

Downriver Utility Wastewater Authority

Downriver Sewage Disposal System System Monitoring Report for 2022

May 17, 2023



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1) INTRODUCTION

The Downriver Sewage Disposal System (DSDS) annual system monitoring report 2022 provides a summary of the best available flow monitoring data 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 DSDS, each meter district and community during the dry and wet weather conditions that occurred in 2022. The flow monitoring data were reviewed and missing or erroneous data have been estimated using fill-in techniques to provide a complete data set.

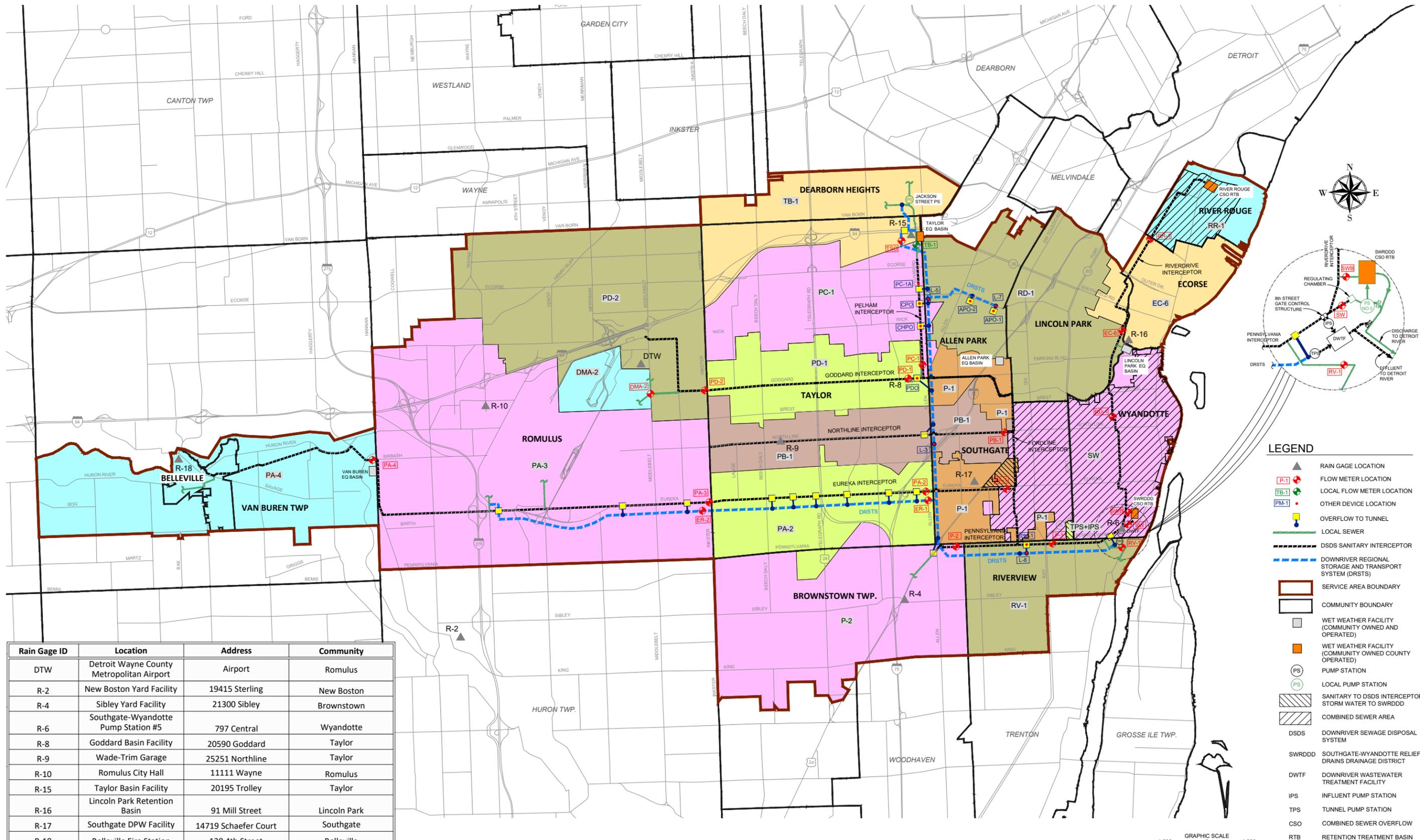
Figure 1-1 is a map of the DSDS showing the flow meter and level sensor locations, incremental meter districts, the interceptor and tunnel system, and the location of rain gauges that may be used to evaluate the wet weather monitoring data.

2) SYSTEM SUMMARY

Major findings from the DSDS 2022 system monitoring are presented in the following subsections: subsection A lists noteworthy items, subsection B presents an overview of the DSDS performance, subsection C presents an overview of the controlled flow communities performance, and subsection D presents an overview of the non-controlled flow communities performance.

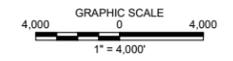
A) NOTEWORTHY ITEMS

1. Preventive maintenance of the Triton flow meters transitioned from ADS Environmental Services to Veolia on August 1, 2022. Veolia now provides preventive maintenance for all of the flow monitors, level sensors, and rain gauges in the DSDS.
2. Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022. Flow meter DMA-2 was no longer needed as it is internal to the City of Romulus and not used in incremental meter math calculations between DSDS customers (the meter measured flows from a connection from the Wayne County Airport Authority (WCAA), which is part of the City of Romulus). Therefore, removal of meter DMA-2 will not adversely affect the DSDS flow monitoring program. Flow monitor DMA-2 predominantly measured discharge to the DSDS of spent dilute aircraft de-icing fluid runoff collected in Pond 3 West at Detroit Metropolitan Wayne County Airport (DTW). The WCAA maintains its own flow meter at DTW for the same purpose. WCAA has shared this data with DUWA (and Wayne County) since 2012. The WCAA flow meter data and meter DMA-2 data have routinely been in good agreement. The Pond 3 West meter will continue to provide an understanding of the flow rates from this connection.
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.



Rain Gage ID	Location	Address	Community
DTW	Detroit Wayne County Metropolitan Airport	Airport	Romulus
R-2	New Boston Yard Facility	19415 Sterling	New Boston
R-4	Sibley Yard Facility	21300 Sibley	Brownstown
R-6	Southgate-Wyandotte Pump Station #5	797 Central	Wyandotte
R-8	Goddard Basin Facility	20590 Goddard	Taylor
R-9	Wade-Trim Garage	25251 Northline	Taylor
R-10	Romulus City Hall	11111 Wayne	Romulus
R-15	Taylor Basin Facility	20195 Trolley	Taylor
R-16	Lincoln Park Retention Basin	91 Mill Street	Lincoln Park
R-17	Southgate DPW Facility	14719 Schaefer Court	Southgate
R-18	Belleville Fire Station	130 4th Street	Belleville

- LEGEND**
- ▲ RAIN GAGE LOCATION
 - P-1 FLOW METER LOCATION
 - TB-1 LOCAL FLOW METER LOCATION
 - PM-1 OTHER DEVICE LOCATION
 - OVERFLOW TO TUNNEL
 - LOCAL SEWER
 - DSDS SANITARY INTERCEPTOR
 - DOWNRIVER REGIONAL STORAGE AND TRANSPORT SYSTEM (DRSTS)
 - SERVICE AREA BOUNDARY
 - COMMUNITY BOUNDARY
 - WET WEATHER FACILITY (COMMUNITY OWNED AND OPERATED)
 - WET WEATHER FACILITY (COMMUNITY OWNED COUNTY OPERATED)
 - PS PUMP STATION
 - PS LOCAL PUMP STATION
 - Sanitary to DSDS Storm Water to SWRDD
 - COMBINED SEWER AREA
 - DSDS DOWNRIVER SEWAGE DISPOSAL SYSTEM
 - SWRDD SOUTHGATE-WYANDOTTE RELIEF DRAINS DRAINAGE DISTRICT
 - DWTF DOWNRIVER WASTEWATER TREATMENT FACILITY
 - IPS INFLUENT PUMP STATION
 - TPS TUNNEL PUMP STATION
 - CSO COMBINED SEWER OVERFLOW
 - RTB RETENTION TREATMENT BASIN



UPDATED: NOVEMBER 4, 2022

Nov. 04, 2022 - 2:05pm K:\DWGFiles\2018\1819 DSDS System Monitoring Plan.dwg

DESCRIPTION	CHECKED	APPROVED	DATE
DESIGN	D. WIEBE		
DRAFTING	D. HEROLD-J		
CHECKED	D. WIEBE		
APPROVED	K. RIDGWAY		
ISSUE DATE	AUG 2017		



DOWNRIVER SEWAGE DISPOSAL SYSTEM

PREPARED BY:

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INCREMENTAL METER DISTRICTS & INTERCEPTOR & METER LOCATIONS & RAIN GAGES FOR 2022 SYSTEM MONITORING PLAN

SCALE: 1" = 4000'

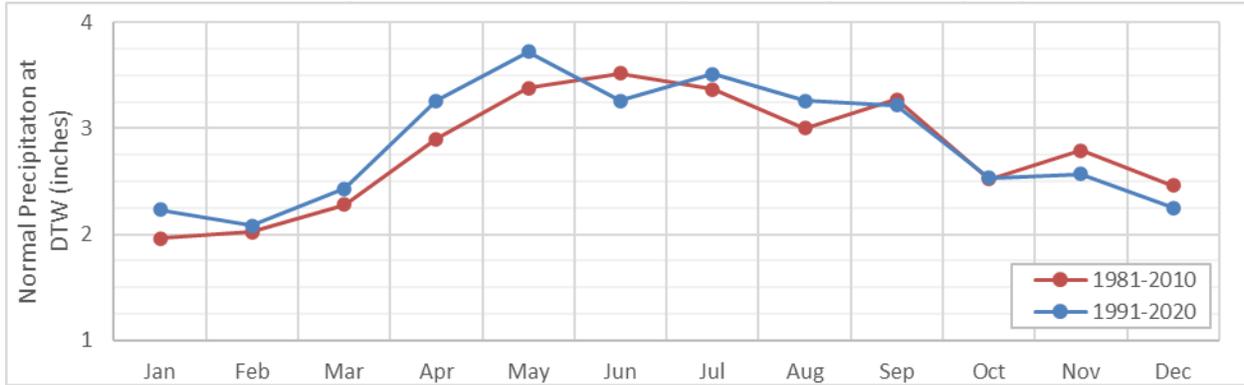
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FIGURE 1

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 2-1 shows the monthly Climate Normal precipitation at DTW.

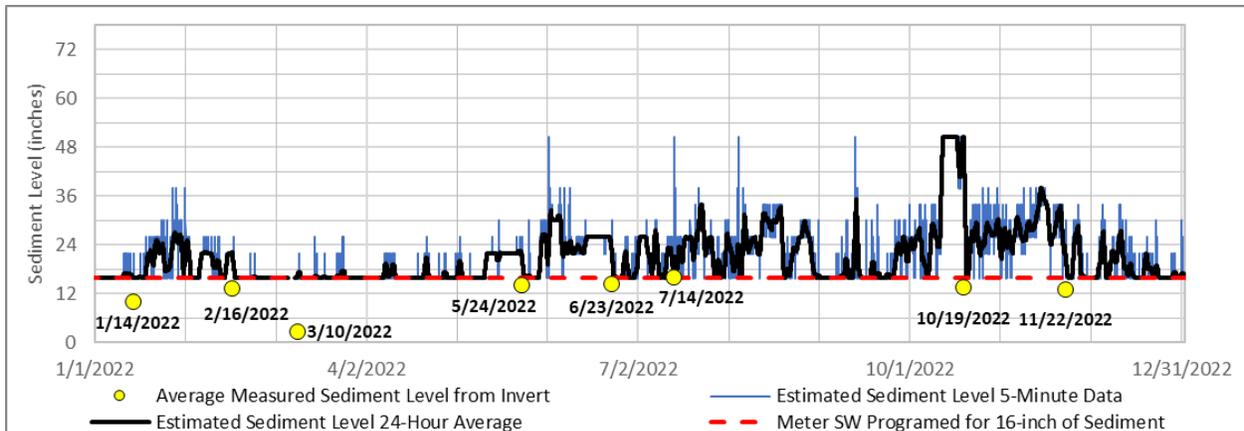
Figure 2-1
Normal Precipitation at Detroit Metropolitan Wayne County Airport



- The sediment profile was measured at Meter SW eight times in 2022. The average sediment depth of the profile was 13 inches relative to the pipe invert at the metering location. Figure 2-2 shows the estimated sediment depths at Meter SW and the average measured sediment depths for the profiles for 2022. Detailed sediment profile measurements and the sediment estimation methodology are provided in Appendix E. Figure 2-2 shows the dynamic nature of sediment accretion/reduction at this location.

In general, the 2022 sediment measurements are lower than the programmed 16-inch sediment level and the estimated sediment level based on velocity paths in service. It is unknown if this is a true indication that sediment is lower than estimated and programmed or if the sediment level is decreased through the act of preparing for a sediment measurement entry. If this general trend of lower sediment measurements continues, it may be appropriate to decrease the programmed sediment level.

Figure 2-2
Sediment Profile Measurements and Estimated Sediment Levels at Meter SW



- In 2022, dye-dilution testing was conducted for Meters P-2, PA-3, PA-4, PC-1, PD-2, RR-1, RV-1, SW, and TB-1. The results of dye tests currently in-effect for DSDS meters are presented in Appendix F. The data presented in this report reflects the results of these dye dilution tests.

B) DSDS OVERVIEW

- The total precipitation at DTW for year 2022 was 24.40 inches, which is 9.92 inches below normal.
- 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.
- There were six (6) significant storm events in 2022. 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. Table 2-1 lists the average rainfall depths over the DSDS service area for the significant storm events for 2022.

**Table 2-1
Average Rainfall Depths for Significant Storms during 2022 in the DSDS Service Area**

Significant Storm Event	Event Dates	Average Total Rainfall Depth Over the Service Area (inches)
1	2/16-18/2022	1.22
2	5/15-16/2022	1.03
3	6/6-7/2022	1.11
4	8/3-4/2022	1.11
5	11/27/2022	1.01
6	12/30-31/2022	1.15

- There were no major storm events in 2022. Major storm events are a subgroup of significant storm events which result in the peak hourly influent flow rate to the Downriver Wastewater Treatment Facility (DWTF) reaching or exceeding 175 million gallons per day (MGD), which is equal to 271 cubic feet per second (cfs).

5. The average rainfall depths and peak 24-hour rainfall depths at DTW for the significant/major storms are listed in Table 2-2.

**Table 2-2
Rainfall Depths at DTW for Significant Storms during 2022 in the DSDS Service Area**

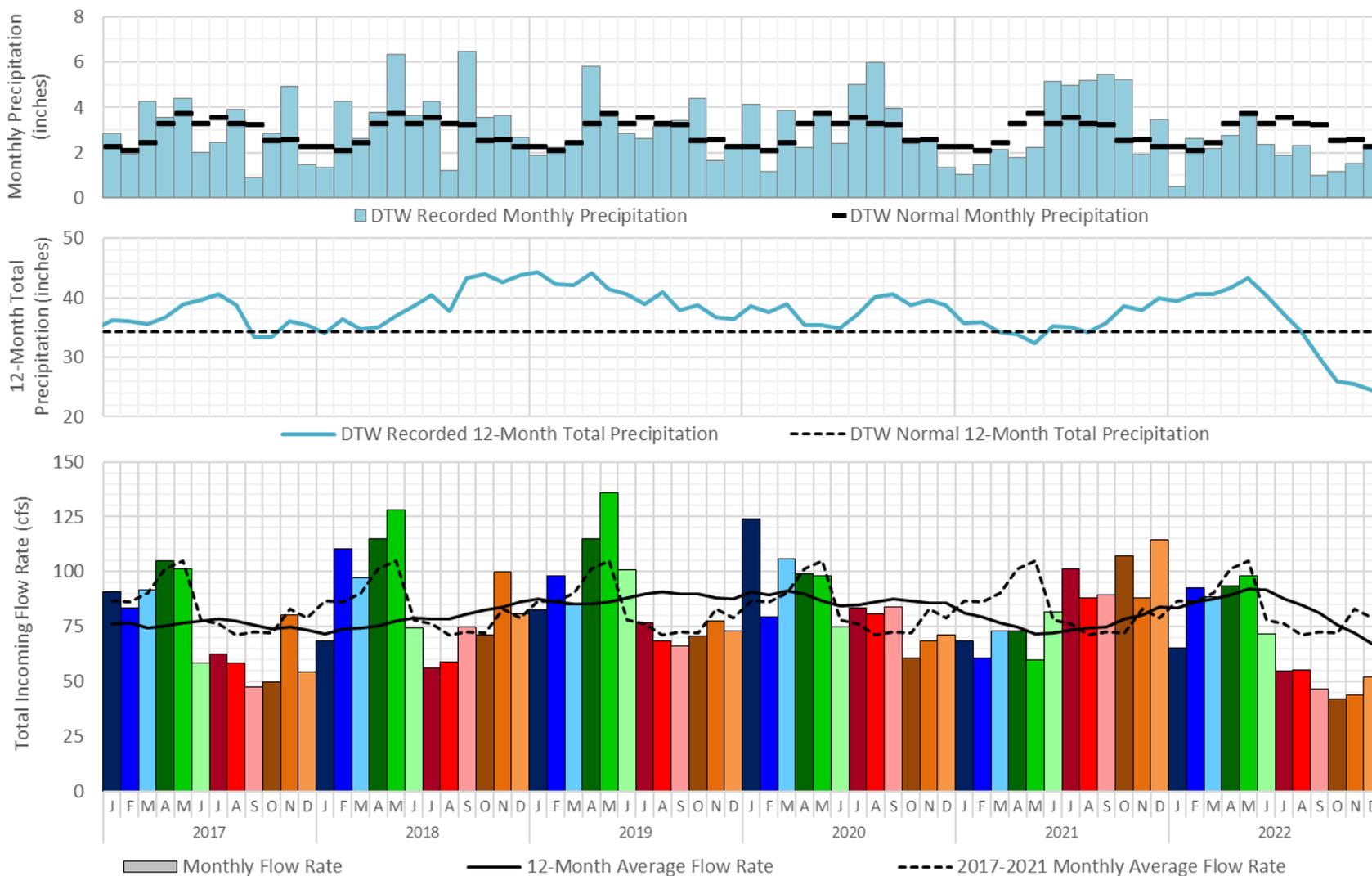
Major Storm Event	Significant Storm Event	Event Dates	Peak 24-hour Rainfall Depth (inches)	Total Rainfall Depth (inches)
-	1	2/16-18/2022	1.27	1.29
-	2	5/15-16/2022	-	1.07
-	3	6/6-7/2022	0.85	0.85
-	4	8/3-4/2022	0.51	0.95
-	5	11/27/2022	1.04	1.04
-	6	12/30-31/2022	1.10	1.12

Notes: 1) Hourly precipitation data not available for DTW for Significant Storm Event 2.

