2022	3.82	8/3/22 18:45	1.05	8/3/22 18:55
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-39
Rouge Valley Sewage Disposal System
Meter Report

Meter: BG-1 **Location: 8 Mile Road** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: NT 25 **Interceptor Branch: Middle Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	7.1	142.1	7.1	141.8	30	1
Feb-22	7.2	130.7	6.9	124.9	12	16
Mar-22	7.7	155.1	7.3	146.5	19	12
Apr-22	7.9	152.7	7.7	148.9	20	10
May-22	7.5	149.3	7.3	146.5	17	14
Jun-22	6.7	130.2	6.6	128.0	24	6
Jul-22	6.3	125.3	6.2	124.0	22	9
Aug-22	6.3	126.0	6.2	123.8	20	11
Sep-22	6.0	116.4	6.0	116.0	25	5
Oct-22	5.7	114.1	5.7	114.6	29	2
Nov-22	5.3	102.9	5.3	102.1	25	5
Dec-22	6.0	120.4	5.9	119.0	23	8

Statistics for Significant Wet Weather Events

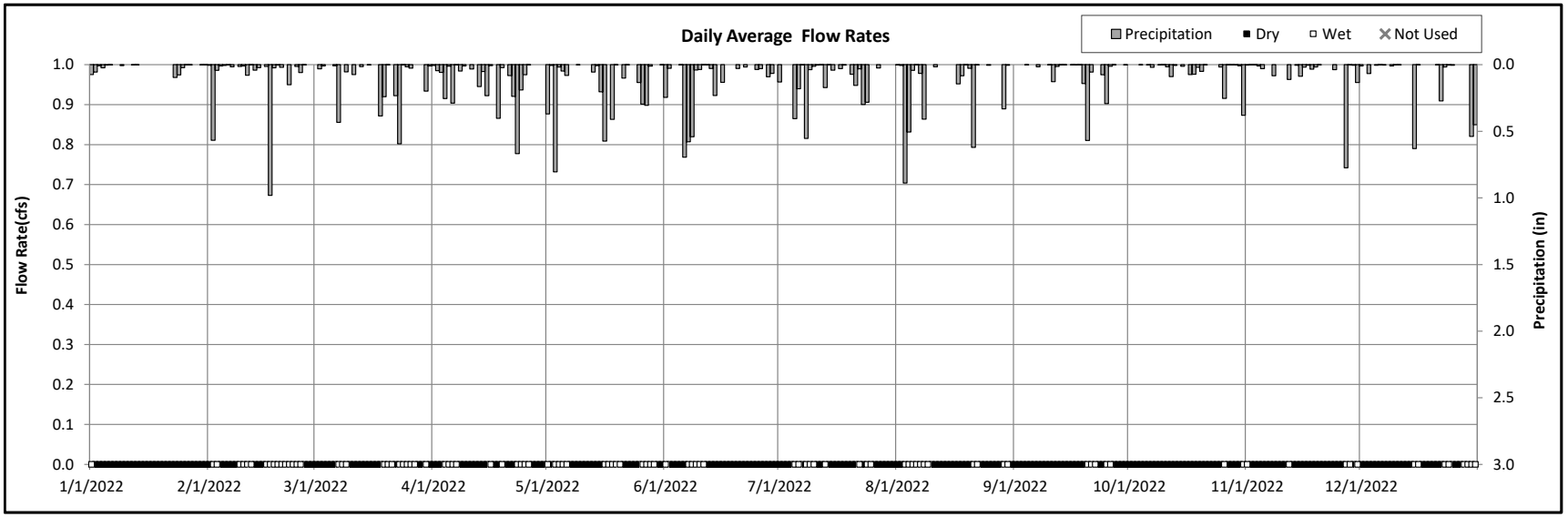
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	15.09	2/17/22 7:00	-	-
2	1.15	4/22/2022	4/25/2022	11.41	4/23/22 10:20	-	-
3	1.84	6/6/2022	6/9/2022	10.30	6/8/22 20:25	-	-
4	1.15	7/5/2022	7/8/2022	9.23	7/6/22 10:40	-	-
5	1.43	8/3/2022	8/5/2022	11.70	8/3/22 19:05	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-40
Rouge Valley Sewage Disposal System
Meter Report

Meter: FE-19
Interceptor Manhole ID: --

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

Period: 1/1/2022 through 12/31/2022



Dry weather pattern not applicable to this meter

Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	0.0	0.0	0.0	0.0	30	1
Feb-22	0.0	0.0	0.0	0.0	12	16
Mar-22	0.0	0.0	0.0	0.0	19	12
Apr-22	0.0	0.0	0.0	0.0	20	10
May-22	0.0	0.0	0.0	0.0	17	14
Jun-22	0.0	0.0	0.0	0.0	24	6
Jul-22	0.0	0.0	0.0	0.0	22	9
Aug-22	0.0	0.0	0.0	0.0	20	11
Sep-22	0.0	0.0	0.0	0.0	25	5
Oct-22	0.0	0.0	0.0	0.0	29	2
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	23	8

Statistics for Significant Wet Weather Events

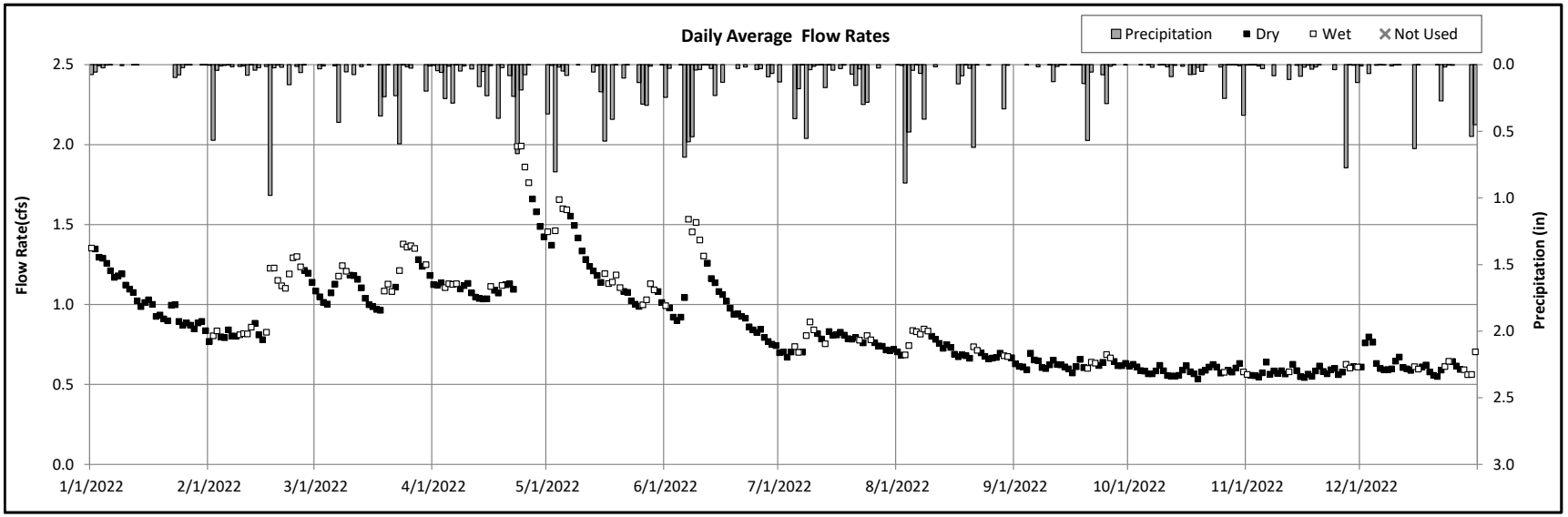
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	0.00	-	-	-
2	1.15	4/22/2022	4/25/2022	0.00	-	-	-
3	1.84	6/6/2022	6/9/2022	0.00	-	-	-
4	1.15	7/5/2022	7/8/2022	0.00	-	-	-
5	1.43	8/3/2022	8/5/2022	0.00	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