6. Figure 2-3 shows the long-term flow rate versus precipitation trends for the DSDS by month from 2017 through 2022. The incoming flow rate to the DWTF is based on the interceptor system flow meters, and the precipitation is at DTW. The figure shows the expected seasonal variations in flow rates, and the trend between precipitation and flow rates.

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.

Figure 2-3
Monthly Influent Flow Rate to DWTF versus Precipitation at DTW for 2017 through 2022



7. Tables 2-3 through 2-6 lists the average quarterly flow rate and total flow volume for years 2017 through 2022. The total incoming flow rate to the DWTF is based on the interceptor system flow meters. The DWTF flow rate is based on the IPS and TPS and includes recycle flow rate. The total influent volume to the DWTF for 2022 Q2 and Q4 is the lowest of the last six years.

**Table 2-3
Average Q1 Flow Rate and Total Volume for 2017 through 2022**

Year	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)			Total Flow Volume (MG)		
		Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle	Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle
2017 Q1	8.99	88.86	95.73	-	5,170	5,570	-
2018 Q1	8.26	91.29	98.67	-	5,310	5,740	-
2019 Q1	6.54	88.15	86.82	-	5,130	5,050	-
2020 Q1	9.14	103.62	110.07	-	6,090	6,470	-
2021 Q1	4.63	67.49	68.76	64.52	3,930	4,000	3,750
2022 Q1	5.31	81.76	85.73	77.72	4,760	4,990	4,520
2017-2021 Q1 Average	7.51	87.88	92.01	-	5,130	5,370	-

Notes:

1. DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years DWTF with recycle flow is presented. DWTF Including Recycle = IPS + TPS. DWTF without Recycle = IPS + TPS – Recycle.

**Table 2-4
Average Q2 Flow Rate and Total Volume for 2017 through 2022**

Year	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)			Total Flow Volume (MG)		
		Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle	Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle
2017 Q2	9.96	88.26	96.14	-	5,190	5,650	-
2018 Q2	13.80	106.03	121.62	-	6,240	7,150	-
2019 Q2	12.29	117.43	126.62	-	6,910	7,450	-
2020 Q2	8.23	90.64	98.25	-	5,330	5,780	-
2021 Q2	9.18	71.50	73.52	69.72	4,200	4,320	4,100
2022 Q2	8.91	87.87	92.00	83.11	5,170	5,410	4,890
2017-2021 Q2 Average	10.69	94.77	103.23	-	5,570	6,070	-

Notes:

1. DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years DWTF with recycle flow is presented. DWTF Including Recycle = IPS + TPS. DWTF without Recycle = IPS + TPS – Recycle.

**Table 2-5
Average Q3 Flow Rate and Total Volume for 2017 through 2022**

Year	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)			Total Flow Volume (MG)		
		Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle	Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle
2017 Q3	7.26	56.25	61.22	-	3,340	3,640	-
2018 Q3	11.90	63.22	75.67	-	3,760	4,500	-
2019 Q3	9.21	70.32	78.50	-	4,180	4,670	-
2020 Q3	14.96	82.73	89.92	-	4,920	5,350	-
2021 Q3	15.55	93.07	95.66	90.37	5,530	5,690	5,370
2022 Q3	5.17	52.17	51.43	46.94	3,100	3,060	2,790
2017-2021 Q3 Average	11.78	73.12	80.19	-	4,350	4,770	-

Notes:

- DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years DWTF with recycle flow is presented. DWTF Including Recycle = IPS + TPS. DWTF without Recycle = IPS + TPS – Recycle.

**Table 2-6
Average Q4 Flow Rate and Total Volume for 2017 through 2022**

Year	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)			Total Flow Volume (MG)		
		Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle	Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle
2017 Q4	9.25	61.30	68.56	-	3,650	4,080	-
2018 Q4	9.85	83.73	90.38	-	4,980	5,370	-
2019 Q4	8.34	73.88	77.49	-	4,390	4,610	-
2020 Q4	6.40	66.78	67.74	-	3,970	4,030	-
2021 Q4	10.63	103.27	104.99	99.53	6,140	6,240	5,920
2022 Q4	5.01	45.94	47.01	42.65	2,730	2,800	2,540
2017-2021 Q4 Average	8.89	77.79	81.83	-	4,630	4,870	-

Notes:

- DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years DWTF with recycle flow is presented. DWTF Including Recycle = IPS + TPS. DWTF without Recycle = IPS + TPS – Recycle.

- Table 2-7 lists the average annual flow rate and total flow volume for years 2017 through 2022. The total incoming flow rate to the DWTF is based on the interceptor system flow meters. The DWTF flow rate is based on the IPS and TPS and includes recycle flow rate. The total influent volume to the DWTF for 2022 is the lowest of the last six years.

**Table 2-7
Average Annual Flow Rate and Total Volume for 2017 through 2022**

Year	Total Precipitation at DTW (inches)	Average Flow Rate (cfs)			Total Flow Volume (MG)		
		Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle	Influent to DWTF	DWTF Including Recycle	DWTF Without Recycle
2017	35.46	73.54	80.28	-	17,350	18,940	-
2018	43.81	85.98	96.51	-	20,280	22,770	-
2019	36.38	87.36	92.29	-	20,610	21,770	-
2020	38.73	85.88	91.43	-	20,320	21,630	-
2021	39.99	83.96	85.86	81.15	19,810	20,250	19,140
2022	24.40	66.80	68.89	62.47	15,760	16,250	14,740
2017-2021 Average	38.87	83.34	89.27	-	19,670	21,070	-

Notes:

1. DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years DWTF with recycle flow is presented. DWTF Including Recycle = IPS + TPS. DWTF without Recycle = IPS + TPS – Recycle.

9. Figures 2-4 through 2-7 plots the quarterly average influent flow rate (interceptor system flow meters) to the DWTF versus the quarterly total precipitation at DTW for years 2013 through 2022. This figure shows the trend between precipitation and DSDS flow rates. The total precipitation at DTW for each quarter was below normal. The 2022 Q3 and Q4 precipitation were the lowest Q3 and Q4 of the past ten years. The influent flow rate to the DWTF was within the 95% confidence interval for the given precipitation.

Figure 2-4
Average Influent Flow Rate to DWTF versus Precipitation at DTW
Quarter 1 January – March for 2013 through 2022

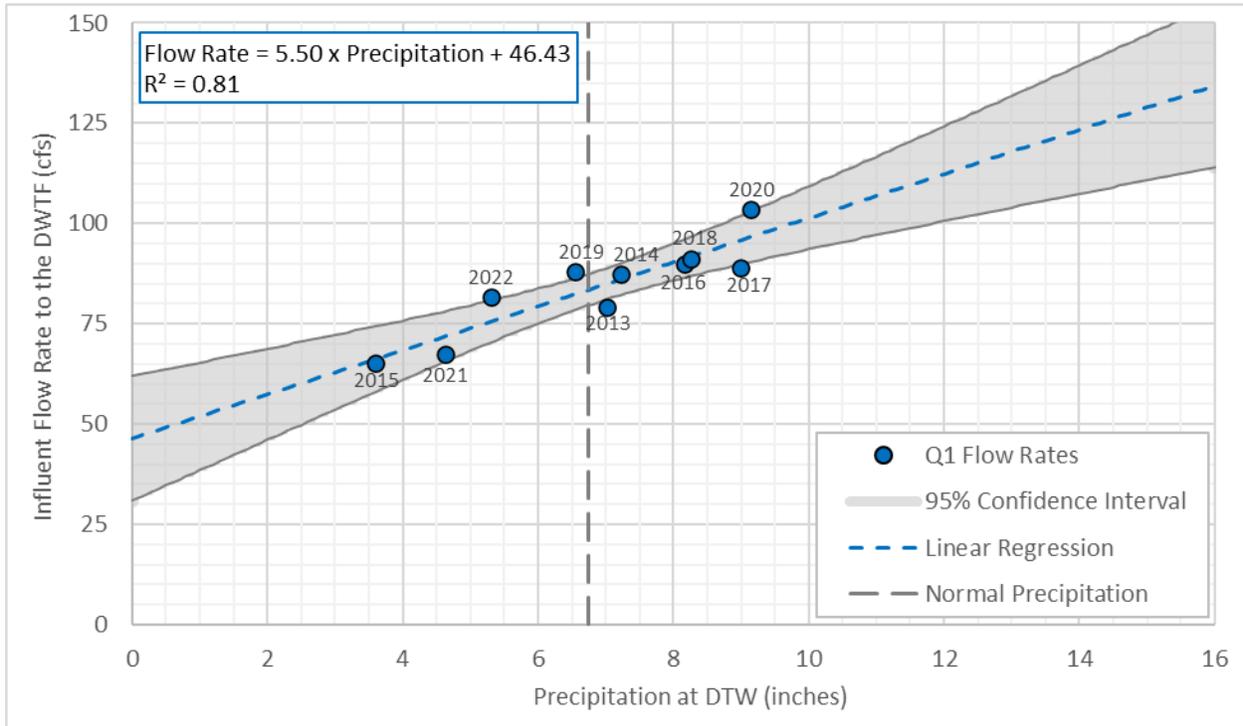


Figure 2-5
Average Influent Flow Rate to DWTF versus Precipitation at DTW
Quarter 2 April – June for 2013 through 2022

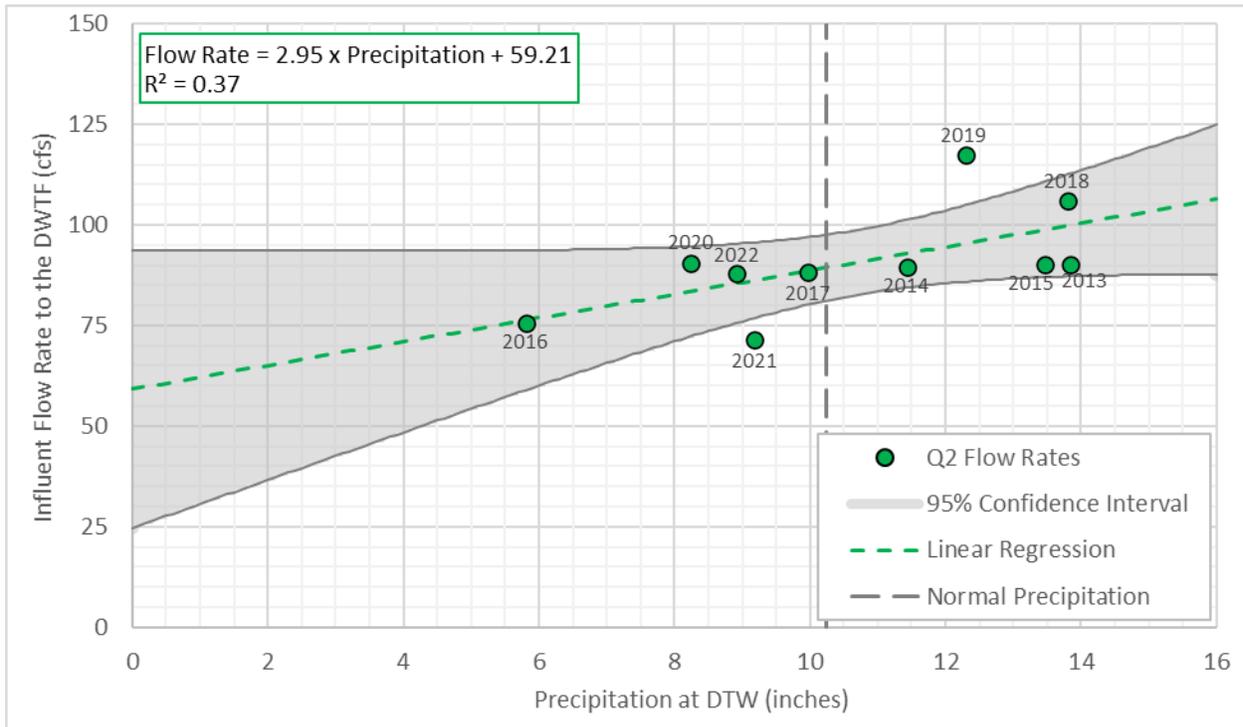


Figure 2-6
Average Influent Flow Rate to DWTF versus Precipitation at DTW
Quarter 3 July – September for 2013 through 2022