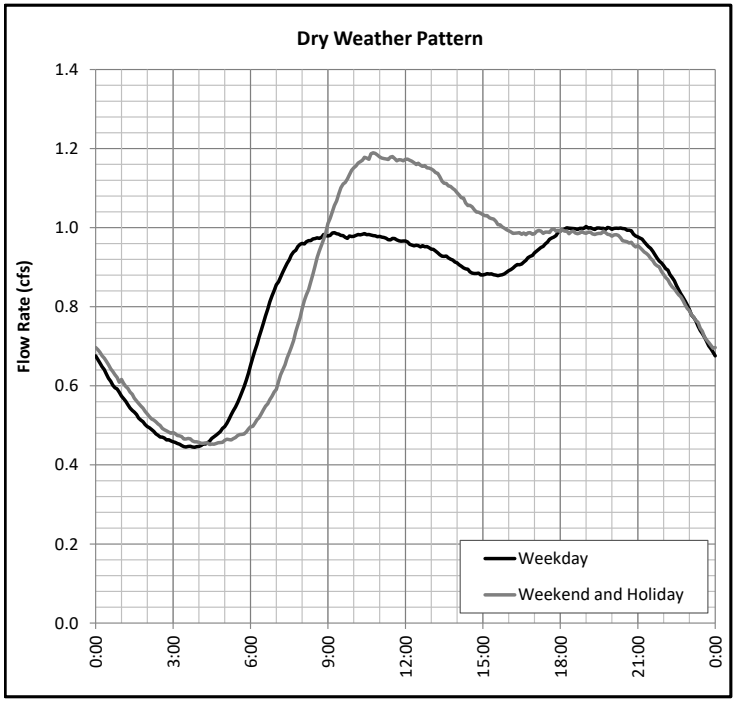
Figure 8-41
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

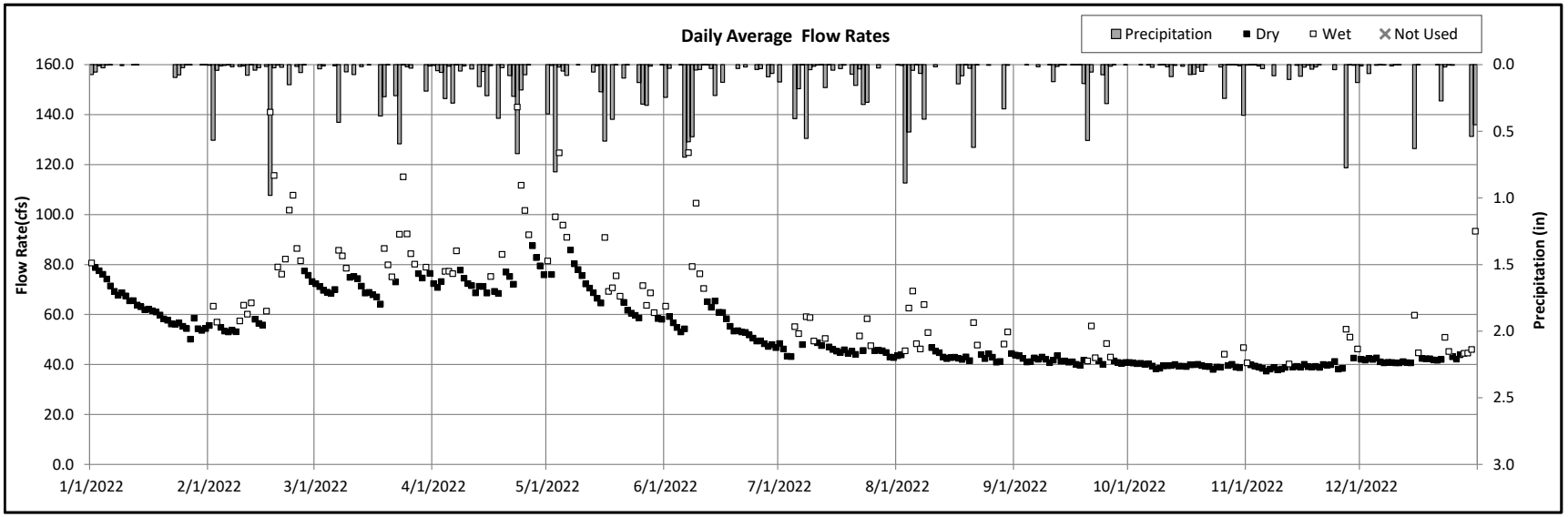
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	1.0	20.9	1.0	20.6	30	1
Feb-22	1.0	17.7	0.9	16.3	12	16
Mar-22	1.1	23.0	1.1	21.9	19	12
Apr-22	1.3	24.5	1.2	22.9	20	10
May-22	1.2	24.7	1.2	24.1	17	14
Jun-22	1.0	19.9	0.9	18.3	24	6
Jul-22	0.8	15.3	0.8	15.2	22	9
Aug-22	0.7	14.5	0.7	14.1	20	11
Sep-22	0.6	12.1	0.6	12.1	25	5
Oct-22	0.6	11.7	0.6	11.7	29	2
Nov-22	0.6	11.3	0.6	11.2	25	5
Dec-22	0.6	12.5	0.6	12.5	23	8

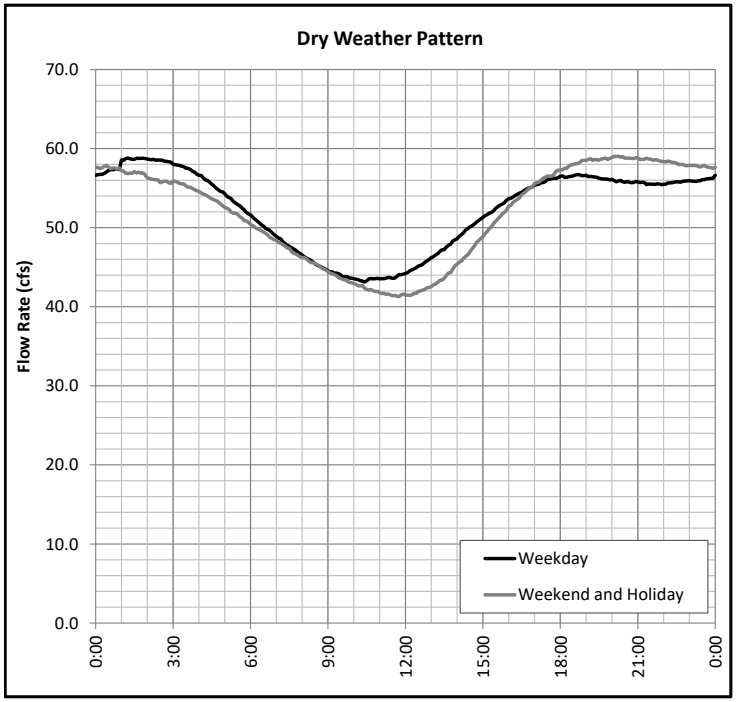
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	1.59	2/17/22 18:10	0.62	2/19/22 14:00
2	1.15	4/22/2022	4/25/2022	2.47	4/23/22 8:55	0.71	4/23/22 11:00
3	1.84	6/6/2022	6/9/2022	1.83	6/6/22 19:55	0.67	6/7/22 8:00
4	1.15	7/5/2022	7/8/2022	1.16	7/8/22 15:00	0.60	7/8/22 16:00
5	1.43	8/3/2022	8/5/2022	1.08	8/5/22 10:50	0.57	8/5/22 12:00
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-42
Rouge Valley Sewage Disposal System
Meter Report

Meter: WC-S-1A **Location: Oakwood Boulevard east of Dix Street** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: RVI 2-02 **Interceptor Branch: Lower Rouge**