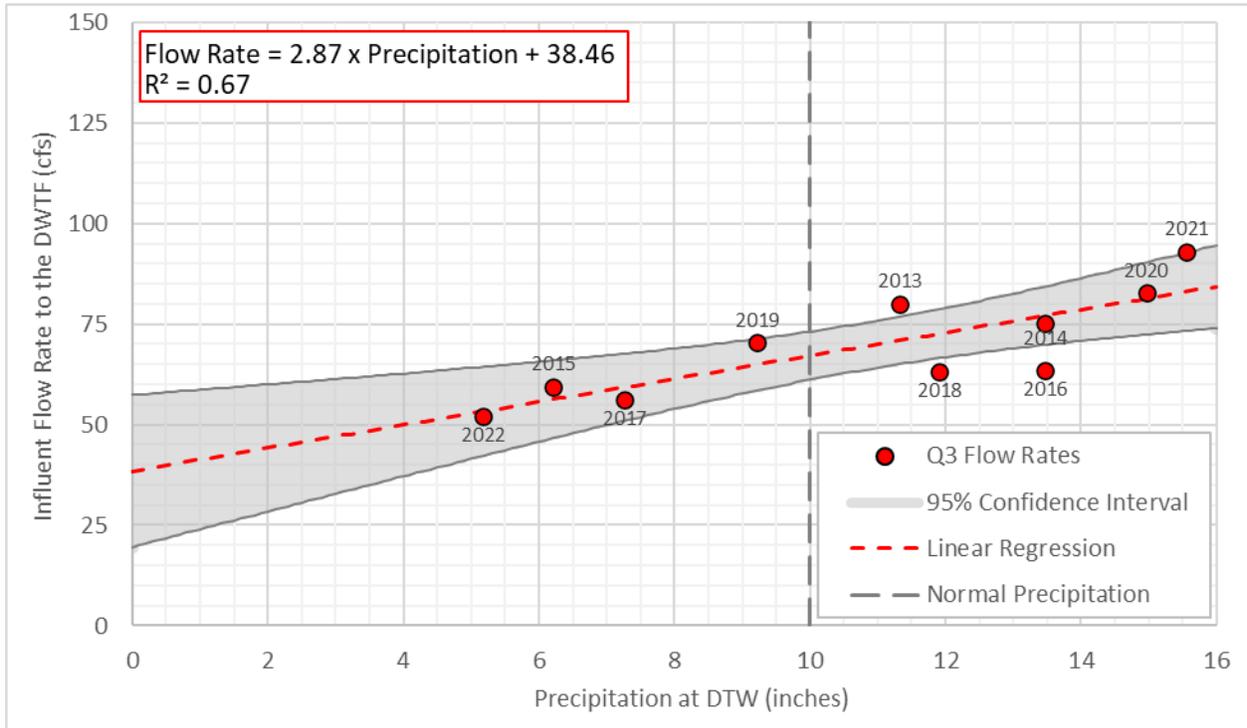
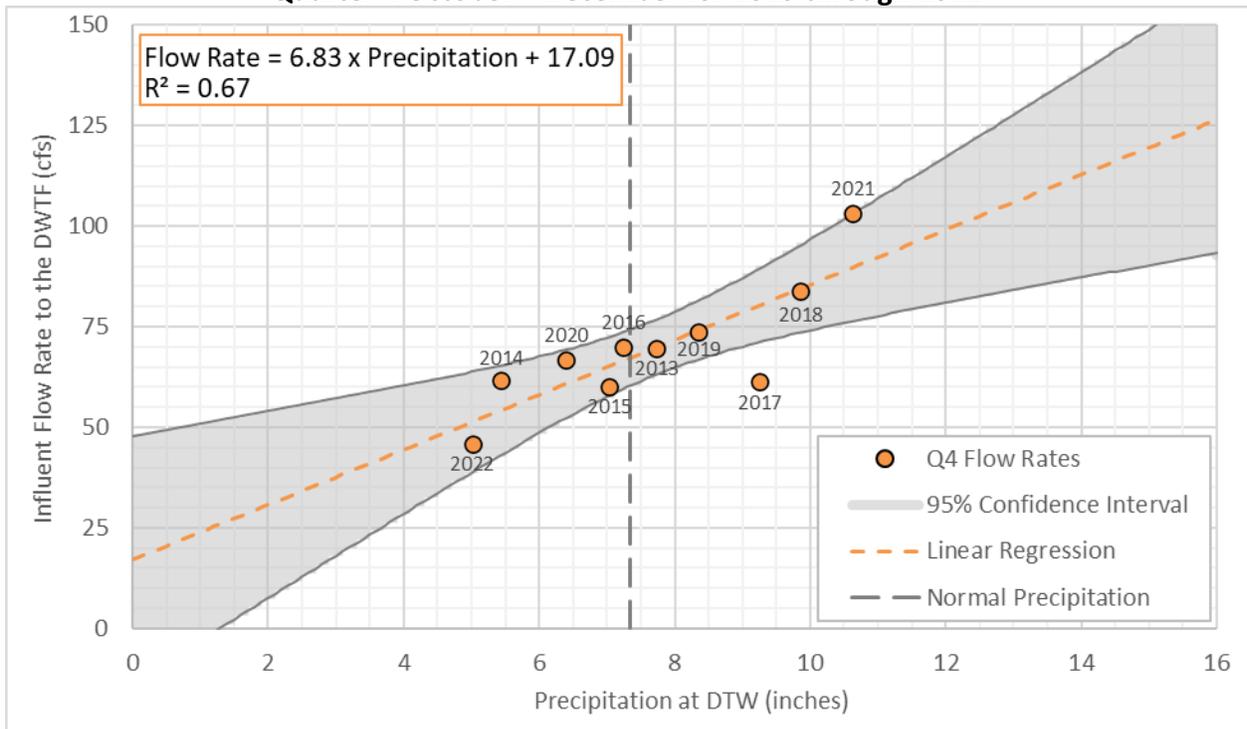


Figure 2-7
Average Influent Flow Rate to DWTF versus Precipitation at DTW
Quarter 4 October – December for 2013 through 2022



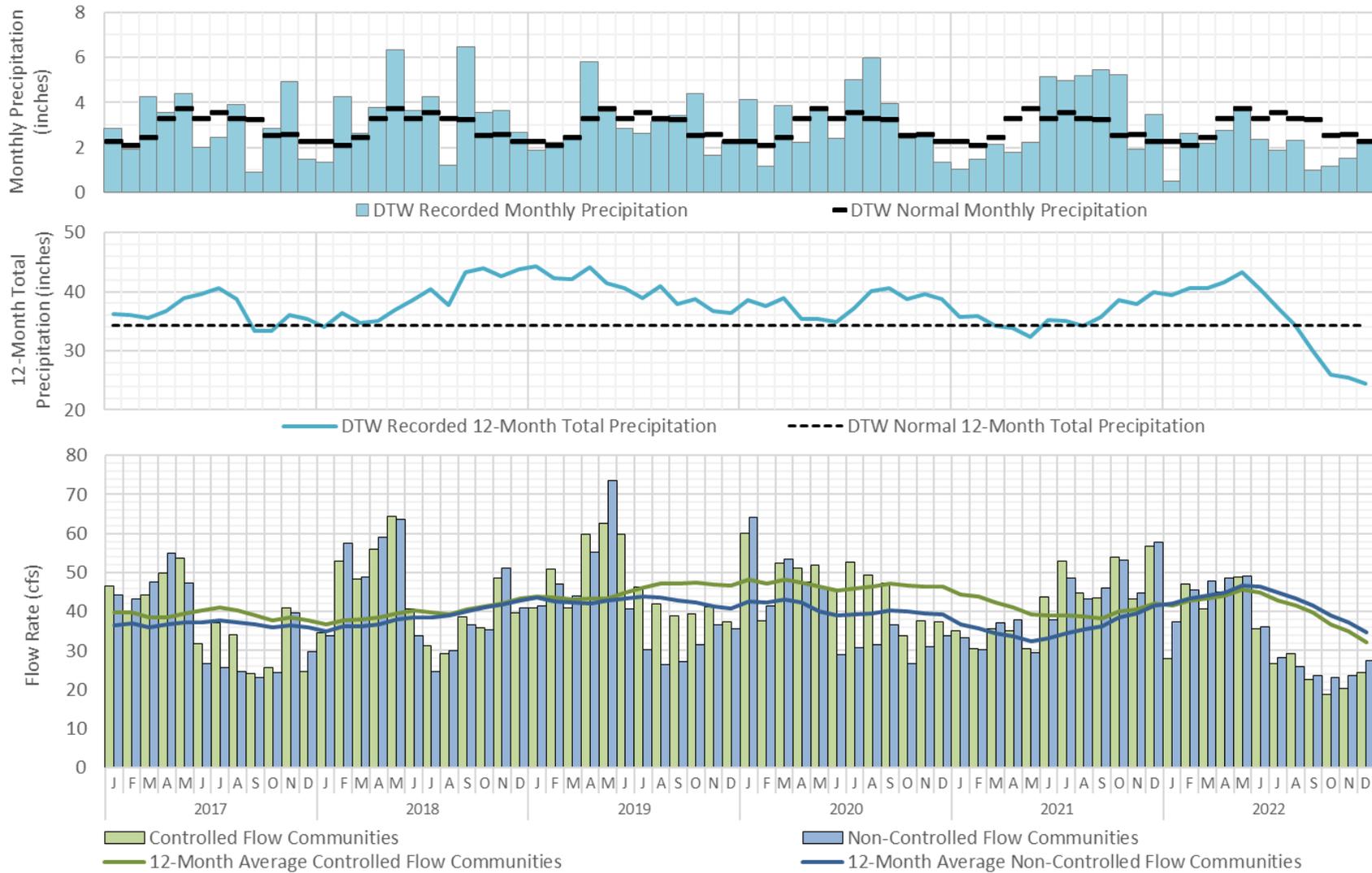
10. Figure 2-8 shows the long-term flow rate versus precipitation trends for the Controlled Flow Communities and Non-Controlled Flow Communities by month from 2017 through 2022. The flow rates are based on the interceptor system flow meters and the total precipitation is at DTW.

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 and the solid lines show the 12-month rolling average flow rate.

This figure shows the total flow contribution from the Controlled Flow Communities and Non-Controlled Flow Communities is generally about equal. From 2017 through 2021 the total flow contribution from the Controlled Flow Communities was about 52%, and from the Non-Controlled Flow Communities was about 48%. For 2022 the total flow contribution from the Controlled Flow Communities was about 48%, and from the Non-Controlled Flow Communities was about 52%.

11. For each community, the average Q1 through Q4 flow rate for years 2017 through 2022 are listed in Tables 2-8 through 2-11 and shown in Figures 2-9 through 2-12.
12. For each community, the average annual flow rate for years 2017 through 2022 are listed in Table 2-12 and shown in Figure 2-13. The differences between the 5-year average flow rates and 2022 annual average flow rates have been reviewed and confirmed.

Figure 2-8
Monthly Influent Flow Rate to DDTF versus Precipitation at DDTF for 2017 through 2022
by Controlled Flow and Non-Controlled Flow Communities



**Table 2-8
Average Q1 Flow Rate by Community for 2017 through 2022**

Community	Average Flow Rate (cfs)						2017-2021 Q1 Average Flow Rate (cfs)
	2017 Q1	2018 Q1	2019 Q1	2020 Q1	2021 Q1	2022 Q1	
Allen Park	7.11	8.81	7.55	9.30	4.70	6.81	7.49
Belleville	0.87	0.74	0.74	1.06	0.60	0.74	0.80
Brownstown Twp.	2.42	2.91	2.85	3.16	2.33	2.31	2.74
Dearborn Hts.	5.90	6.12	5.41	6.06	3.71	4.54	5.44
Ecorse	2.20	2.52	2.17	3.10	3.55	2.23	2.71
Lincoln Park	10.60	12.33	11.84	13.20	8.18	10.55	11.23
River Rouge	4.07	3.80	4.02	5.38	2.29	3.42	3.91
Riverview	2.95	3.22	2.88	3.40	2.61	2.76	3.01
Romulus	10.76	10.01	10.38	12.63	8.37	9.67	10.43
Southgate	12.01	11.63	11.48	13.48	9.12	10.22	11.54
Taylor	15.12	15.61	15.31	17.40	10.99	16.92	14.89
Van Buren Twp.	1.70	1.44	1.45	2.08	1.18	1.46	1.57
Wyandotte	13.14	12.16	12.08	13.37	9.85	10.14	12.12
Total Incoming Flow Rate	88.86	91.29	88.15	103.62	67.49	81.76	87.88
DWTF Including Recycle (IPS + TPS)	95.73	98.67	86.82	110.07	68.76	85.73	92.01
Total Precipitation DTW (inches) =	7.11	8.81	7.55	9.30	4.70	6.81	7.49

Note: DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years recycle flow has not been deducted from IPS+TPS data for 2020 through 2022.

**Table 2-9
Average Q2 Flow Rate by Community for 2017 through 2022**

Community	Average Flow Rate (cfs)						2017-2021 Q2 Average Flow Rate (cfs)
	2017 Q2	2018 Q2	2019 Q2	2020 Q2	2021 Q2	2022 Q2	
Allen Park	7.12	9.96	10.38	7.06	5.46	7.41	8.00
Belleville	0.85	0.84	0.93	0.75	0.70	0.74	0.81
Brownstown Twp.	2.26	3.17	3.02	2.58	2.41	2.43	2.69
Dearborn Hts.	6.15	6.42	6.62	4.74	3.82	4.88	5.55
Ecorse	2.46	2.94	2.76	3.34	3.16	2.74	2.93
Lincoln Park	11.01	14.22	15.18	11.43	9.05	11.58	12.18
River Rouge	4.29	5.61	6.81	6.48	2.98	3.84	5.23
Riverview	2.45	3.46	3.30	3.12	2.64	2.78	3.00
Romulus	10.97	13.43	14.54	10.19	9.22	10.72	11.67
Southgate	11.98	13.60	16.50	12.30	9.57	11.25	12.79
Taylor	13.70	16.27	18.40	13.22	10.74	16.39	14.47
Van Buren Twp.	1.66	1.65	1.82	1.47	1.38	1.45	1.60
Wyandotte	13.35	14.44	17.17	13.94	10.36	11.67	13.85
Total Incoming Flow Rate	88.26	106.03	117.43	90.64	71.50	87.87	94.77
DWTF Including Recycle (IPS + TPS)	96.14	121.62	126.62	98.25	73.52	92.00	103.23
Total Precipitation DTW (inches) =	9.96	13.80	12.29	8.23	9.18	8.91	10.69

Note: DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years recycle flow has not been deducted from IPS+TPS data for 2020 through 2022.

**Table 2-10
Average Q3 Flow Rate by Community for 2017 through 2022**

Community	Average Flow Rate (cfs)						2017-2021 Q3 Average Flow Rate (cfs)
	2017 Q3	2018 Q3	2019 Q3	2020 Q3	2021 Q3	2022 Q3	
Allen Park	4.36	4.99	5.73	7.11	8.63	3.98	6.16
Belleville	0.48	0.55	0.51	0.59	0.73	0.51	0.57
Brownstown Twp.	2.02	2.26	2.26	2.19	2.46	1.79	2.24
Dearborn Hts.	2.62	3.53	2.83	3.71	5.84	2.19	3.71
Ecorse	1.69	2.09	2.90	3.24	3.86	1.82	2.76
Lincoln Park	7.12	7.47	9.75	11.27	11.99	6.40	9.52
River Rouge	2.75	3.25	5.31	7.19	3.87	2.33	4.47
Riverview	1.76	2.04	2.14	2.96	3.02	1.77	2.38
Romulus	5.29	6.23	7.42	6.93	9.43	6.12	7.06
Southgate	8.50	9.19	9.90	11.43	13.17	7.11	10.44
Taylor	8.48	10.44	8.55	11.15	15.47	9.49	10.82
Van Buren Twp.	0.95	1.08	1.01	1.16	1.43	1.01	1.13
Wyandotte	10.23	10.08	12.03	13.79	13.18	7.65	11.86
Total Incoming Flow Rate	56.25	63.22	70.32	82.73	93.07	52.17	73.12
DWTF Including Recycle (IPS + TPS)	61.22	75.67	78.50	89.92	95.66	51.43	80.19
Total Precipitation DTW (inches) =	7.26	11.90	9.21	14.96	15.55	5.17	11.78

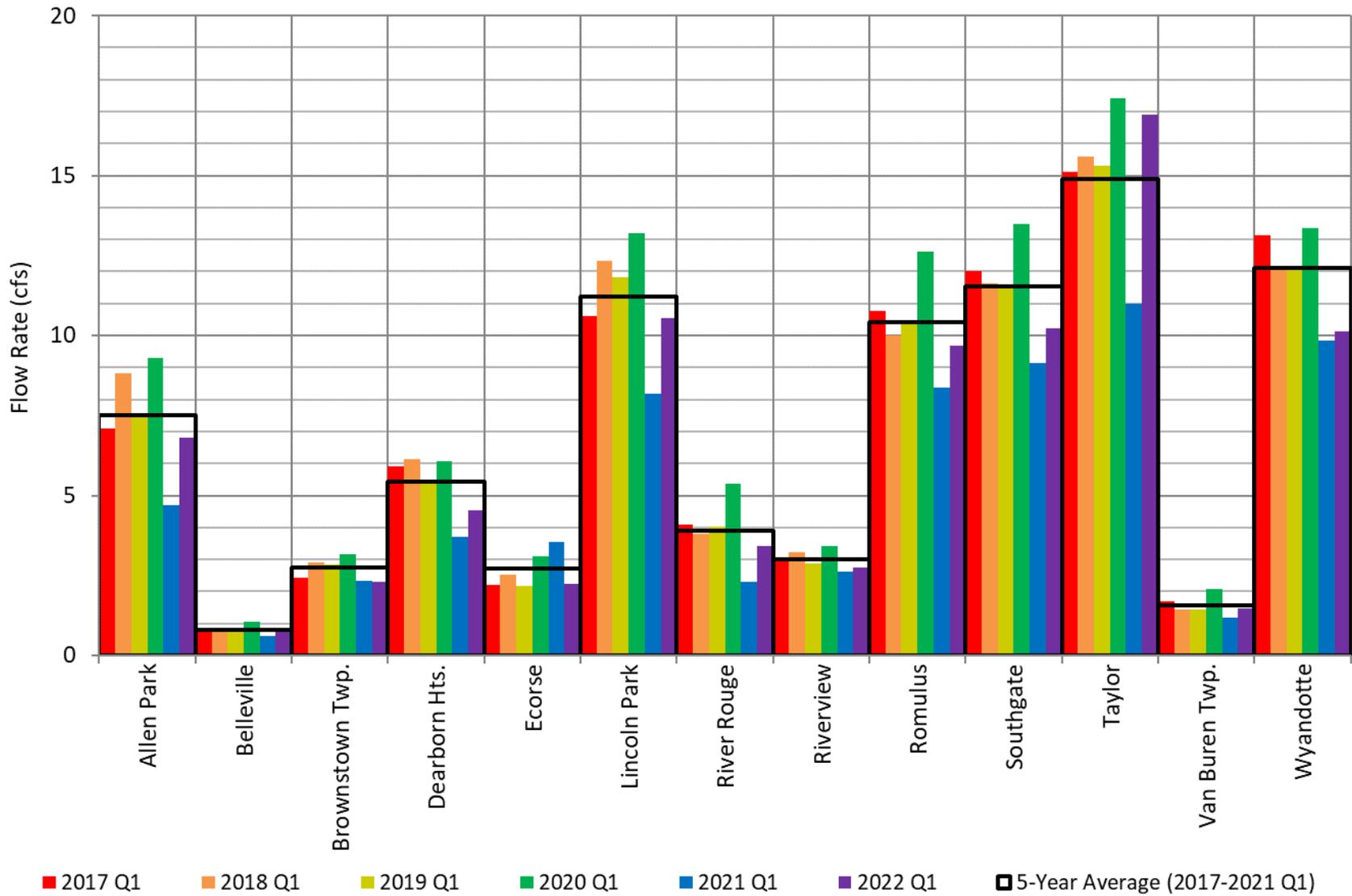
Note: DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years recycle flow has not been deducted from IPS+TPS data for 2020 through 2022.

**Table 2-11
Average Q4 Flow Rate by Community for 2017 through 2022**

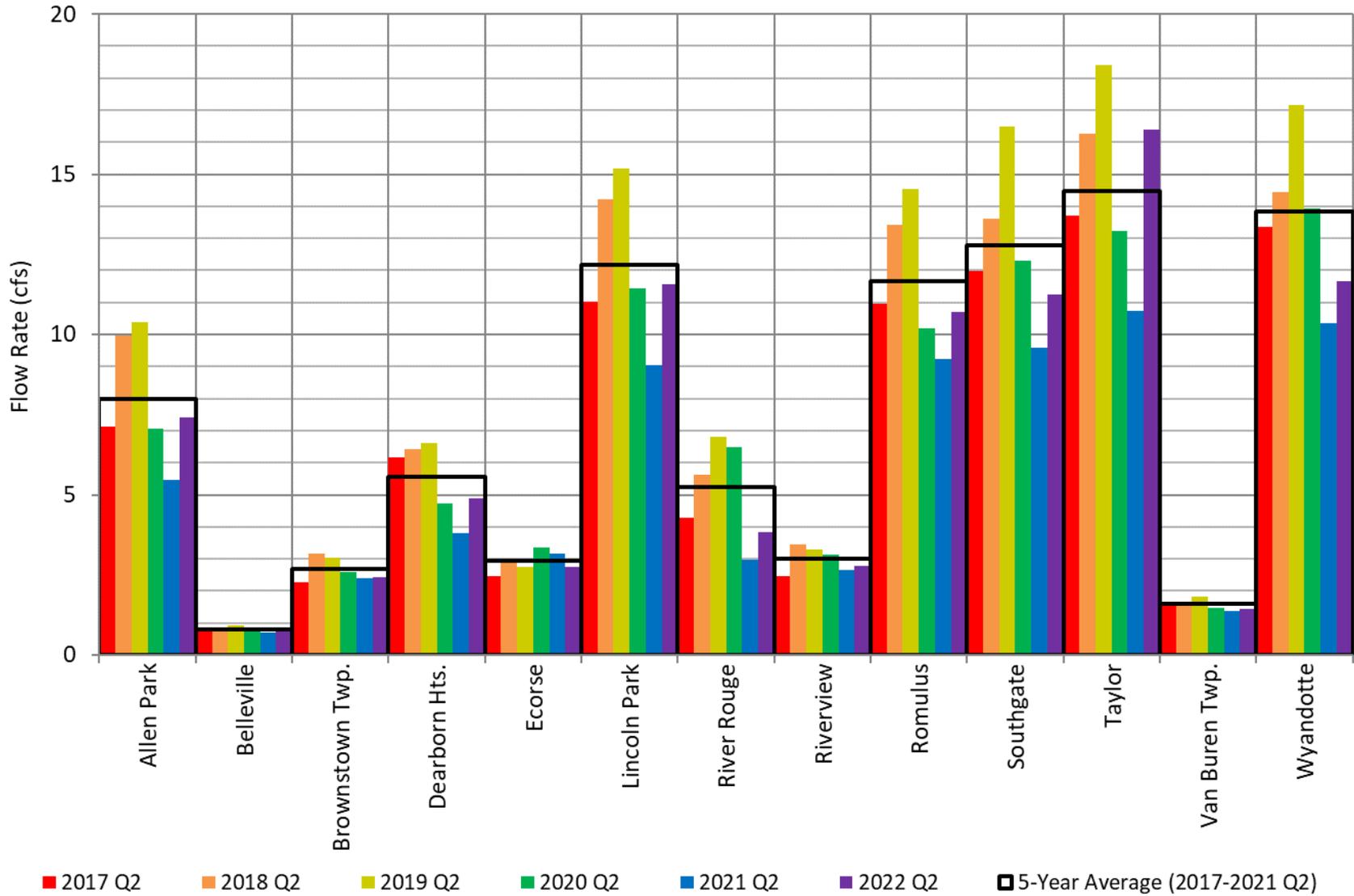
Community	Average Flow Rate (cfs)						2017-2021 Q4 Average Flow Rate (cfs)
	2017 Q4	2018 Q4	2019 Q4	2020 Q4	2021 Q4	2022 Q4	
Allen Park	4.67	7.49	6.48	5.17	8.96	3.45	6.55
Belleville	0.52	0.73	0.61	0.53	0.78	0.42	0.64
Brownstown Twp.	2.27	2.70	2.48	2.19	3.00	1.62	2.53
Dearborn Hts.	3.48	5.62	3.84	3.22	6.62	2.05	4.56
Ecorse	1.76	2.16	2.00	2.48	3.24	1.19	2.33
Lincoln Park	7.21	11.49	10.32	8.62	13.39	5.36	10.21
River Rouge	2.27	3.35	3.80	3.20	4.43	2.11	3.41
Riverview	2.19	2.92	2.59	2.70	3.50	1.74	2.78
Romulus	7.22	9.99	8.61	7.15	11.27	5.93	8.85
Southgate	8.60	10.61	9.81	9.41	13.71	5.99	10.43
Taylor	10.71	14.04	11.25	10.18	18.48	9.29	12.93
Van Buren Twp.	1.03	1.43	1.20	1.05	1.53	0.82	1.25
Wyandotte	9.38	11.19	10.88	10.87	14.37	5.99	11.34
Total Incoming Flow Rate	61.30	83.73	73.88	66.78	103.27	45.94	77.79
DWTF Including Recycle (IPS + TPS)	68.56	90.38	77.49	67.74	104.99	47.01	81.83
Total Precipitation DTW (inches) =	9.25	9.85	8.34	6.40	10.63	5.01	8.89

Note: DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years recycle flow has not been deducted from IPS+TPS data for 2020 through 2022.

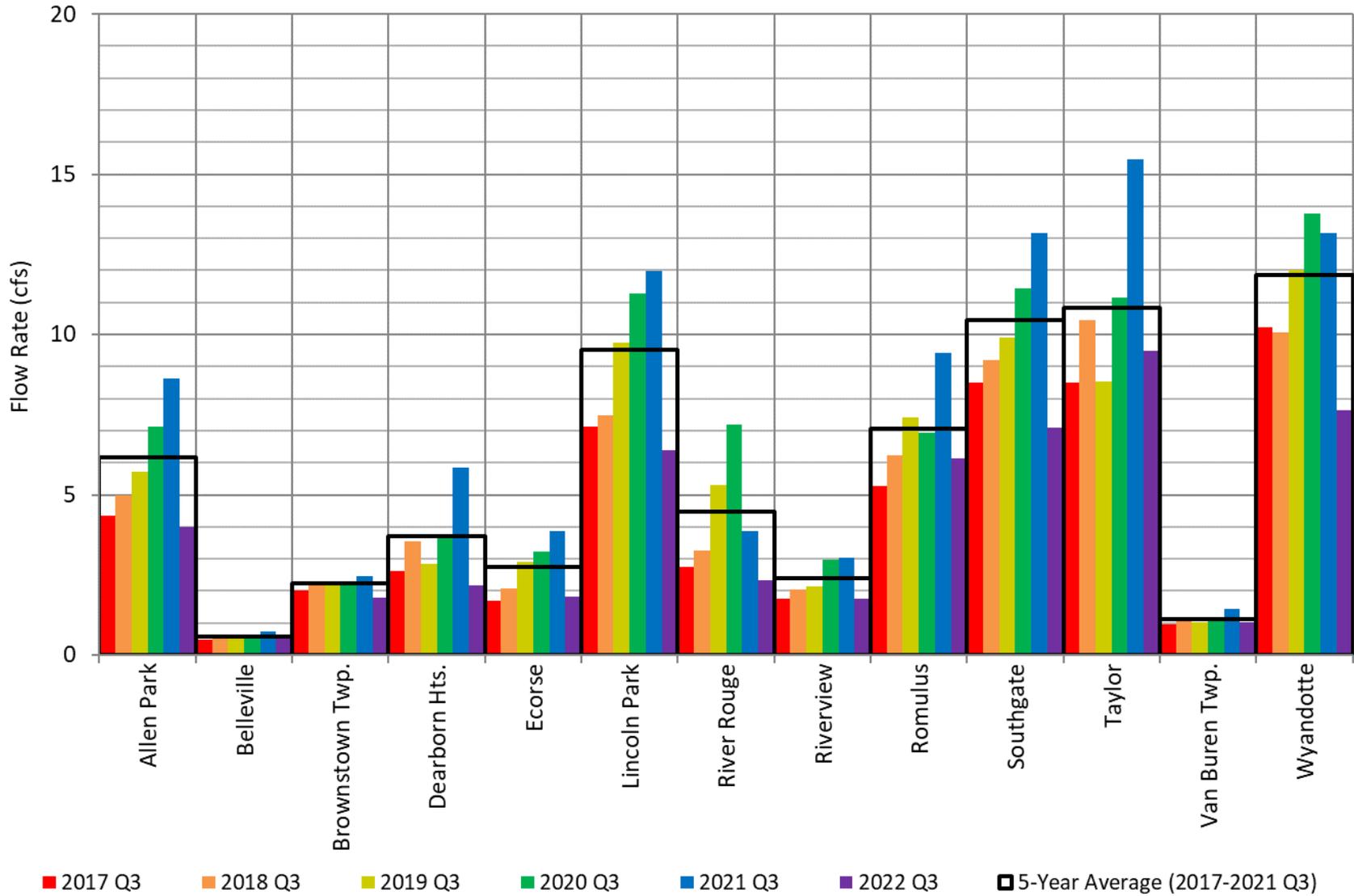
**Figure 2-9
Average Q1 Flow Rate by Community for 2017 through 2022**



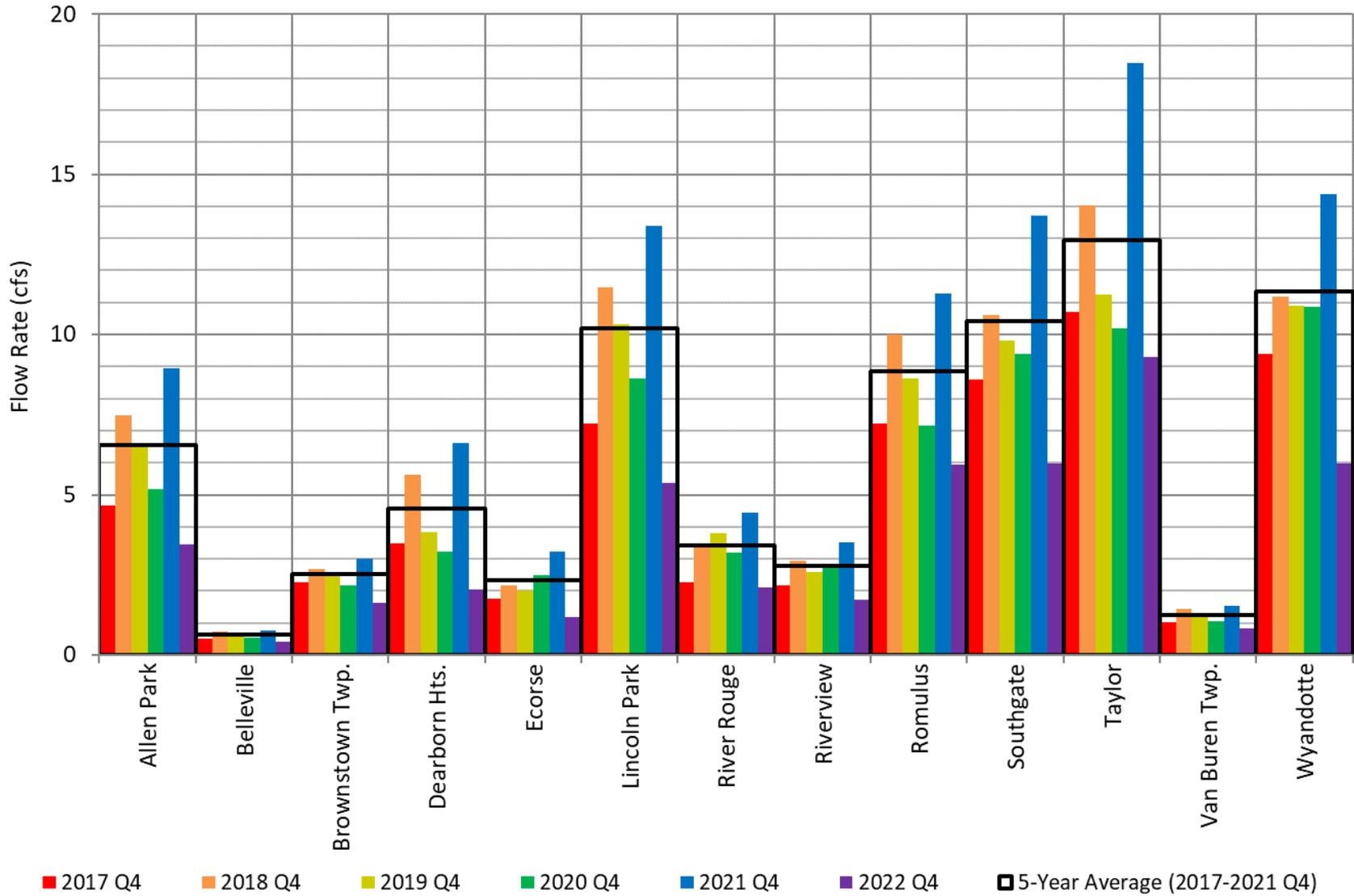
**Figure 2-10
Average Q2 Flow Rate by Community for 2017 through 2022**