Monthly Statistics

Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	63.2	1267.0	62.7	1255.4	30	1
Feb-22	72.1	1304.3	60.0	1085.3	12	16
Mar-22	76.9	1540.7	71.2	1426.2	19	12
Apr-22	80.1	1552.9	74.0	1434.1	20	10
May-22	73.8	1479.2	68.2	1366.3	17	14
Jun-22	60.9	1181.4	54.6	1058.0	24	6
Jul-22	47.8	957.9	45.5	910.7	22	9
Aug-22	47.0	941.9	43.2	864.9	20	11
Sep-22	42.3	819.6	41.5	804.6	25	5
Oct-22	39.9	798.6	39.5	790.9	29	2
Nov-22	40.3	782.1	39.1	758.6	25	5
Dec-22	44.7	896.4	41.7	835.1	23	8

Statistics for Significant Wet Weather Events

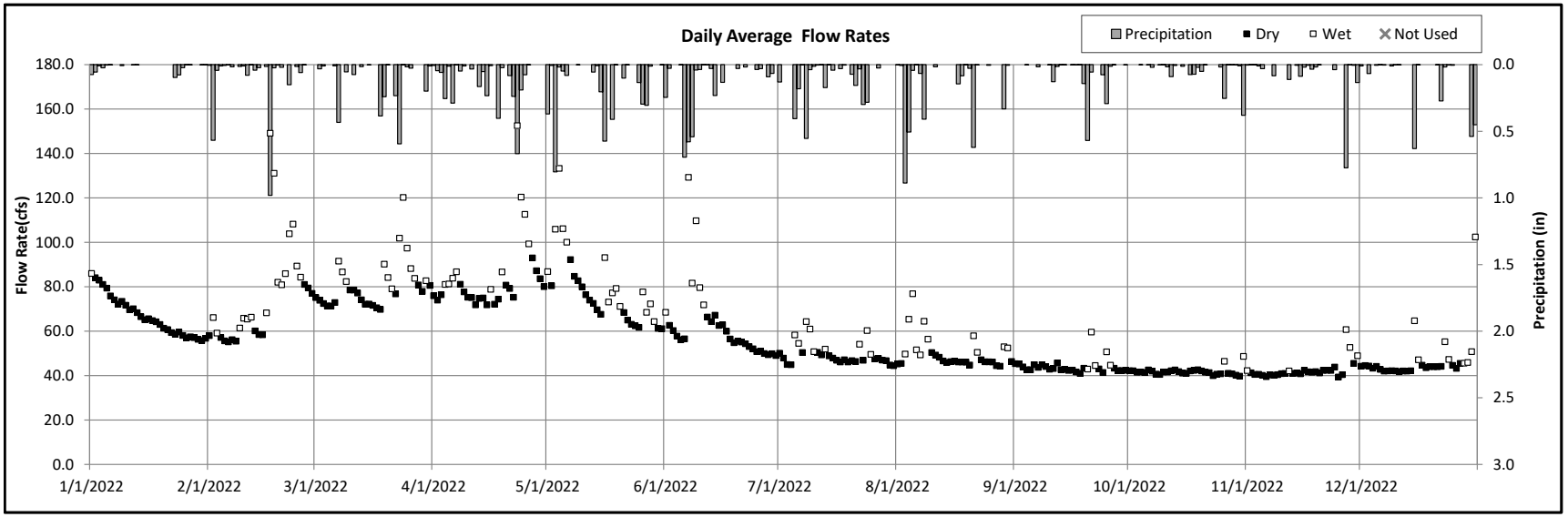
Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	164.07	2/17/22 20:25	20.21	2/17/22 9:10
2	1.15	4/22/2022	4/25/2022	181.11	4/23/22 7:25	14.78	4/23/22 5:40
3	1.84	6/6/2022	6/9/2022	174.98	6/7/22 5:15	3.21	6/6/22 0:00
4	1.15	7/5/2022	7/8/2022	104.09	7/8/22 20:10	6.69	7/5/22 7:55
5	1.43	8/3/2022	8/5/2022	102.90	8/4/22 1:00	7.96	8/3/22 23:30
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

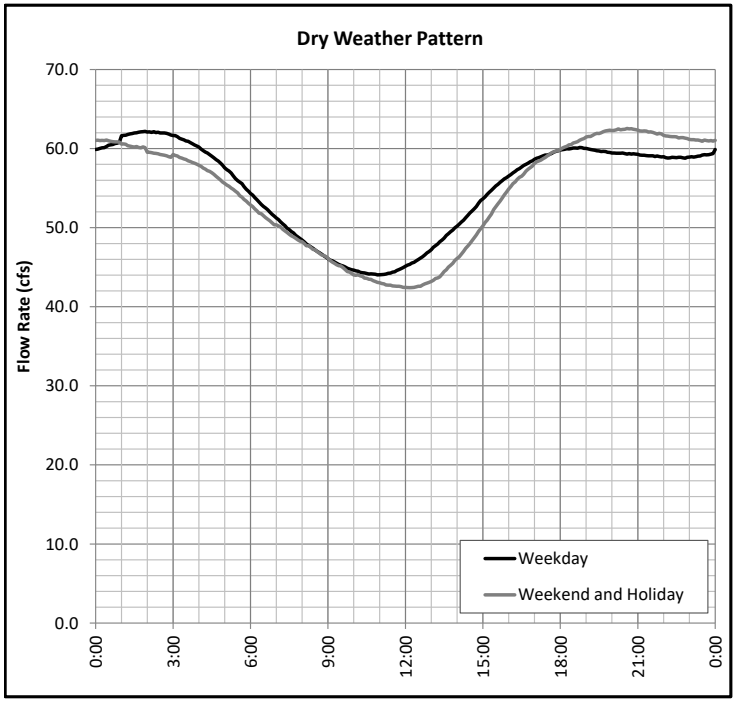
Figure 8-43
Rouge Valley Sewage Disposal System
Meter Report

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

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

Period: 1/1/2022 through 12/31/2022





Monthly Statistics

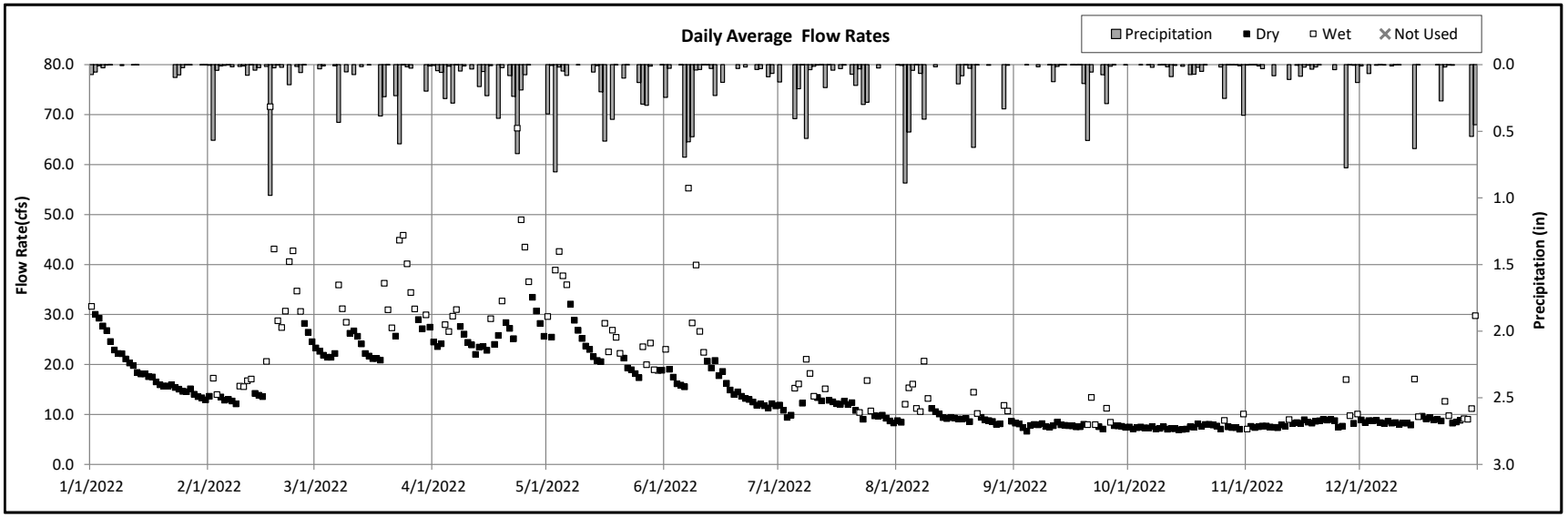
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	66.9	1340.8	66.3	1328.1	30	1
Feb-22	75.6	1368.8	62.6	1133.3	12	16
Mar-22	80.8	1618.5	74.6	1494.0	19	12
Apr-22	84.5	1639.1	77.7	1506.0	20	10
May-22	78.4	1570.8	71.9	1440.6	17	14
Jun-22	63.2	1226.1	56.5	1096.1	24	6
Jul-22	49.8	996.8	47.2	945.4	22	9
Aug-22	50.1	1004.1	46.3	928.2	20	11
Sep-22	44.0	853.5	43.1	836.5	25	5
Oct-22	41.8	837.1	41.4	829.2	29	2
Nov-22	42.6	825.7	41.2	799.7	25	5
Dec-22	46.9	940.3	43.3	867.9	23	8

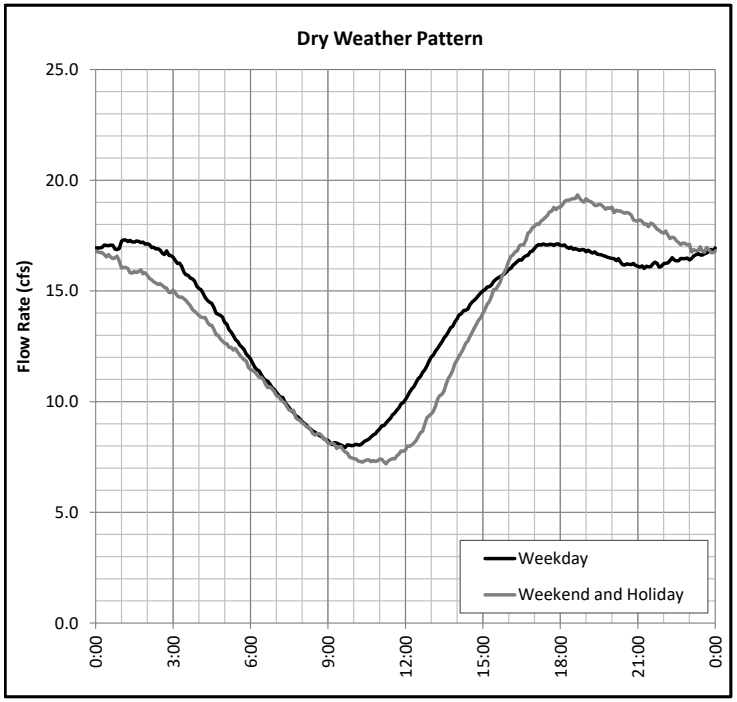
Statistics for Significant Wet Weather Events

Event No.	Rainfall (in)	Start Date/Time	End Date/Time	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
1	1.00	2/16/2022	2/18/2022	186.60	2/17/22 23:20	-	-
2	1.15	4/22/2022	4/25/2022	190.87	4/23/22 12:45	-	-
3	1.84	6/6/2022	6/9/2022	182.23	6/7/22 5:45	-	-
4	1.15	7/5/2022	7/8/2022	131.43	7/8/22 20:35	-	-
5	1.43	8/3/2022	8/5/2022	121.59	8/5/22 2:35	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure 8-44
Rouge Valley Sewage Disposal System
Meter Report

Meter: WC-S-2 + WC-S-3 **Location: Ford Road West of Evergreen Road & Southfield Road and Mercury Drive** **Period: 1/1/2022 through 12/31/2022**
Interceptor Manhole ID: MR 1A-C2 & MRIR 1-01B **Interceptor Branch: Middle Rouge**





Monthly Statistics

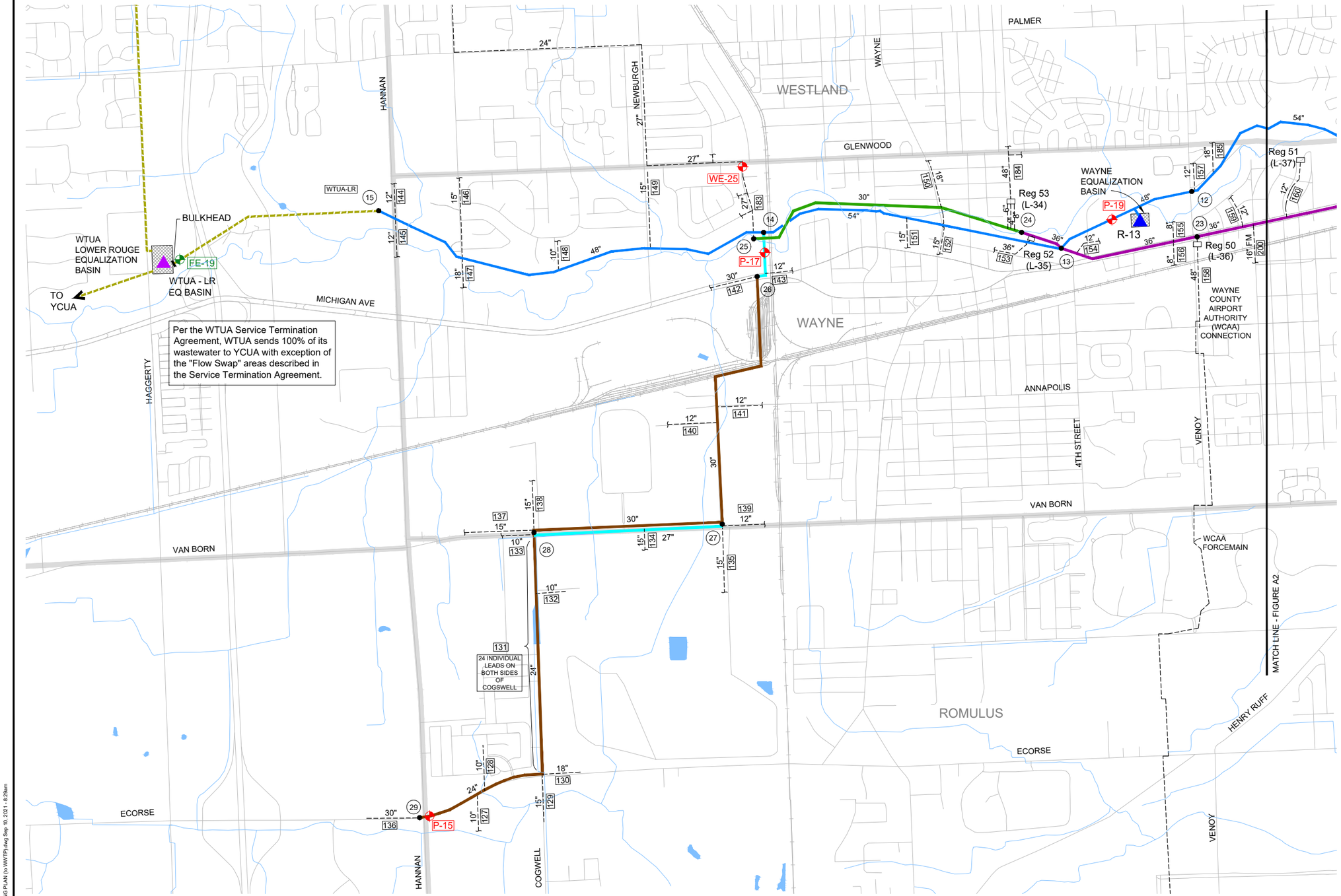
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	19.2	385.1	18.8	376.9	30	1
Feb-22	23.8	429.8	16.5	299.2	12	16
Mar-22	28.0	560.8	23.8	476.3	19	12
Apr-22	29.6	573.6	25.7	498.7	20	10
May-22	25.1	502.1	22.4	448.2	17	14
Jun-22	18.6	361.2	15.1	293.7	24	6
Jul-22	12.2	244.7	11.0	220.0	22	9
Aug-22	10.6	212.1	9.1	182.6	20	11
Sep-22	8.0	156.0	7.7	149.2	25	5
Oct-22	7.5	150.4	7.4	147.8	29	2
Nov-22	8.5	164.7	8.1	156.7	25	5
Dec-22	9.9	197.6	8.6	172.3	23	8