**Figure 2-11
Average Q3 Flow Rate by Community for 2017 through 2022**



**Figure 2-12
Average Q4 Flow Rate by Community for 2017 through 2022**

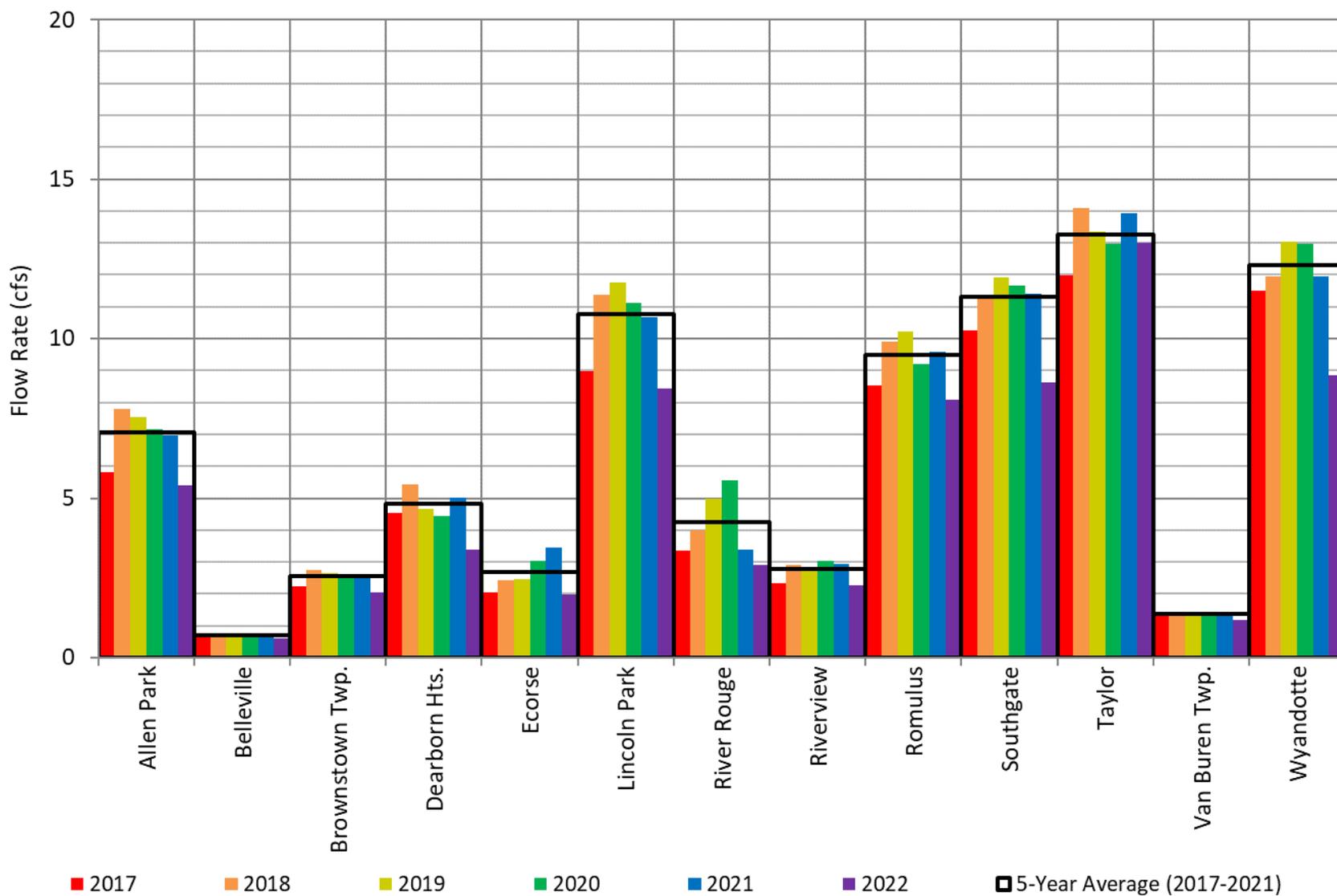


**Table 2-12
Average Annual Flow Rate by Community for 2017 through 2022**

Community	Average Flow Rate (cfs)						2017-2021 Average Flow Rate (cfs)
	2017	2018	2019	2020	2021	2022	
Allen Park	5.80	7.80	7.53	7.15	6.96	5.40	7.05
Belleville	0.68	0.71	0.70	0.73	0.70	0.60	0.71
Brownstown Twp.	2.24	2.76	2.65	2.53	2.55	2.04	2.55
Dearborn Hts.	4.53	5.42	4.67	4.43	5.01	3.40	4.81
Ecorse	2.03	2.43	2.46	3.04	3.45	1.99	2.68
Lincoln Park	8.97	11.36	11.76	11.12	10.67	8.45	10.78
River Rouge	3.34	4.00	4.98	5.56	3.40	2.92	4.26
Riverview	2.33	2.91	2.72	3.05	2.95	2.26	2.79
Romulus	8.54	9.91	10.23	9.21	9.58	8.09	9.49
Southgate	10.26	11.25	11.91	11.65	11.41	8.62	11.30
Taylor	11.98	14.08	13.35	12.98	13.94	12.99	13.27
Van Buren Twp.	1.33	1.40	1.37	1.44	1.38	1.18	1.38
Wyandotte	11.51	11.96	13.03	12.99	11.96	8.85	12.29
Total Incoming Flow Rate	73.54	85.98	87.36	85.88	83.96	66.80	83.34
DWTF Including Recycle (IPS + TPS)	80.28	96.51	92.29	91.43	85.86	68.89	89.27
Total Precipitation DTW (inches) =	35.46	43.81	36.38	38.73	39.99	24.40	38.87

Note: DWTF recycle flows have been metered since April 2020. To provide a consistent comparison to previous years recycle flow has not been deducted from IPS+TPS data for 2020 through 2022.

Figure 2-13
Average Annual Flow Rate by Community for 2017 through 2022



13. Interceptor inflow and infiltration has not been estimated and deducted from community flow rates.
14. Reverse flow at Meter SW occurs as hydraulically necessary for emergency operating conditions and/or storms greater than the design storm. Table 2-13 lists the estimated volume of reverse flow through Meter SW for the significant storm events in 2022. No reverse flow through Meter SW was estimated to have occurred for Significant Storm Events in 2022.
15. The DWTF primary and secondary treatment capacities are 150 and 137 MGD, respectively. The peak flow rate capacity of the DWTF is 237 MGD, with flow blending occurring at flow rates greater than 137 MGD. Under peak wet weather flow conditions, about 50 MGD receives both primary and secondary treatment, 100 MGD receives primary treatment only, and 87 MGD receives secondary treatment only. Table 2-13 lists the total volumes which bypassed primary and secondary treatment for each significant storm event. There was no bypass for Significant Storm Events in 2022.

Table 2-13
DWTF Primary and Secondary Treatment Bypass and Reverse Flow through Meter SW for Significant Storm Events for 2022

Major Storm Event	Significant Storm Event	Event Dates	Bypass of Primary Treatment (MG)	Bypass of Secondary Treatment (MG)	Reverse Flow through Meter SW (MG)
-	1	2/16-18/2022	0	0	0
-	2	5/15-16/2022	0	0	0
-	3	6/6-7/2022	0	0	0
-	4	8/3-4/2022	0	0	0
-	5	11/27/2022	0	0	0
-	6	12/30-31/2022	0	0	0
Total			0	0	0

C) CONTROLLED FLOW COMMUNITIES OVERVIEW

1. The controlled flow communities are tributary to the Riverdrive Interceptor. Peak flow rates regulated to the MAFLs promote good performance of the Riverdrive Interceptor without surcharging at the monitoring locations. The peak hourly flow rates and peak depths for the flow meters along the Riverdrive Interceptor for the significant storm events are listed in Table 2-14. The total wet weather MAFLs are also given and are used to check whether the incoming flow rates are being regulated properly. The total wet weather MAFLs at the flow meter locations are the sum of the MAFLs for the upstream communities.

Flow rates above the MAFL which occur after the peak of the storm event during dewatering operations of the Lincoln Park equalization basin or the Southgate Wyandotte Relief Drains Drainage District (SWRDDD) Combined Sewer Overflow (CSO) Retention Treatment Basin (RTB), and were coordinated with Veolia to minimize bypass operations at the DWTF and discharges to the Detroit River from SWRDDD, are not considered an exceedance.

**Table 2-14
Peak Hourly Flow Rates and Depth for Controlled Flow Communities
along the Riverdrive Interceptor for Significant Storms Events for 2022**

Major Storm Event	Significant Storm Event	Peak Hourly Flow Rate (cfs)				Peak Depth (ft)			
		RR-1	EC-6	RD-1	SW+SWB	RR-1	EC-6	RD-1	SW
-	1	11.97	26.15	62.07	42.40	3.2	7.9	7.0	11.2
-	2	10.98	21.47	58.29	51.19	2.7	6.2	6.0	10.4
-	3	10.93	25.77	62.18	41.16	2.7	7.4	6.2	9.4
-	4	9.70	13.06	48.54	45.90	2.1	3.5	3.1	10.0
-	5	12.66	19.34	53.88	37.51	2.7	5.5	5.0	10.4
-	6	12.11	21.57	78.55	62.85	2.6	4.9	- ¹	9.7
Total MAFL (cfs)		11.26	23.46	65.82	31.73				
Pipe Diameter (ft)						3.0	4.5	6.0	6.5
Manhole Depth (ft)						16.0	24.8	27.2	40.0

Legend:

XX.XX	Exceeds wet weather MAFL by 0 to 5%
XX.XX	Exceeds wet weather MAFL by > 5%
XX.XX	Exceeds wet weather MAFL, coordinated with Veolia
XX.XX	Wastewater level exceeded sewer crown

Notes: 1) Meter RD-1 was out-of-service for Significant Storm Event 6.

2. The peak hourly flow rates at Meter RD-1 were below the total wet weather MAFL for five significant storm events and exceeded the MAFL for one significant storm event in 2022. Flow meter RD-1 was out-of-service for Significant Storm Event 6 and the flow rate was estimated. These metrics indicate good performance of the Riverdrive Interceptor for the significant storm events in 2022.

3. The peak hourly flow rate at Meter SW was above the total wet weather MAFL during the six significant storm events. However, the flow limit exceedances were operational decisions by Veolia to minimize discharges to the Detroit River from the SWRDDD.
4. Incremental flow rates are estimated for storm events when the metered peak hourly flow rate exceeded the MAFL by 5% or more. Table 2-15 lists the estimated incremental peak hourly flow rates for the flow meters along the Riverdrive Interceptor for these storm events. Incremental flow rates are used to check whether the incoming flow rates are being regulated properly.

Table 2-15
Estimated Incremental Peak Hourly Flow Rates for Controlled Flow Communities
along the Riverdrive Interceptor for Significant Storms Events for 2022

Major Storm Event	Significant Storm Event	Incremental Peak Hourly Flow Rate (cfs)			
		RR-1	EC-6	RD-1	SW+SWB
-	1	11.97	15.04	41.98	42.40
-	2	10.98	11.36	45.46	51.19
-	3	10.93	18.52	45.38	41.16
-	4	9.70	5.23	43.99	45.90
-	5	12.66	12.21	37.03	37.51
-	6	12.11	9.99	57.27	62.85
Incremental MAFL (cfs)		11.26	12.20	42.36	31.73

Legend:

XX.XX	Exceeds wet weather MAFL by 0 to 5%
XX.XX	Exceeds wet weather MAFL by > 5%
XX.XX	Exceeds wet weather MAFL coordinated with Veolia

5. The Meter RR-1 district includes all of River Rouge. Wastewater from River Rouge is pumped from the River Rouge CSO RTB to the Riverdrive Interceptor. No flow meter exists on the pump station discharge pipe. The pumps are operated to maintain a maximum level in the Riverdrive Interceptor immediately downstream of the River Rouge CSO RTB. This sometimes results in an exceedance of the MAFL. The flow rates estimated for the Meter RR-1 district exceeded the MAFL for three of the six significant storm events in 2022.
6. The Meter EC-6 district includes all of Ecorse and a portion of Lincoln Park. The district has three connection points from Ecorse which flow by gravity and have orifice plates installed to regulate the flow rates. The district has two connection points from Lincoln Park. The larger connection flows by gravity and has a vortex valve installed to regulate the flow rate into the Riverdrive Interceptor, and the smaller connection serves the Libra Hospital of Southeastern Michigan on Outer Drive. The incremental flow rates estimated for the Meter EC-6 district exceeded the MAFL for three of the six significant storm events in 2022.

7. The Meter RD-1 district includes most of the portion of Allen Park served by DUWA (the northern portion of Allen Park is served by GLWA) and most of Lincoln Park. Flow from a portion of Allen Park flows through Lincoln Park to the Riverdrive Interceptor. The district has three connection points from Lincoln Park which flow by gravity and have either an orifice plate or vortex valve installed to regulate the flow rates. The Lincoln Park equalization basin dewatering pipe is controlled via a ball valve to regulate the flow rate into the Riverdrive Interceptor. Flow rates above the MAFL which occur after the peak of the storm event during dewatering operations of the Lincoln Park equalization basin, and were coordinated with Veolia to minimize bypass operations at the DWTF, are not considered an exceedance. The incremental flow rates estimated for the Meter RD-1 district exceeded the MAFL for four of the six significant storm events in 2022.
8. The Meter SW district serves the SWRDDD. The SWRDDD is a combined sewer area that includes part of Southgate and all of Wyandotte. Veolia coordinates operations of the SWRDDD facilities and the DWTF to minimize bypass of secondary treatment at the DWTF and discharges to the Detroit River from SWRDDD. As previously discussed, the peak hourly flow rate at Meter SW was above the total wet weather MAFL for all six significant storm events in 2022. However, the flow limit exceedances were operational decisions by Veolia to minimize discharges to the Detroit River from the SWRDDD. Therefore, SWRDDD had permission to exceed its MAFL for these events.

D) NON-CONTROLLED FLOW COMMUNITIES OVERVIEW

1. The non-controlled flow communities are tributary to both the Pennsylvania Interceptor system and the Downriver Regional Storage and Transport System (DRSTS) and have allowable peak 96-hour volumes that were established for the 4.42-inch design storm. There were no major storm events in 2022. The estimated peak 96-hour total volumes for the 2022 major storm events are listed in Table 2-16.

**Table 2-16
Peak 96-Hour Total Volumes for Non-Controlled Flow Communities
for Major Storms Events for 2022**

Community	Total Volume (MG)	
	4.42 inch Design Storm	No Major Storm Events
Allen Park (part)	29.23	-
Belleville	4.86	-
Brownstown Twp.	20.90	-
Dearborn Heights	43.76	-
Riverview	28.30	-
Romulus	88.43	-
Southgate (part)	31.24	-
Taylor	164.45	-
Van Buren Twp.	7.04	-
Total	418.21	-

Legend:

XX.XX	Exceeds design storm volume by 0 to 20%
XX.XX	Exceeds design storm volume by > 20%

2. Monitoring devices indicated no issues with the DRSTS performance during all storm events for 2022.

3. Table 2-17 lists the monitored overflow structures which overflowed to the DRSTS for each significant storm event in 2022. At least one of the overflow structures overflowed into the DRSTS during each of the significant storm events in 2022.

**Table 2-17
Downriver Regional Storage and Transport System Usage
for Significant Storm Events for 2022**

Major Storm Event	Significant Storm Event	Event Dates	Meter									
			TPS	TSO	CHPO	CPO	PDO	ER-2	ER-1	APO-2	APO-1	PM-1
-	1	2/16-18/2022	✓	✓	✓	✓	x	✓	✓	✓	✓	x
-	2	5/15-16/2022	✓	x	✓	✓	x	x	x	✓	✓	x
-	3	6/6-7/2022	✓	✓	✓	✓	x	x	x	x	x	x
-	4	8/3-4/2022	✓	x	✓	✓	x	x	x	✓	✓	x
-	5	11/27/2022	✓	x	✓	x	x	x	x	x	x	x
-	6	12/30-31/2022	✓	x	✓	x	x	x	x	x	x	x
Number of Overflow Events			6/6	2/6	6/6	4/6	0/6	1/6	1/6	3/6	3/6	0/6

Legend:

✓	Discharge to DRSTS
x	No discharge to DRSTS

4. Figures 2-14 and 2-15 plot the total 96-hour volume for the non-controlled flow communities versus precipitation for the major storm events from 2013 through 2022. Figure 2-14 shows the growing season events (those that occurred between May 1st and September 30th), and Figure 2-15 shows the non-growing season events (those that occurred between October 1st and April 30th). The 4.42-inch design storm volume is shown for comparison. There are no major storm events in 2022.

Figure 2-14
Total 96-Hour Volume for the Non-Controlled Flow Communities for Major Storms Events
Growing Season from 2013 through 2022

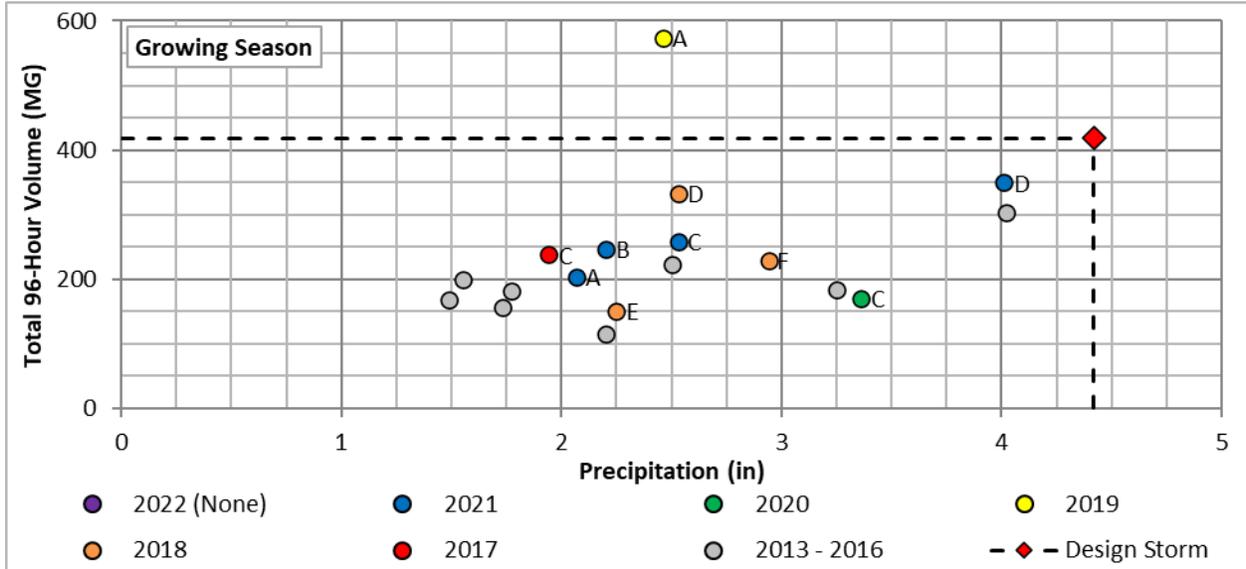
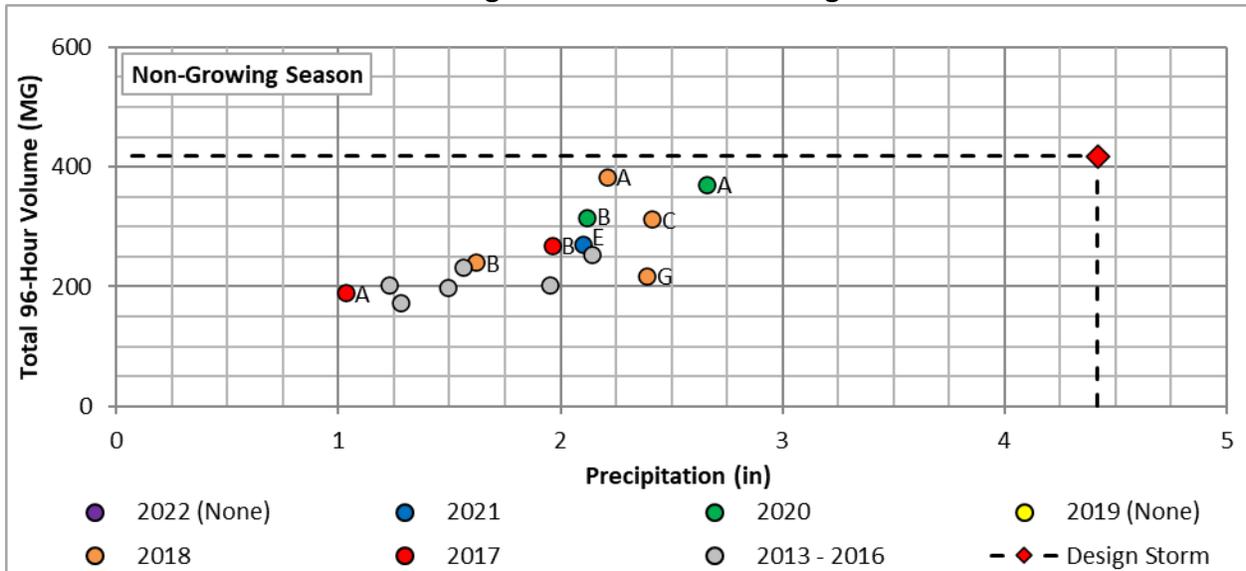


Figure 2-15
Total 96-Hour Volume for the Non-Controlled Flow Communities for Major Storms Events
Non-Growing Season from 2013 through 2022



5. The non-controlled flow communities have dry weather MAFLs. The portion of Meter District PA-2 in Taylor was estimated to have exceeded its proportion of the total Taylor dry weather MAFL for January through June and October through December 2022. No portion of any other meter district was estimated to have exceeded its dry weather MAFL for any month in 2022. No community was estimated to have exceeded its dry weather MAFL on a total community basis for any month.