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	1.00	2/16/2022	2/18/2022	113.03	2/17/22 12:25	-	-
2	1.15	4/22/2022	4/25/2022	95.00	4/23/22 7:50	-	-
3	1.84	6/6/2022	6/9/2022	94.90	6/7/22 2:30	-	-
4	1.15	7/5/2022	7/8/2022	76.33	7/8/22 19:05	-	-
5	1.43	8/3/2022	8/5/2022	49.21	8/3/22 22:35	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Appendix A

System Reach Maps



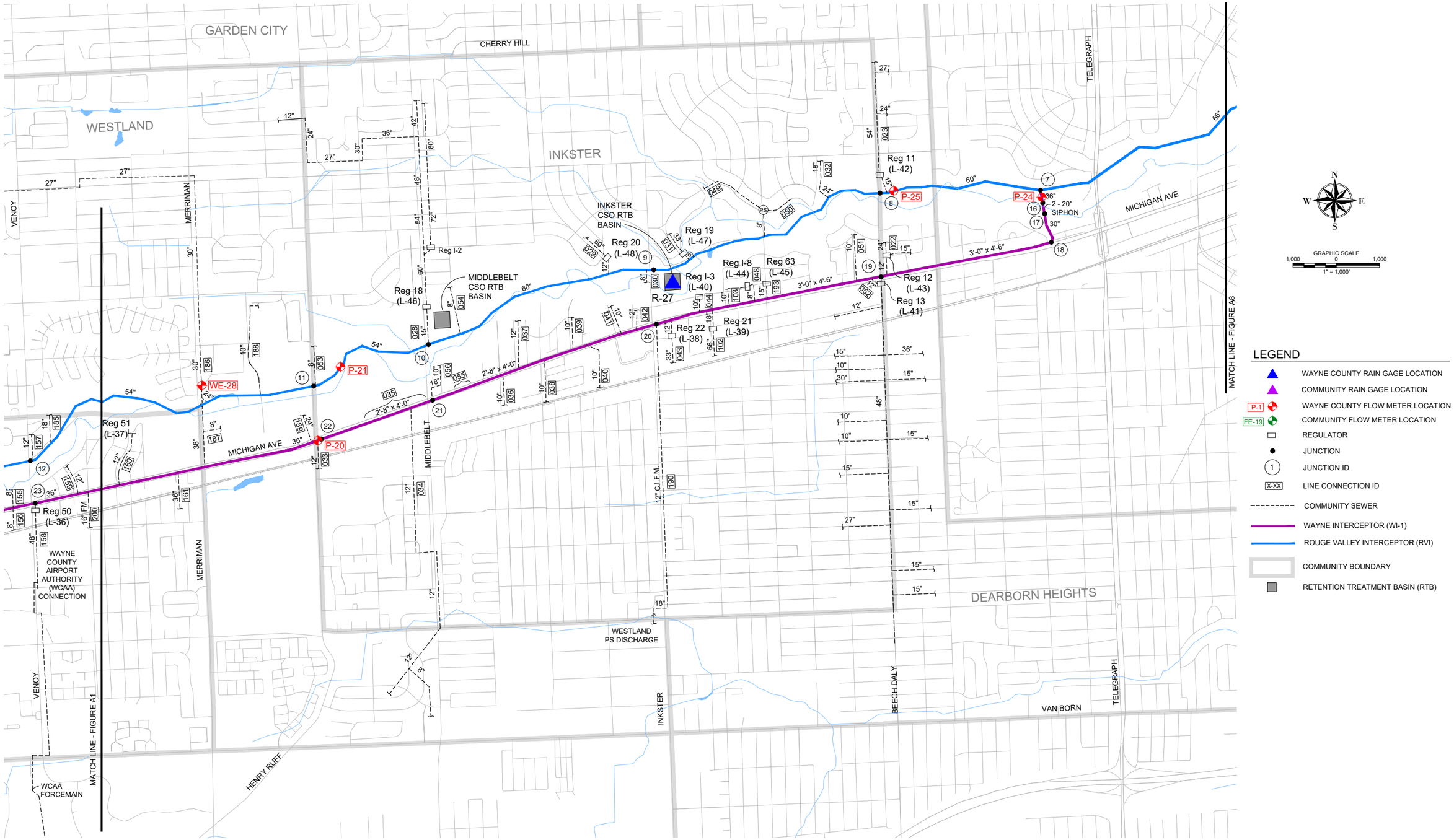
ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

LOWER ROUGE INTERCEPTOR SCHEMATIC HANNAN TO VENOY

SYSTEM MONITORING PLAN
FIGURE A1 OF 8

REVISION DATE: SEPTEMBER 10, 2021

K:\DWGFiles\2015\1510\RV\SDS SYSTEM MONITORING PLAN (to WWTP).dwg Sep 10, 2021 - 8:29am



ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

LOWER ROUGE INTERCEPTOR SCHEMATIC VENOY TO TELEGRAPH

SYSTEM MONITORING PLAN

FIGURE A2 OF 8

REVISION DATE: SEPTEMBER 10, 2021

K:\DWG\Files\2015\1510\RVSDS SYSTEM MONITORING PLAN (to WWTP).dwg Sep 10, 2021 - 8:28am

WTUA "Flow Swap" areas under the Service Termination Agreement are conveyed to RVSDS via line connections 93 and 94.

NORTHVILLE

NOVI

NORTHVILLE TWP.

EIGHT MILE

SEVEN MILE

SIX MILE

FIVE MILE

BULKHEAD

BECK

SHELDON

HAGGERTY

BG-1

R-11

P-1

MATCH LINE - FIGURE A4

42" 096

8" 095

15" 094

10" 092

18" 093

8" 090

12" 089

8" 091

42"

36"

42"

36"

77

76

75

74

73

N

W

E

S

GRAPHIC SCALE

1,000 0 1,000

1" = 1,000'

LEGEND

- WAYNE COUNTY RAIN GAGE LOCATION
- COMMUNITY RAIN GAGE LOCATION
- P-1 WAYNE COUNTY FLOW METER LOCATION
- FE-19 COMMUNITY FLOW METER LOCATION
- REGULATOR
- JUNCTION
- 1 JUNCTION ID
- X-XX LINE CONNECTION ID
- COMMUNITY SEWER
- PARKWAY INTERCEPTOR (PWI)
- PARKWAY INTERCEPTOR (PWI) (TRANSFERRED TO WTUA 8-12-2011)
- 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: SEPTEMBER 10, 2021