3) SUMMARY BY COMMUNITY

Table 3-1 presents the estimated average monthly flow rate for each community in the DSDS for each month in 2022. The average monthly flow rate includes all days – both dry and wet weather. Table 3-1 also shows the percentages for each community of the incoming flow rate to the DWTF. The estimated average monthly flow rates are plotted on Figure 3-1, and the percentages are plotted on Figure 3-2.

The incoming flow rate to the DWTF is based on the interceptor system flow meters. It is given on Table 3-1 along with the average monthly influent pumping rate at the DWTF. The DWTF influent pumping rate includes recycle flow rates where the incoming flow rate measured by the interceptor system meters does not include DWTF recycle flow rates. Therefore, it is expected that the incoming flow rate measured by the sum of the interceptor system meters will be slightly less than the DWTF influent flow rate.

DWTF recycle flows have been metered since April 2021. To provide a consistent comparison to previous years, the table presents the IPS and TPS data with and without the recycle flow deducted.

The average monthly flow rates are subtotaled for controlled flow communities and for non-controlled flow communities. Tables 3-2 and 3-3 provide the breakdown of average monthly flow rates for controlled flow communities and non-controlled flow communities, respectively.

**Table 3-1
Average Monthly Flow Rates by Community for 2022**

Community	Flow Rate (cfs)												Average Annual
	January	February	March	April	May	June	July	August	September	October	November	December	
Allen Park	4.74	8.52	7.33	8.20	8.18	5.81	3.91	4.48	3.55	3.01	3.25	4.09	5.40
Belleville	0.67	0.73	0.83	0.82	0.79	0.60	0.52	0.51	0.51	0.42	0.38	0.45	0.60
Brownstown Twp.	2.06	2.23	2.63	2.55	2.54	2.19	1.86	1.84	1.68	1.61	1.56	1.67	2.04
Dearborn Hts.	3.50	5.07	5.10	5.53	5.36	3.72	2.27	2.26	2.02	1.76	1.98	2.40	3.40
Ecorse	1.93	2.21	2.54	2.72	2.94	2.56	2.02	1.93	1.49	1.12	1.20	1.28	1.99
Lincoln Park	7.37	13.00	11.51	12.34	12.94	9.41	6.35	7.14	5.67	4.66	5.06	6.35	8.45
River Rouge	2.78	3.95	3.58	3.86	4.27	3.38	2.48	2.43	2.09	1.86	1.94	2.49	2.92
Riverview	2.27	3.17	2.89	2.92	3.03	2.39	2.04	1.75	1.51	1.56	1.69	1.96	2.26
Romulus	8.80	9.38	10.79	11.25	12.50	8.35	7.50	5.84	5.00	5.39	5.22	7.15	8.09
Southgate	8.04	12.00	10.78	11.83	12.70	9.15	7.38	7.70	6.20	5.45	5.83	6.68	8.62
Taylor	14.47	18.09	18.31	18.01	17.64	13.48	9.74	9.53	9.18	8.90	9.29	9.67	12.99
Van Buren Twp.	1.31	1.43	1.63	1.61	1.55	1.18	1.02	1.00	1.01	0.82	0.75	0.88	1.18
Wyandotte	7.45	12.86	10.38	12.05	13.45	9.45	7.83	8.61	6.47	5.33	5.87	6.75	8.85
Subtotal Controlled Flow Communities	27.97	47.12	40.58	45.03	48.79	35.55	26.71	29.12	22.66	18.72	20.37	24.46	32.15
Subtotal Non-Controlled Flow Communities	37.41	45.54	47.72	48.68	49.10	36.13	28.20	25.90	23.71	23.18	23.66	27.36	34.65
Total Incoming Flow Rate	65.38	92.66	88.30	93.71	97.90	71.68	54.92	55.02	46.37	41.90	44.03	51.82	66.80
DWTF Including Recycle (IPS + TPS)	66.07	98.45	93.91	98.39	105.25	71.92	52.48	55.92	45.71	42.15	45.36	53.46	68.89
DWTF without Recycle (IPS + TPS - Recycle)	58.86	89.07	86.31	89.66	93.52	65.81	47.82	51.29	41.54	38.06	40.13	49.69	62.47
Recycle	7.21	9.37	7.60	8.73	11.73	6.11	4.66	4.62	4.18	4.10	5.23	3.78	6.42
Total Precipitation DTW (inches)	0.52	2.61	2.18	2.75	3.81	2.35	1.86	2.32	0.99	1.15	1.52	2.34	24.40
Normal Precipitation at DTW (inches)	2.23	2.08	2.43	3.26	3.72	3.26	3.51	3.26	3.22	2.53	2.57	2.25	34.32
Departure from Normal (inches)	-1.71	+0.53	-0.25	-0.51	+0.09	-0.91	-1.65	-0.94	-2.23	-1.38	-1.05	+0.09	-9.92

Percentage of Total Incoming Flow Rate by Community for 2022

Community	January	February	March	April	May	June	July	August	September	October	November	December	Average Annual
Allen Park	7.3%	9.2%	8.3%	8.8%	8.4%	8.1%	7.1%	8.1%	7.7%	7.2%	7.4%	7.9%	7.9%
Belleville	1.0%	0.8%	0.9%	0.9%	0.8%	0.8%	0.9%	0.9%	1.1%	1.0%	0.9%	0.9%	0.9%
Brownstown Twp.	3.2%	2.4%	3.0%	2.7%	2.6%	3.1%	3.4%	3.3%	3.6%	3.8%	3.5%	3.2%	3.2%
Dearborn Hts.	5.4%	5.5%	5.8%	5.9%	5.5%	5.2%	4.1%	4.1%	4.3%	4.2%	4.5%	4.6%	4.9%
Ecorse	3.0%	2.4%	2.9%	2.9%	3.0%	3.6%	3.7%	3.5%	3.2%	2.7%	2.7%	2.5%	3.0%
Lincoln Park	11.3%	14.0%	13.0%	13.2%	13.2%	13.1%	11.6%	13.0%	12.2%	11.1%	11.5%	12.3%	12.4%
River Rouge	4.3%	4.3%	4.0%	4.1%	4.4%	4.7%	4.5%	4.4%	4.5%	4.4%	4.4%	4.8%	4.4%
Riverview	3.5%	3.4%	3.3%	3.1%	3.1%	3.3%	3.7%	3.2%	3.3%	3.7%	3.8%	3.8%	3.4%
Romulus	13.5%	10.1%	12.2%	12.0%	12.8%	11.6%	13.7%	10.6%	10.8%	12.9%	11.9%	13.8%	12.2%
Southgate	12.3%	13.0%	12.2%	12.6%	13.0%	12.8%	13.4%	14.0%	13.4%	13.0%	13.2%	12.9%	13.0%
Taylor	22.1%	19.5%	20.7%	19.2%	18.0%	18.8%	17.7%	17.3%	19.8%	21.2%	21.1%	18.7%	19.5%
Van Buren Twp.	2.0%	1.5%	1.8%	1.7%	1.6%	1.6%	1.9%	1.8%	2.2%	2.0%	1.7%	1.7%	1.8%
Wyandotte	11.4%	13.9%	11.7%	12.9%	13.7%	13.2%	14.3%	15.7%	13.9%	12.7%	13.3%	13.0%	13.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Figure 3-1
Total Incoming Flow Rate to the DWTF for 2022**

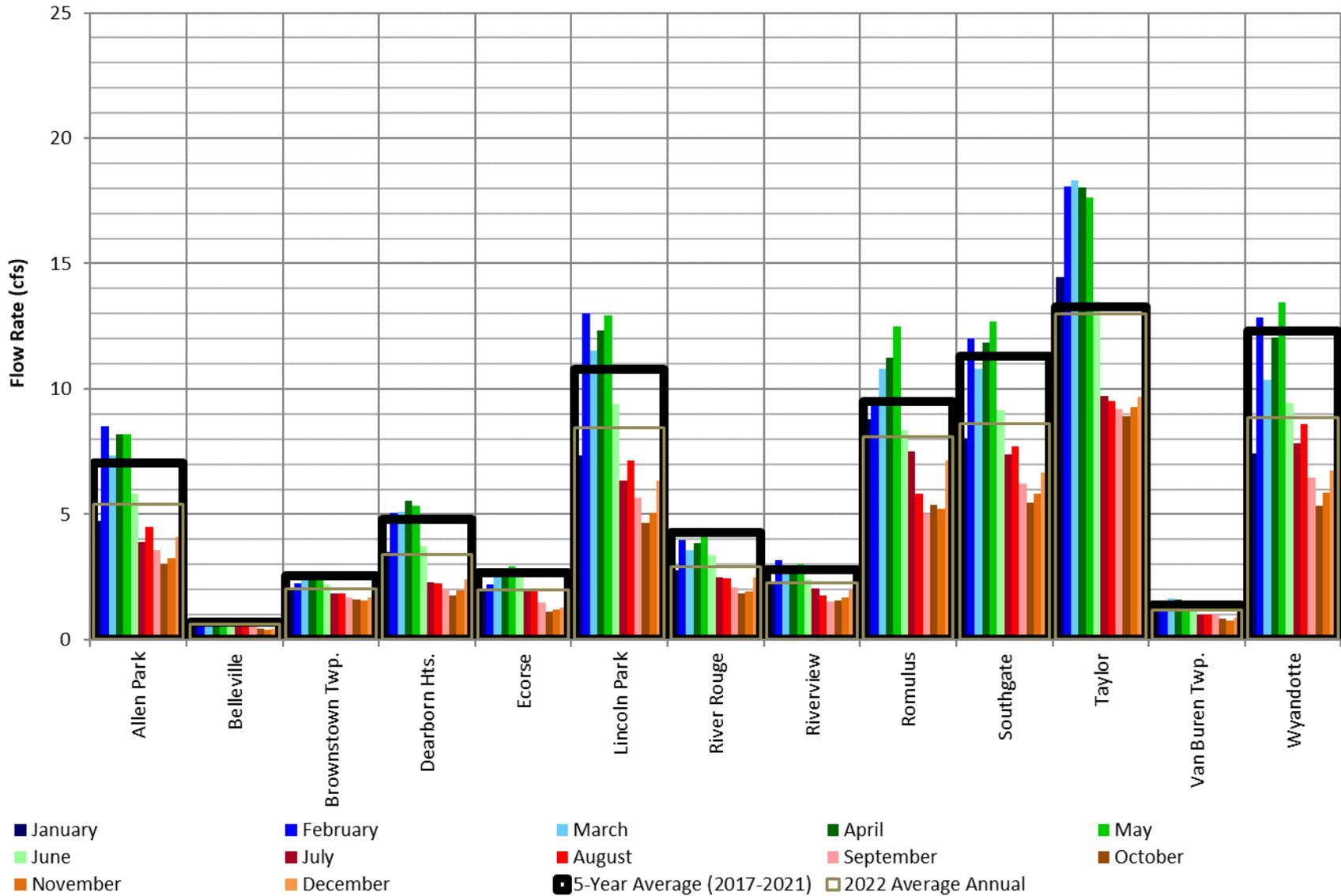


Figure 3-2
Percent of Total Incoming Flow Rate to the DWTF for 2022

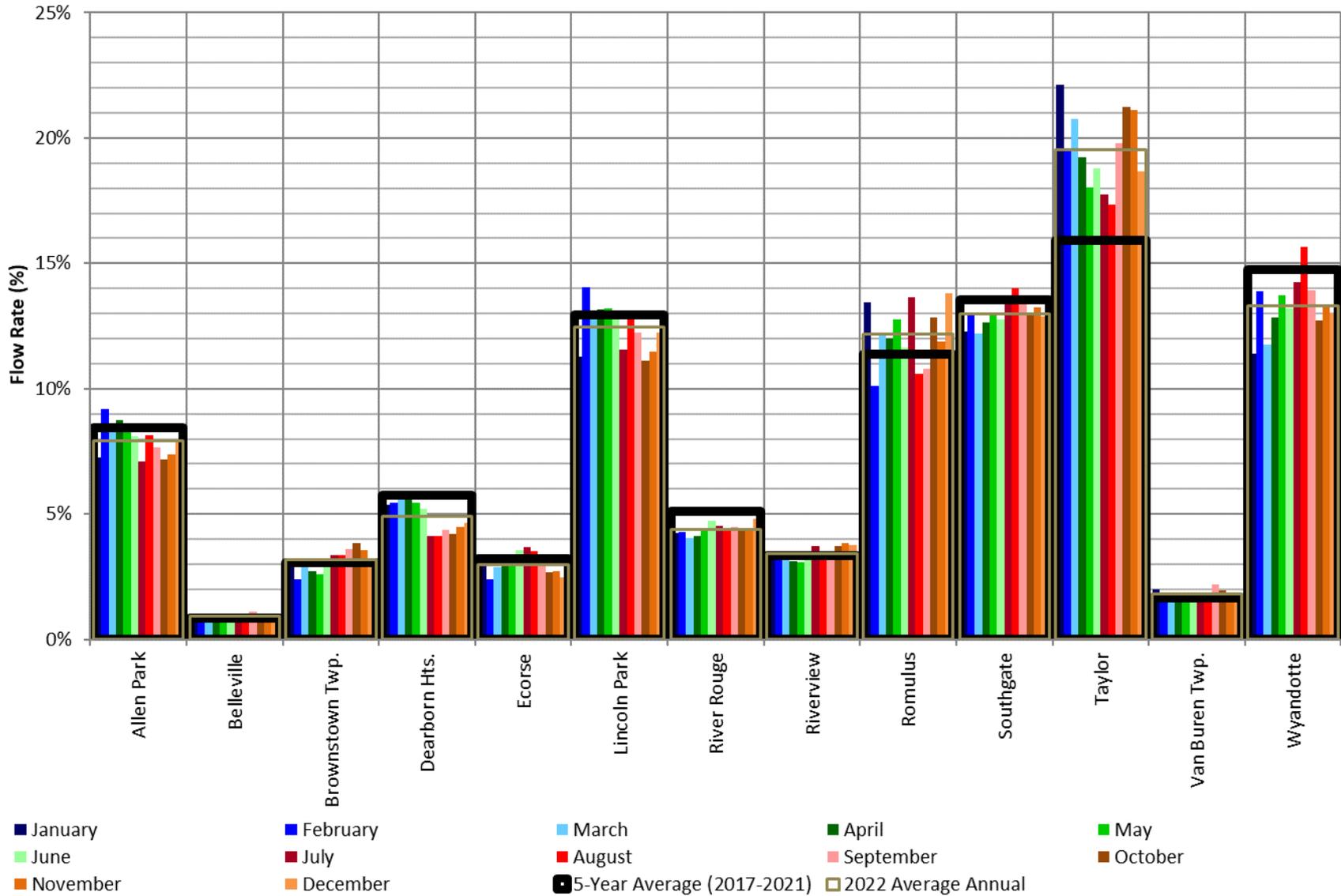


Table 3-2
Average Monthly Flow Rates for Controlled Flow Communities for 2022

Community	Flow Rate (cfs)												Average Annual
	January	February	March	April	May	June	July	August	September	October	November	December	
Allen Park (part)	4.00	7.38	6.37	6.84	7.14	5.08	3.35	3.86	3.08	2.56	2.78	3.55	4.64
Ecorse	1.93	2.21	2.54	2.72	2.94	2.56	2.02	1.93	1.49	1.12	1.20	1.28	1.99
Lincoln Park	7.37	13.00	11.51	12.34	12.94	9.41	6.35	7.14	5.67	4.66	5.06	6.35	8.45
River Rouge	2.78	3.95	3.58	3.86	4.27	3.38	2.48	2.43	2.09	1.86	1.94	2.49	2.92
Southgate - Wyandotte RDDD	11.90	20.57	16.59	19.27	21.51	15.12	12.52	13.77	10.34	8.53	9.39	10.79	14.14
Total	27.97	47.12	40.58	45.03	48.79	35.55	26.71	29.12	22.66	18.72	20.37	24.46	32.15
Total Precipitation DTW (inches)	0.52	2.61	2.18	2.75	3.81	2.35	1.86	2.32	0.99	1.15	1.52	2.34	24.40

Table 3-3
Average Monthly Flow Rates for Non-Controlled Flow Communities for 2022

Community	Flow Rate (cfs)												Average Annual
	January	February	March	April	May	June	July	August	September	October	November	December	
Allen Park (part)	0.75	1.13	0.96	1.36	1.04	0.73	0.56	0.62	0.48	0.46	0.47	0.54	0.75
Belleville	0.67	0.73	0.83	0.82	0.79	0.60	0.52	0.51	0.51	0.42	0.38	0.45	0.60
Brownstown Twp.	2.06	2.23	2.63	2.55	2.54	2.19	1.86	1.84	1.68	1.61	1.56	1.67	2.04
Dearborn Hts.	3.50	5.07	5.10	5.53	5.36	3.72	2.27	2.26	2.02	1.76	1.98	2.40	3.40
Riverview	2.27	3.17	2.89	2.92	3.03	2.39	2.04	1.75	1.51	1.56	1.69	1.96	2.26
Romulus	8.80	9.38	10.79	11.25	12.50	8.35	7.50	5.84	5.00	5.39	5.22	7.15	8.09
Southgate (part)	3.58	4.30	4.57	4.61	4.65	3.49	2.69	2.54	2.33	2.26	2.31	2.64	3.33
Taylor	14.47	18.09	18.31	18.01	17.64	13.48	9.74	9.53	9.18	8.90	9.29	9.67	12.99
Van Buren Twp.	1.31	1.43	1.63	1.61	1.55	1.18	1.02	1.00	1.01	0.82	0.75	0.88	1.18
Total	37.41	45.54	47.72	48.68	49.10	36.13	28.20	25.90	23.71	23.18	23.66	27.36	34.65
Total Precipitation DTW (inches)	0.52	2.61	2.18	2.75	3.81	2.35	1.86	2.32	0.99	1.15	1.52	2.34	24.40

4) DRY WEATHER SUMMARY

Table 4-1 lists the incremental monthly flow rates for each community summarized by meter district component. Incremental average daily flow rates are given along with an estimate of the average daily dry weather flow rates. The Year 2020 residential population is given on Table 4-1 and it is used to estimate per-capita dry weather flow rates. Appendix A contains a set of tables that further support the monthly flow rates presented on Tables 3-1, 3-2, 3-3 and 4-1. In addition, Table 4-1 lists MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017).

A single set of dry days was used to estimate the dry weather flow rates for all of the meters, with the number of dry days in each month listed in Table 5-1. Daily average flow rates for Meters P-2, PA-1, PB-1, PC-1, RD-1, and RV-1 were used for screening out dry and wet weather days. These meters 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. Details of the dry and wet weather day selection process are provided in the *Wayne County Downriver Sewage Disposal System - System Monitoring Plan* dated May 7, 2018.

Table 4-1
Monthly Incremental Flow Rates Summarized by Community

Community	Sewage Flow Meter Math	Meter District	Year 2020 Incremental Residential Population	January 2022			February 2022			March 2022			Dry Weather MAFLs for Controlled Flow Communities ¹ (cfs)	Dry Weather MAFLs for Non-Controlled Flow Communities ¹ (cfs)
				Total	Dry Weather		Total	Dry Weather		Total	Dry Weather			
				Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)		
Allen Park	2.7%[(PC-1)+(CPO)+(CHPO)-(TB-1)] + 17.4%[(P-1)+(PM-1)-(P-2)-(PA-2)-(PB-1)-(PD-1)-(PC-1)] + 38.1%[(RD-1)-(EC-6)] + [(APO-1) + (APO-2)]	PC-1	716	0.18	0.18	158	0.23	0.18	159	0.25	0.21	194	-	0.43
		P-1	2,338	0.56	0.54	149	0.68	0.53	147	0.72	0.65	178	-	1.58
		RD-1	22,170	4.00	3.74	109	7.38	4.11	120	6.37	4.63	135	17.20	-
		APO-1 + APO-2	0	0.00	0.00	-	0.22	0.00	-	0.00	0.00	-	-	-
		Total	25,224	4.74	4.46	114	8.52	4.82	123	7.33	5.49	141	-	2.01
Belleville	33.8%[PA-4]	PA-4	4,008	0.67	0.65	105	0.73	0.66	107	0.83	0.81	131	-	1.32
Brownstown Twp.	99.9%[P-2] + 0.2%[(PA-2)+(ER-1)-(PA-3)-(ER-2)]	P-2	11,002	2.06	2.05	120	2.22	1.95	115	2.62	2.46	145	-	3.91
		PA-2	29	0.01	0.01	166	0.01	0.01	169	0.01	0.01	168	-	0.06
		Total	11,031	2.06	2.05	120	2.23	1.96	115	2.63	2.47	145	-	3.97
Dearborn Hts.	77.7%[(TB-1)+(TSO)]	TB-1	19,472	3.50	3.27	108	5.07	3.29	109	5.10	4.17	139	-	8.22
Ecorse	69.1%[(EC-6)-(RR-1)]	EC-6	9,305	1.93	1.84	128	2.21	1.77	123	2.54	2.16	150	9.20	-
Lincoln Park	30.9%[(EC-6)-(RR-1)] + 61.9%[(RD-1)-(EC-6)]	EC-6	4,169	0.86	0.83	128	0.99	0.79	123	1.14	0.97	150	3.00	-
		RD-1	36,076	6.50	6.09	109	12.01	6.69	120	10.37	7.54	135	25.16	-
		Total	40,245	7.37	6.92	111	13.00	7.48	120	11.51	8.51	137	28.16	-
River Rouge	[RR-1]	RR-1	7,224	2.78	2.62	234	3.95	2.57	230	3.58	3.07	275	11.26	-
Riverview	[RV-1]	RV-1	12,490	2.27	2.20	114	3.17	2.18	113	2.89	2.38	123	-	3.61
Romulus	[(PA-3)+(ER-2)-(PA-4)] + [DMA-2] + [(PD-2) - [DMA-2]]	PA-3	14,420	4.37	4.26	191	4.90	4.41	198	5.43	5.24	235	-	6.39
		DMA-2 ⁴	0	1.36	1.32	-	0.89	0.89	-	1.51	1.62	-	-	9.02
		PD-2 ⁵	8,069	3.07	2.95	236	3.59	2.85	228	3.85	3.45	276	-	-
		Total	22,489	8.80	8.54	245	9.38	8.15	234	10.79	10.31	296	-	15.41
Southgate	(82.6% + 5.4%)[(P-1)+(PM-1)-(P-2)-(PA-2)-(PB-1)-(PD-1)-(PC-1)] + 38.9%[PB-1] + 37.5%[(SW)+(SWB)]	P-1 & TPS+IPS	11,797	2.83	2.72	149	3.42	2.69	147	3.61	3.25	178	-	3.71
		PB-1	3,214	0.75	0.73	147	0.88	0.69	138	0.96	0.82	164	-	1.42
		SW	15,003	4.46	4.23	182	7.70	4.26	184	6.21	4.52	195	11.88	-
		Total	30,014	8.04	7.68	165	12.00	7.64	165	10.78	8.59	185	-	5.13
Taylor	0.1%[P-2] + 99.8%[(PA-2)+(ER-1)-(PA-3)-(ER-2)] + 61.1%[PB-1] + 22.3%[(TB-1)+(TSO)] + 97.3%[(PC-1)+(CPO)+(CHPO)-(TB-1)] + [(PD-1)-(PD-2)]	P-2	10	0.00	0.00	120	0.00	0.00	115	0.00	0.00	145	-	0.08
		PA-2	14,125	3.77	3.63	166	4.63	3.70	169	4.08	3.68	168	-	2.40
		PB-1	5,040	1.18	1.15	147	1.38	1.08	138	1.50	1.28	164	-	2.15
		TB-1	5,574	1.00	0.94	108	1.45	0.94	109	1.46	1.19	139	-	2.29
		PC-1	25,577	6.56	6.26	158	8.28	6.31	159	8.78	7.67	194	-	11.03
		PD-1	13,083	1.96	1.88	93	2.34	1.88	93	2.48	2.26	112	-	4.01
		Total	63,409	14.47	13.85	141	18.09	13.91	142	18.31	16.09	164	-	21.96
Van Buren Twp.	66.2%[PA-4]	PA-4	7,865	1.31	1.27	105	1.43	1.30	107	1.63	1.59	131	-	2.37
Wyandotte	62.5%[(SW)+(SWB)]	SW	25,058	7.45	7.06	182	12.86	7.12	184	10.38	7.55	195	19.85	-
Subtotal Controlled Flow Communities			119,005	27.97	26.41	143	47.12	27.32	148	40.58	30.43	165	97.55	-
Subtotal Non-Controlled Flow Communities			158,829	37.41	36.00	147	45.32	35.52	145	47.72	42.75	174	-	64.00
Total Incoming Flow			277,834	65.38	62.42	145	92.66	62.84	146	88.30	73.19	170	-	-
DWTF Including Recycle (IPS + TPS)			277,834	66.07	63.36	147	98.45	65.85	153	93.91	77.40	180	-	-
DWTF without Recycle (IPS + TPS - Recycle)			277,834	58.86	55.96	130	89.07	57.55	134	86.31	68.93	160	-	-
Recycle			-	7.21	7.40	-	9.37	8.30	-	7.60	8.47	-	-	-

- Note:
- 1) Dry weather MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017).
 - 2) The MAFL for each community component of Meter District SW is population weighted. Southgate and Wyandotte have MAFLs of 7.67 and 24.06 cfs, respectively. Therefore, the combined MAFL is 31.73 cfs. The population weighted MAFL for Southgate and Wyandotte are allocated to be 11.88 and 19.85 cfs, respectively.
 - 3) The meter district flow rates are split into community components based on relative 2020 residential population.
 - 4) Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.
 - 5) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

Legend:

XX.XX	Exceeds the weighted proportion of the dry weather MAFL by 0 to 20%
XX.XX	Exceeds the weighted proportion of the dry weather MAFL by greater than 20%

Table 4-1 continued
Monthly Incremental Flow Rates Summarized by Community

Community	Sewage Flow Meter Math	Meter District	Year 2020 Incremental Residential Population	April 2022			May 2022			June 2022			Dry Weather MAFLs for Controlled Flow Communities ¹ (cfs)	Dry Weather MAFLs for Non-Controlled Flow Communities ¹ (cfs)
				Total	Dry Weather		Total	Dry Weather		Total	Dry Weather			
				Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)		
Allen Park	2.7%[(PC-1)+(CPO)+(CHPO)-(TB-1)] + 17.4%[(P-1)+(PM-1)-(P-2)-(PA-2)-(PB-1)-(PD-1)-(PC-1)] + 38.1%[(RD-1)-(EC-6)] + [(APO-1) + (APO-2)]	PC-1	716	0.25	0.22	197	0.24	0.20	179	0.19	0.16	144	-	0.43
		P-1	2,338	0.73	0.65	178	0.74	0.62	170	0.54	0.48	132	-	1.58
		RD-1	22,170	6.84	5.15	150	7.14	4.49	131	5.08	3.60	105	17.20	-
		APO-1 + APO-2	0	0.39	0.00	-	0.06	0.00	-	0.00	0.00	-	-	-
		Total	25,224	8.20	6.01	154	8.18	5.30	136	5.81	4.24	109	-	2.01
Belleville	33.8%[PA-4]	PA-4	4,008	0.82	0.77	125	0.79	0.73	118	0.60	0.58	94	-	1.32
Brownstown Twp.	99.9%[P-2] + 0.2%[(PA-2)+(ER-1)-(PA-3)-(ER-2)]	P-2	11,002	2.55	2.41	142	2.53	2.28	134	2.19	2.07	122	-	3.91
		PA-2	29	0.01	0.01	155	0.01	0.01	142	0.01	0.00	110	-	0.06
		Total	11,031	2.55	2.42	142	2.54	2.28	134	2.19	2.07	122	-	3.97
Dearborn Hts.	77.7%[(TB-1)+(TSO)]	TB-1	19,472	5.53	4.39	146	5.36	3.85	128	3.72	2.75	91	-	8.22
Ecorse	69.1%[(EC-6)-(RR-1)]	EC-6	9,305	2.72	2.52	175	2.94	2.70	187	2.56	2.37	164	9.20	-
Lincoln Park	30.9%[(EC-6)-(RR-1)] + 61.9%[(RD-1)-(EC-6)]	EC-6	4,169	1.22	1.13	175	1.32	1.21	187	1.15	1.06	164	3.00	-
		RD-1	36,076	11.13	8.38	150	11.62	7.30	131	8.27	5.86	105	25.16	-
		Total	40,245	12.34	9.51	153	12.94	8.51	137	9.41	6.92	111	28.16	-
River Rouge	[RR-1]	RR-1	7,224	3.86	3.11	278	4.27	3.22	288	3.38	2.58	231	11.26	-
Riverview	[RV-1]	RV-1	12,490	2.92	2.44	126	3.03	2.14	111	2.39	2.11	109	-	3.61
Romulus	[(PA-3)+(ER-2)-(PA-4)] + [DMA-2] + [(PD-2) - [DMA-2]]	PA-3	14,420	5.42	5.17	232	5.33	4.85	217	4.15	3.98	178	-	6.39
		DMA-2 ⁴	0	1.99	1.94	-	3.10	2.85	-	1.33	1.14	-	-	9.02
		PD-2 ⁵	8,069	3.84	3.45	276	4.07	3.45	277	2.87	2.62	210	-	-
		Total	22,489	11.25	10.56	303	12.50	11.16	321	8.35	7.74	223	-	15.41
Southgate	(82.6% + 5.4%)[(P-1)+(PM-1)-(P-2)-(PA-2)-(PB-1)-(PD-1)-(PC-1)] + 38.9%[PB-1] + 37.5%[(SW)+(SWB)]	P-1 & TPS+IPS	11,797	3.69	3.26	178	3.71	3.10	170	2.72	2.40	132	-	3.71
		PB-1	3,214	0.92	0.82	165	0.94	0.76	152	0.77	0.67	134	-	1.42
		SW	15,003	7.22	5.35	230	8.05	5.01	216	5.66	4.55	196	11.88	-
		Total	30,014	11.83	9.43	203	12.70	8.87	191	9.15	7.62	164	-	5.13
Taylor	0.1%[P-2] + 99.8%[(PA-2)+(ER-1)-(PA-3)-(ER-2)] + 61.1%[PB-1] + 22.3%[(TB-1)+(TSO)] + 97.3%[(PC-1)+(CPO)+(CHPO)-(TB-1)] + [(PD-1)-(PD-2)]	P-2	10	0.00	0.00	142	0.00	0.00	134	0.00	0.00	122	-	0.08
		PA-2	14,125	3.82	3.39	155	3.86	3.10	142	2.54	2.40	110	-	2.40
		PB-1	5,040	1.45	1.29	165	1.47	1.19	152	1.21	1.05	134	-	2.15
		TB-1	5,574	1.58	1.26	146	1.53	1.10	128	1.07	0.79	91	-	2.29
		PC-1	25,577	8.86	7.79	197	8.64	7.08	179	6.68	5.70	144	-	11.03
		PD-1	13,083	2.30	2.05	101	2.14	1.90	94	1.98	1.88	93	-	4.01
		Total	63,409	18.01	15.78	161	17.64	14.36	146	13.48	11.82	120	-	21.96
Van Buren Twp.	66.2%[PA-4]	PA-4	7,865	1.61	1.52	125	1.55	1.44	118	1.18	1.15	94	-	2.37
Wyandotte	62.5%[(SW)+(SWB)]	SW	25,058	12.05	8.93	230	13.45	8.38	216	9.45	7.60	196	19.85	-
Subtotal Controlled Flow Communities			119,005	45.03	34.58	188	48.79	32.31	175	35.55	27.61	150	97.55	-
Subtotal Non-Controlled Flow Communities			158,829	48.30	42.82	174	49.04	40.64	165	36.12	31.93	130	-	64.00
Total Incoming Flow			277,834	93.71	77.40	180	97.90	72.95	170	71.68	59.54	139	-	-
DWTF Including Recycle (IPS + TPS)			277,834	98.39	80.51	187	105.25	77.43	180	71.92	58.24	135	-	-
DWTF without Recycle (IPS + TPS - Recycle)			277,834	89.66	72.81	169	93.52	66.33	154	65.81	52.48	122	-	-
Recycle			-	8.73	7.70	-	11.73	11.09	-	6.11	5.76	-	-	-