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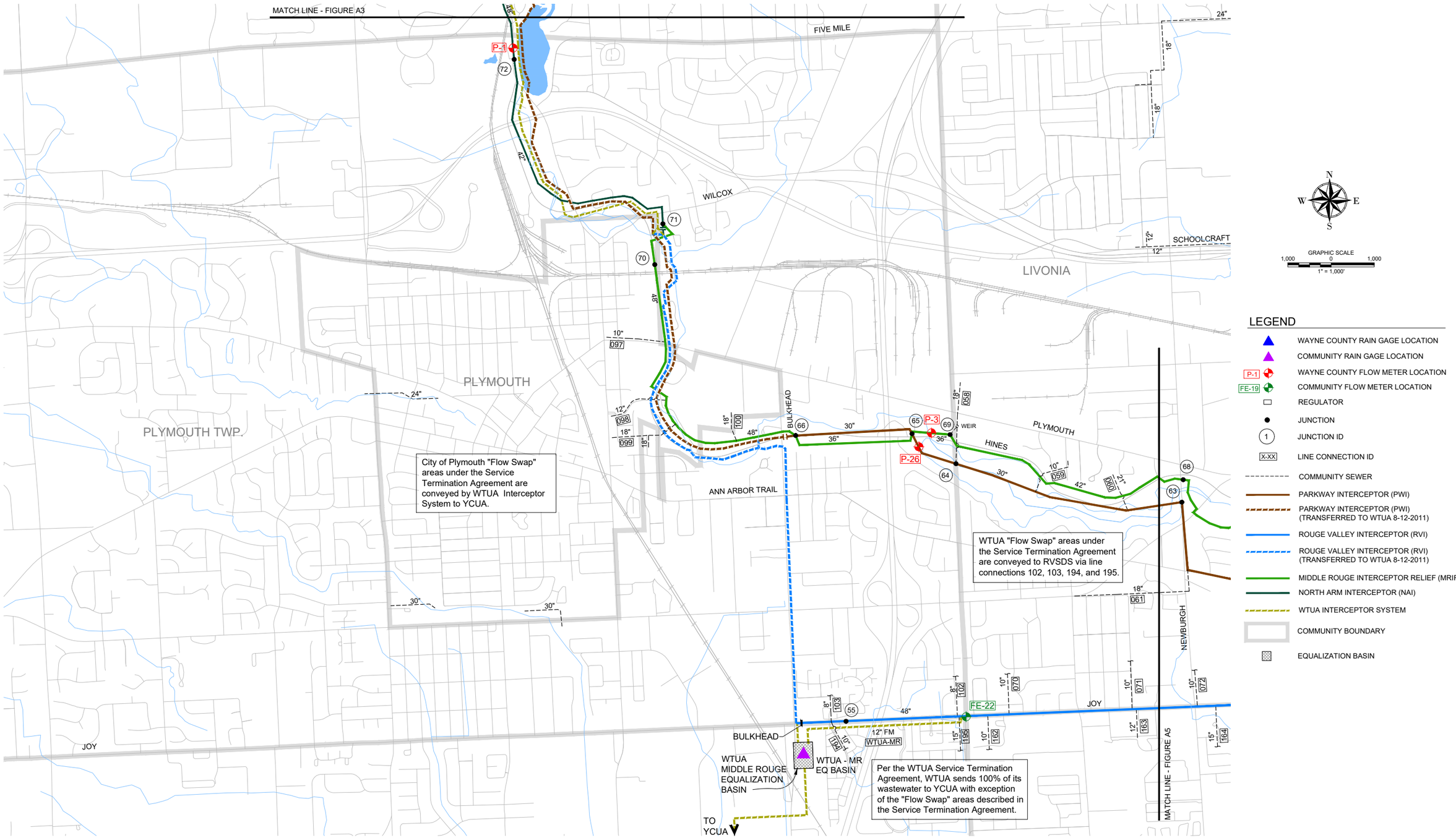

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC
5 MILE ROAD TO NEWBURGH

SYSTEM MONITORING PLAN

FIGURE A4 OF 8

REVISION DATE: SEPTEMBER 10, 2021

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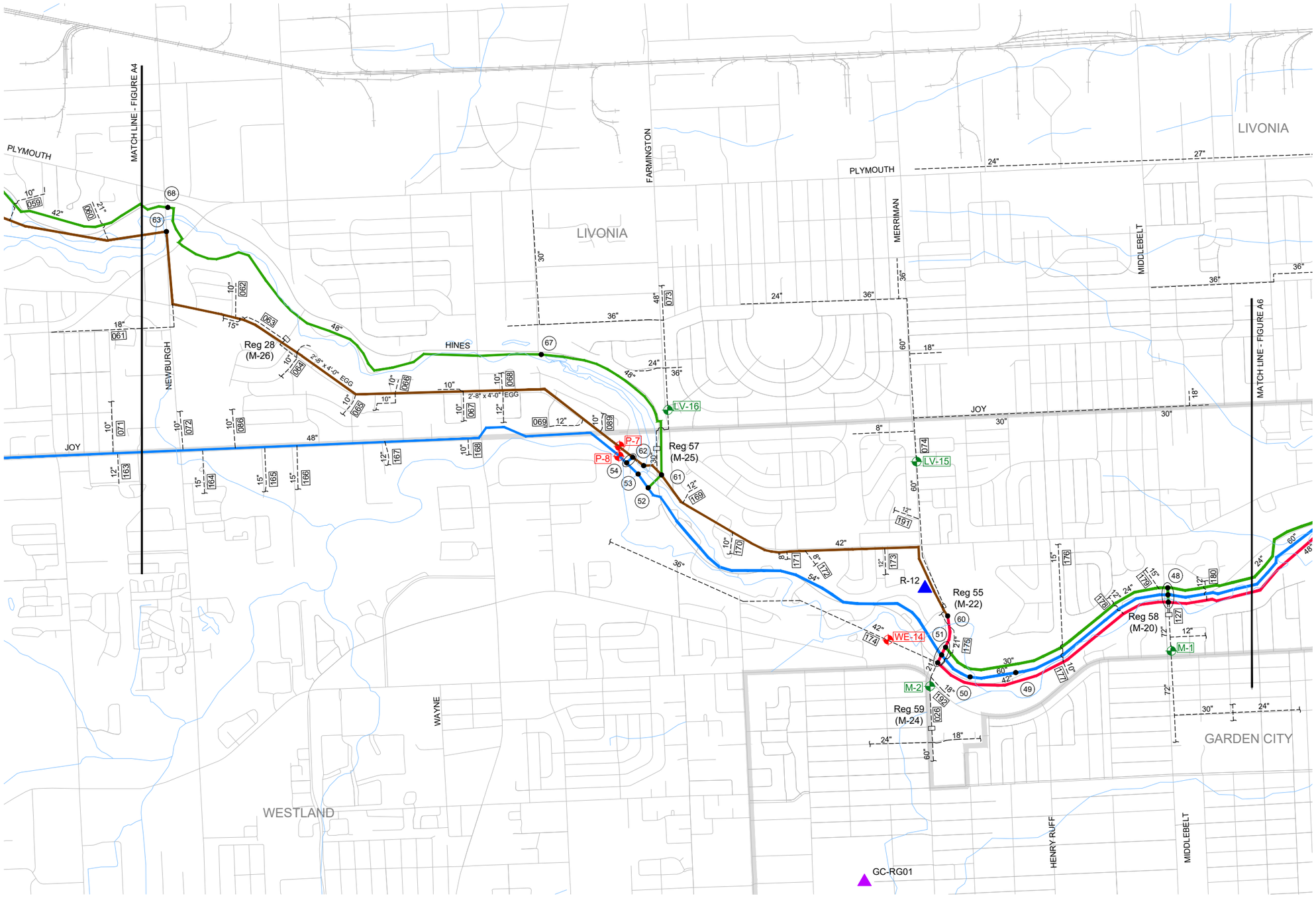

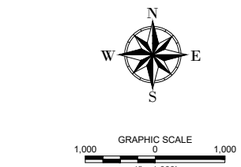

LEGEND

- WAYNE COUNTY RAIN GAGE LOCATION
- COMMUNITY RAIN GAGE LOCATION
- P-1 WAYNE COUNTY FLOW METER LOCATION
- FE-19 COMMUNITY FLOW METER LOCATION
- REGULATOR
- JUNCTION
- 1 JUNCTION ID
- X-XX LINE CONNECTION ID
- COMMUNITY SEWER
- PARKWAY INTERCEPTOR (PWI)
- MIDDLE ROUGE PARKWAY INTERCEPTOR EXTENSION (MRPIE)
- ROUGE VALLEY INTERCEPTOR (RVI)
- MIDDLE ROUGE INTERCEPTOR RELIEF (MRIR)
- COMMUNITY BOUNDARY

ROUGE VALLEY SEWAGE DISPOSAL SYSTEM

MIDDLE ROUGE INTERCEPTOR SCHEMATIC NEWBURGH TO MIDDLEBELT

SYSTEM MONITORING PLAN

FIGURE A5 OF 8

REVISION DATE: SEPTEMBER 10, 2021

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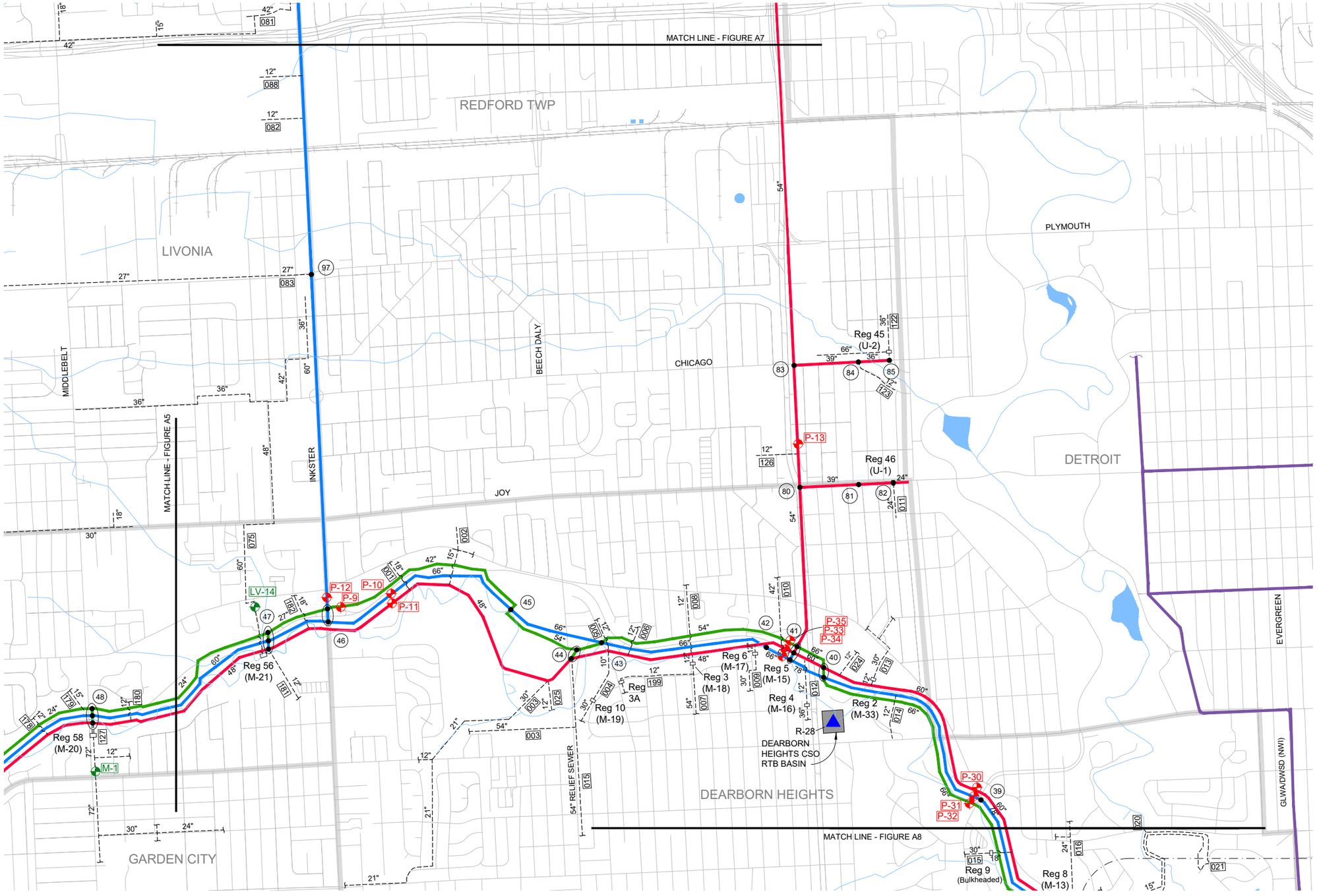

N
W E
S

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

LEGEND

- WAYNE COUNTY RAIN GAGE LOCATION
- COMMUNITY RAIN GAGE LOCATION
- P-1 WAYNE COUNTY FLOW METER LOCATION
- FE-19 COMMUNITY FLOW METER LOCATION
- REGULATOR
- 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: SEPTEMBER 10, 2021

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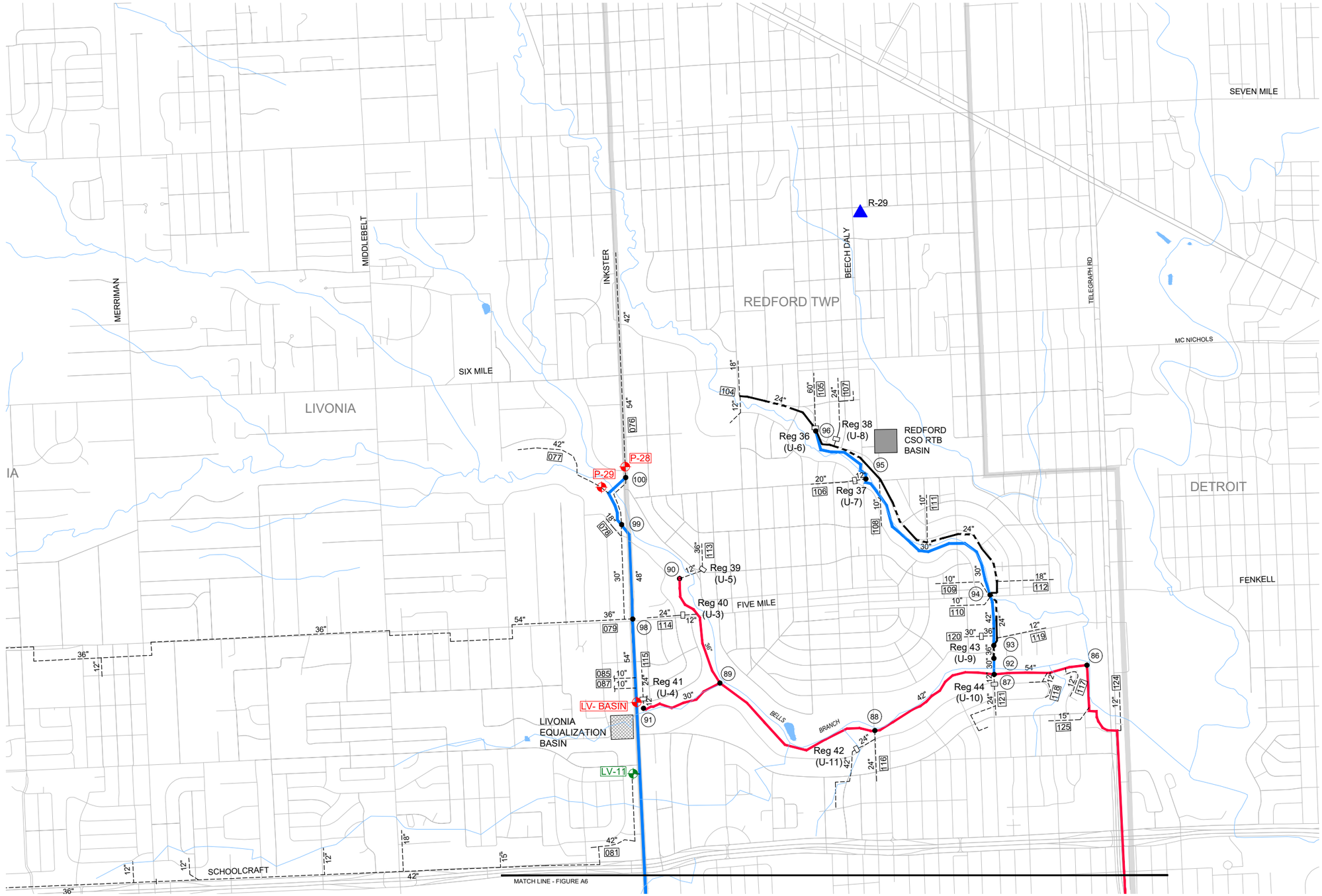

LEGEND

- WAYNE COUNTY RAIN GAGE LOCATION
- COMMUNITY RAIN GAGE LOCATION
- P-1 WAYNE COUNTY FLOW METER LOCATION
- FE-19 COMMUNITY FLOW METER LOCATION
- REGULATOR
- 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: SEPTEMBER 10, 2021

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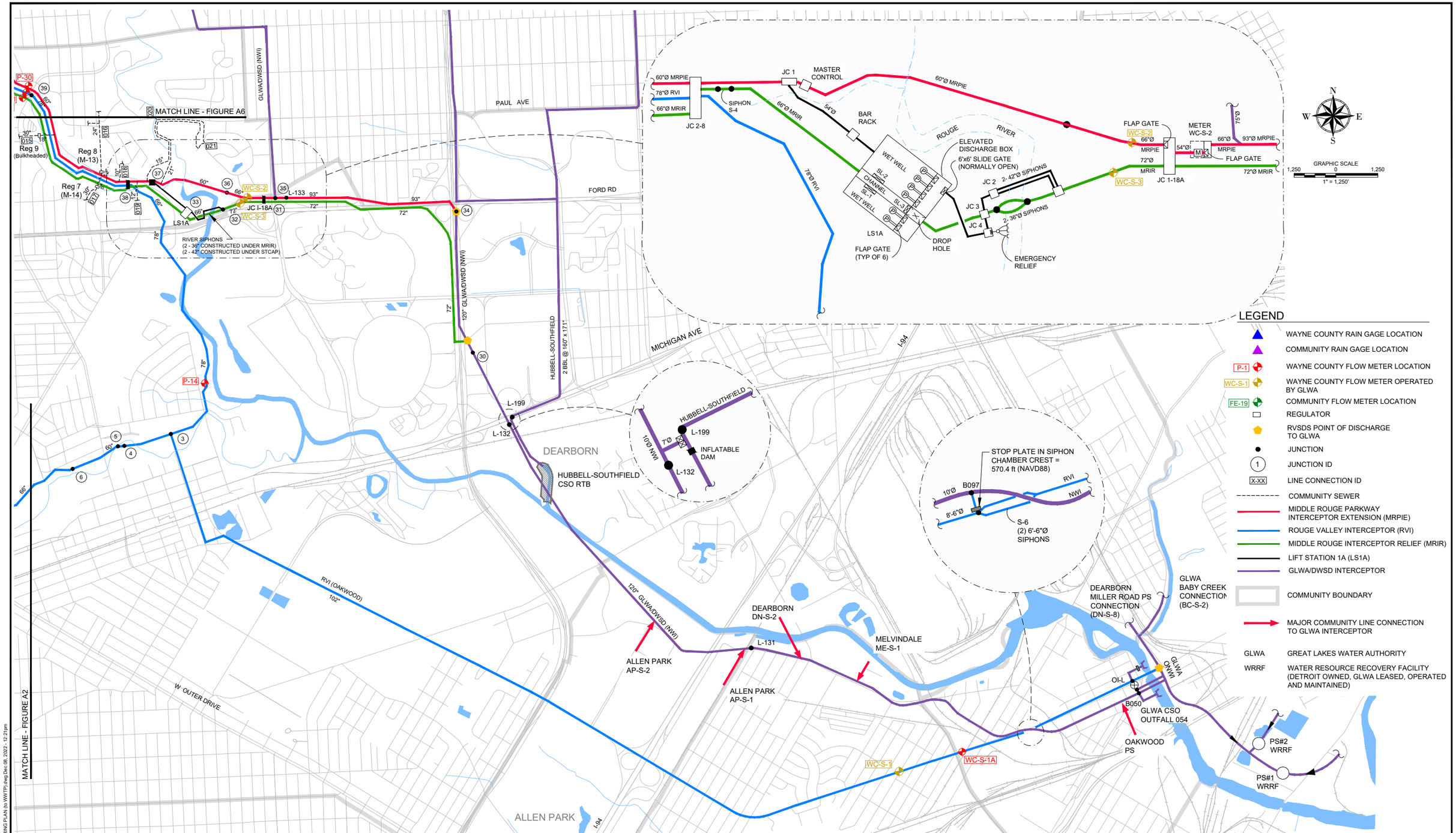

LEGEND

- WAYNE COUNTY RAIN GAGE LOCATION
- COMMUNITY RAIN GAGE LOCATION
- P-1 — WAYNE COUNTY FLOW METER LOCATION
- WC-S-1 — WAYNE COUNTY FLOW METER OPERATED BY GLWA
- FE-19 — COMMUNITY FLOW METER LOCATION
- REGULATOR
- RVSDS POINT OF DISCHARGE TO GLWA
- 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 INTERCEPTOR

GLWA — GREAT LAKES WATER AUTHORITY

WRRF — WATER RESOURCE RECOVERY FACILITY (DETROIT OWNED, GLWA LEASED, OPERATED AND MAINTAINED)

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

SYSTEM MONITORING PLAN
FIGURE A8 OF 8

REVISION DATE: DECEMBER 8, 2022

K:\DWG\Files\2015\1510\RV\SDS SYSTEM MONITORING PLAN (to WWTP).dwg Dec 08, 2022 - 12:21pm

Appendix B

Dye-Dilution Test Adjustment Factors

Table B-1
Rouge Valley Sewage Disposal System
Summary of Applicable Dye-Dilution Test Adjustment Factors

Meter	Dye Test Date	Adjustment Factor	Period Adjustment Factor
BG-1	8/10/2016	0.93	0.93
LV-04	7/20/2018	1.11	1.11
LV-14	7/19/2018	0.90	0.90
LV-15	12/18/2020	0.70	0.70
LV-Basin	8/8/2016	0.82	0.91
	11/30/2020	1.00	
M-1	7/18/2018	0.87	0.90
	12/13/2018	0.93	
M-2	7/17/2018	0.84	0.84
P-1	7/11/2016	0.89	0.92
	11/2/2020	0.95	
P-7	8/9/2016	0.67	0.66
	10/27/2020	0.65	
P-8	8/9/2016	1.10	0.93
	10/27/2020	0.80	
P-9	9/1/2015	0.96	0.95
	9/26/2017	0.96	
	10/28/2020	0.92	
P-10	8/27/2015	0.97	1.04
	9/27/2017	1.05	
	10/15/2020	1.13	
P-11	8/26/2015	0.96	0.97
	9/25/2017	0.97	
	10/20/2020	0.99	
P-12	8/26/2015	1.01	1.01
	9/29/2017	0.96	
	10/28/2020	1.05	
P-13	7/18/2016	0.93	0.88
	10/26/2020	0.83	
P-14	9/10/2015	1.00	0.97
	9/29/2017	0.93	
	10/23/2020	0.99	
P-15	6/23/2016	0.84	0.81
	11/23/2020	0.79	
P-17	8/8/2016	0.80	0.89
	11/6/2020	0.98	
P-19	9/16/2015	0.94	0.95
	9/28/2017	0.94	
	11/6/2020	0.98	

Table B-1 continued
Rouge Valley Sewage Disposal System
Summary of Applicable Dye-Dilution Test Adjustment Factors

Meter	Dye Test Date	Adjustment Factor	Period Adjustment Factor
P-20	6/24/2016	0.99	1.02
	10/16/2020	1.04	
P-21	9/16/2015	0.94	1.00
	10/5/2017	1.12	
	10/29/2020	0.94	
P-24	12/4/2014	0.92	0.93
	9/8/2015	0.82	
	9/26/2017	0.97	
	10/23/2020	0.97	
P-25	9/8/2015	0.95	0.90
	9/27/2017	0.96	
	10/29/2020	0.77	
P-28	6/24/2016	0.74	0.75
	10/22/2020	0.76	
P-29	7/27/2016	0.81	0.81
P-30	7/14/2016	0.98	0.99
	11/26/2019	0.99	
P-31	7/7/2016	1.00	1.04
	12/17/2019	1.07	
P-32	7/7/2016	0.89	1.00
	12/10/2019	1.11	
P-33	7/14/2016	0.86	0.86
P-34	11/5/2018	1.11	1.11
P-35	7/12/2016	0.94	0.94
WE-14	11/27/2020	0.84	0.84
WE-25	11/30/2020	1.13	1.13
WE-28	10/15/2015	0.72	0.77
	9/27/2017	0.85	
	11/24/2020	0.72	