- Note:
- 1) Dry weather MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017).
 - 2) The MAFL for each community component of Meter District SW is population weighted. Southgate and Wyandotte have MAFLs of 7.67 and 24.06 cfs, respectively. Therefore, the combined MAFL is 31.73 cfs. The population weighted MAFL for Southgate and Wyandotte are allocated to be 11.88 and 19.85 cfs, respectively.
 - 3) The meter district flow rates are split into community components based on relative 2020 residential population.
 - 4) Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.
 - 5) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

Legend:

XX.XX	Exceeds the weighted proportion of the dry weather MAFL by 0 to 20%
XX.XX	Exceeds the weighted proportion of the dry weather MAFL by greater than 20%

Table 4-1 continued
Monthly Incremental Flow Rates Summarized by Community

Community	Sewage Flow Meter Math	Meter District	Year 2020 Incremental Residential Population	July 2022			August 2022			September 2022			Dry Weather MAFLs for Controlled Flow Communities ¹ (cfs)	Dry Weather MAFLs for Non-Controlled Flow Communities ¹ (cfs)
				Total	Dry Weather		Total	Dry Weather		Total	Dry Weather			
				Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)		
Allen Park	2.7%[(PC-1)+[CPO]+[CHPO]-[TB-1]] + 17.4%[(P-1)+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1]] + 38.1%[(RD-1)-[EC-6]] + ([APO-1] + [APO-2])	PC-1	716	0.14	0.13	119	0.13	0.12	109	0.12	0.12	105	-	0.43
		P-1	2,338	0.42	0.40	111	0.39	0.36	100	0.35	0.35	95	-	1.58
		RD-1	22,170	3.35	2.86	83	3.86	2.80	82	3.08	2.63	77	17.20	-
		APO-1 + APO-2	0	0.00	0.00	-	0.10	0.00	-	0.00	0.00	-	-	-
		Total	25,224	3.91	3.40	87	4.48	3.28	84	3.55	3.09	79	-	2.01
Belleville	33.8%[PA-4]	PA-4	4,008	0.52	0.52	84	0.51	0.50	80	0.51	0.51	82	-	1.32
Brownstown Twp.	99.9%[P-2] + 0.2%[(PA-2)+[ER-1]-[PA-3]-[ER-2]]	P-2	11,002	1.85	1.83	108	1.84	1.78	104	1.67	1.66	97	-	3.91
		PA-2	29	0.00	0.00	95	0.00	0.00	91	0.00	0.00	107	-	0.06
		Total	11,031	1.86	1.83	107	1.84	1.78	104	1.68	1.66	97	-	3.97
Dearborn Hts.	77.7%[(TB-1)+[TSO]]	TB-1	19,472	2.27	2.09	69	2.26	1.97	66	2.02	1.87	62	-	8.22
Ecorse	69.1%[(EC-6)-[RR-1]]	EC-6	9,305	2.02	1.98	137	1.93	1.83	127	1.49	1.48	103	9.20	-
Lincoln Park	30.9%[(EC-6)-[RR-1]] + 61.9%[(RD-1)-[EC-6]]	EC-6	4,169	0.90	0.89	137	0.87	0.82	127	0.67	0.66	103	3.00	-
		RD-1	36,076	5.45	4.66	83	6.28	4.55	82	5.01	4.28	77	25.16	-
		Total	40,245	6.35	5.54	89	7.14	5.38	86	5.67	4.94	79	28.16	-
River Rouge	[RR-1]	RR-1	7,224	2.48	2.09	187	2.43	1.93	173	2.09	1.87	167	11.26	-
Riverview	[RV-1]	RV-1	12,490	2.04	1.93	100	1.75	1.54	80	1.51	1.47	76	-	3.61
Romulus	([PA-3]+[ER-2]-[PA-4]) + [DMA-2] + ([PD-2] - [DMA-2])	PA-3	14,420	3.43	3.38	152	3.36	3.27	147	2.70	2.67	120	-	6.39
		DMA-2 ⁴	0	1.75	1.46	-	0.00	0.00	-	0.00	0.00	-	-	9.02
		PD-2 ⁵	8,069	2.32	2.26	181	2.47	2.38	190	2.30	2.29	184	-	-
		Total	22,489	7.50	7.10	204	5.84	5.65	162	5.00	4.96	143	-	15.41
Southgate	(82.6% + 5.4%)[(P-1)+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1]] + 38.9%[PB-1] + 37.5%([SW]+[SWB])	P-1 & TPS+IPS	11,797	2.11	2.03	111	1.95	1.82	100	1.79	1.74	95	-	3.71
		PB-1	3,214	0.59	0.57	114	0.60	0.56	112	0.54	0.53	107	-	1.42
		SW	15,003	4.69	3.98	172	5.16	3.75	162	3.87	3.35	144	11.88	-
		Total	30,014	7.38	6.58	142	7.70	6.13	132	6.20	5.63	121	-	5.13
Taylor	0.1%[P-2] + 99.8%[(PA-2)+[ER-1]-[PA-3]-[ER-2]] + 61.1%[PB-1] + 22.3%[(TB-1)+[TSO]] + 97.3%[(PC-1)+[CPO]+[CHPO]-[TB-1]] + ([PD-1]-[PD-2])	P-2	10	0.00	0.00	108	0.00	0.00	104	0.00	0.00	97	-	0.08
		PA-2	14,125	2.13	2.09	95	2.06	2.00	91	2.36	2.34	107	-	2.40
		PB-1	5,040	0.92	0.89	114	0.94	0.88	112	0.85	0.83	107	-	2.15
		TB-1	5,574	0.65	0.60	69	0.65	0.57	66	0.58	0.53	62	-	2.29
		PC-1	25,577	4.98	4.71	119	4.71	4.30	109	4.33	4.14	105	-	11.03
		PD-1	13,083	1.05	1.19	59	1.18	1.14	56	1.06	1.03	51	-	4.01
Total	63,409	9.74	9.48	97	9.53	8.88	91	9.18	8.88	91	-	21.96		
Van Buren Twp.	66.2%[PA-4]	PA-4	7,865	1.02	1.02	84	1.00	0.98	80	1.01	1.00	82	-	2.37
Wyandotte	62.5%([SW]+[SWB])	SW	25,058	7.83	6.65	172	8.61	6.26	162	6.47	5.60	144	19.85	-
Subtotal Controlled Flow Communities			119,005	26.71	23.11	126	29.12	21.95	119	22.66	19.87	108	97.55	-
Subtotal Non-Controlled Flow Communities			158,829	28.20	27.11	110	25.80	24.17	98	23.71	23.09	94	-	64.00
Total Incoming Flow			277,834	54.92	50.22	117	55.02	46.13	107	46.37	42.96	100	-	-
DWTF Including Recycle (IPS + TPS)			277,834	52.48	47.80	111	55.92	46.48	108	45.71	41.94	98	-	-
DWTF without Recycle (IPS + TPS - Recycle)			277,834	47.82	43.42	101	51.29	42.00	98	41.54	37.64	88	-	-
Recycle			-	4.66	4.38	-	4.62	4.48	-	4.18	4.30	-	-	-

Note:

- 1) Dry weather MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017).
- 2) The MAFL for each community component of Meter District SW is population weighted. Southgate and Wyandotte have MAFLs of 7.67 and 24.06 cfs, respectively. Therefore, the combined MAFL is 31.73 cfs. The population weighted MAFL for Southgate and Wyandotte are allocated to be 11.88 and 19.85 cfs, respectively.
- 3) The meter district flow rates are split into community components based on relative 2020 residential population.
- 4) Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.
- 5) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

Legend:

- XX.XX Exceeds the weighted proportion of the dry weather MAFL by 0 to 20%
- XX.XX Exceeds the weighted proportion of the dry weather MAFL by greater than 20%

Table 4-1 continued
Monthly Incremental Flow Rates Summarized by Community

Community	Sewage Flow Meter Math	Meter District	Year 2020 Incremental Residential Population	October 2022			November 2022			December 2022			Dry Weather MAFLs for Controlled Flow Communities ¹ (cfs)	Dry Weather MAFLs for Non-Controlled Flow Communities ¹ (cfs)
				Total	Dry Weather		Total	Dry Weather		Total	Dry Weather			
				Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)		
Allen Park	2.7%[(PC-1)+(CPO)+(CHPO)-(TB-1)] + 17.4%[(P-1)+(PM-1)-(P-2)-(PA-2)-(PB-1)-(PD-1)-(PC-1)] + 38.1%[(RD-1)-(EC-6)] + [(APO-1) + (APO-2)]	PC-1	716	0.11	0.11	97	0.12	0.11	103	0.13	0.12	105	-	0.43
		P-1	2,338	0.35	0.33	92	0.35	0.34	94	0.41	0.37	102	-	1.58
		RD-1	22,170	2.56	2.35	69	2.78	2.28	66	3.55	2.32	68	17.20	-
		APO-1 + APO-2	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	-	-
		Total	25,224	3.01	2.79	71	3.25	2.73	70	4.09	2.80	72	-	2.01
Belleville	33.8%[PA-4]	PA-4	4,008	0.42	0.42	68	0.38	0.38	61	0.45	0.44	71	-	1.32
Brownstown Twp.	99.9%[P-2] + 0.2%[(PA-2)+(ER-1)-(PA-3)-(ER-2)]	P-2	11,002	1.61	1.60	94	1.56	1.54	90	1.67	1.58	93	-	3.91
		PA-2	29	0.01	0.01	115	0.01	0.01	113	0.01	0.01	113	-	0.06
		Total	11,031	1.61	1.60	94	1.56	1.54	90	1.67	1.58	93	-	3.97
Dearborn Hts.	77.7%[(TB-1)+(TSO)]	TB-1	19,472	1.76	1.69	56	1.98	1.78	59	2.40	1.91	63	-	8.22
Ecorse	69.1%[(EC-6)-(RR-1)]	EC-6	9,305	1.12	1.07	74	1.20	1.20	84	1.28	1.11	77	9.20	-
Lincoln Park	30.9%[(EC-6)-(RR-1)] + 61.9%[(RD-1)-(EC-6)]	EC-6	4,169	0.50	0.48	74	0.54	0.54	84	0.57	0.50	77	3.00	-
		RD-1	36,076	4.16	3.83	69	4.52	3.71	66	5.78	3.77	68	25.16	-
		Total	40,245	4.66	4.31	69	5.06	4.25	68	6.35	4.27	69	28.16	-
River Rouge	[RR-1]	RR-1	7,224	1.86	1.74	156	1.94	1.62	145	2.49	1.73	155	11.26	-
Riverview	[RV-1]	RV-1	12,490	1.56	1.51	78	1.69	1.59	82	1.96	1.61	83	-	3.61
Romulus	[(PA-3)+(ER-2)-(PA-4)] + [DMA-2] + [(PD-2) - [DMA-2]]	PA-3	14,420	2.75	2.73	123	2.96	2.93	131	2.84	2.76	124	-	6.39
		DMA-2 ⁴	0	0.50	0.00	-	0.00	0.00	-	1.77	1.46	-	-	9.02
		PD-2 ⁵	8,069	2.14	2.13	170	2.26	2.14	171	2.54	2.33	186	-	-
		Total	22,489	5.39	4.86	140	5.22	5.06	145	7.15	6.55	188	-	15.41
Southgate	(82.6% + 5.4%)[(P-1)+(PM-1)-(P-2)-(PA-2)-(PB-1)-(PD-1)-(PC-1)] + 38.9%[PB-1] + 37.5%[(SW)+(SWB)]	P-1 & TPS+IPS	11,797	1.74	1.67	92	1.77	1.71	94	2.05	1.86	102	-	3.71
		PB-1	3,214	0.52	0.51	103	0.54	0.52	104	0.59	0.52	106	-	1.42
		SW	15,003	3.19	2.98	128	3.52	2.96	127	4.04	3.09	133	11.88	-
		Total	30,014	5.45	5.17	111	5.83	5.18	112	6.68	5.47	118	-	5.13
Taylor	0.1%[P-2] + 99.8%[(PA-2)+(ER-1)-(PA-3)-(ER-2)] + 61.1%[PB-1] + 22.3%[(TB-1)+(TSO)] + 97.3%[(PC-1)+(CPO)+(CHPO)-(TB-1)] + [(PD-1)-(PD-2)]	P-2	10	0.00	0.00	94	0.00	0.00	90	0.00	0.00	93	-	0.08
		PA-2	14,125	2.52	2.51	115	2.48	2.46	113	2.57	2.46	113	-	2.40
		PB-1	5,040	0.81	0.80	103	0.84	0.81	104	0.92	0.82	106	-	2.15
		TB-1	5,574	0.50	0.48	56	0.57	0.51	59	0.69	0.55	63	-	2.29
		PC-1	25,577	3.97	3.82	97	4.27	4.06	103	4.69	4.17	105	-	11.03
		PD-1	13,083	1.09	1.14	56	1.13	1.19	59	0.81	0.84	41	-	4.01
		Total	63,409	8.90	8.76	89	9.29	9.03	92	9.67	8.84	90	-	21.96
Van Buren Twp.	66.2%[PA-4]	PA-4	7,865	0.82	0.82	68	0.75	0.74	61	0.88	0.86	71	-	2.37
Wyandotte	62.5%[(SW)+(SWB)]	SW	25,058	5.33	4.98	128	5.87	4.94	127	6.75	5.16	133	19.85	-
Subtotal Controlled Flow Communities			119,005	18.72	17.43	95	20.37	17.25	94	24.46	17.68	96	97.55	-
Subtotal Non-Controlled Flow Communities			158,829	23.18	22.29	91	23.66	22.79	93	27.36	24.65	100	-	64.00
Total Incoming Flow			277,834	41.90	39.72	92	44.03	40.04	93	51.82	42.33	98	-	-
DWTF Including Recycle (IPS + TPS)			277,834	42.15	40.50	94	45.36	40.94	95	53.46	44.78	104	-	-
DWTF without Recycle (IPS + TPS - Recycle)			277,834	38.06	36.28	84	40.13	35.70	83	49.69	41.26	96	-	-
Recycle			-	4.10	4.23	-	5.23	5.24	-	3.78	3.52	-	-	-

Note:

- 1) Dry weather MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017).
- 2) The MAFL for each community component of Meter District SW is population weighted. Southgate and Wyandotte have MAFLs of 7.67 and 24.06 cfs, respectively. Therefore, the combined MAFL is 31.73 cfs. The population weighted MAFL for Southgate and Wyandotte are allocated to be 11.88 and 19.85 cfs, respectively.
- 3) The meter district flow rates are split into community components based on relative 2020 residential population.
- 4) Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.
- 5) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

Legend:

- XX.XX Exceeds the weighted proportion of the dry weather MAFL by 0 to 20%
- XX.XX Exceeds the weighted proportion of the dry weather MAFL by greater than 20%

5) 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 DSDS rain gauges is summarized on Table 5-2. Daily precipitation data for the DSDS 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. The total precipitation for 2022 at DTW was 24.40 inches, which is 9.92 inches below normal.

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. Major storm events are a subgroup of significant storm events which result in the peak hourly influent flow rate to the DWTF reaching or exceeding 175 MGD (271 cfs).

There were six (6) significant storm events in 2022. The events were designated as Significant Storm Events 1 through 6 for year 2022. There were no major storm events in 2022. The precipitation data for the significant/major storm events are further summarized in Table 5-6 and Appendix B. None of these events equaled or exceeded the 25-year, 24-hour design storm rainfall total of 4.42 inches on which the DRSTS was based.

A quality assurance (QA) and quality control (QC) review of the DUWA 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
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	27	4	0.52	-1.71
February	9	19	2.61	+0.53
March	15	16	2.18	-0.25
April	17	13	2.75	-0.51
May	15	16	3.81	+0.09
June	23	7	2.35	-0.91
July	17	14	1.86	-1.65
August	17	14	2.32	-0.94
September	24	6	0.99	-2.23
October	23	8	1.15	-1.38
November	25	56	1.52	-1.05
December	18	13	2.34	+0.09
Total	230	135	24.40	-9.92

Note:

- 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
Monthly Precipitation for 2022**

Date	Monthly Precipitation (inches)											DTW Monthly Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
January	0.21	0.22	0.32	0.52	0.27	0.44	0.24	0.22	0.44	0.44	0.43	29	12	20
February	1.98	2.07	2.19	2.61	2.11	3.16	2.10	1.99	2.58	2.58	2.73	35	18	26
March	2.06	2.72	2.00	2.18	2.18	2.72	2.21	2.15	2.14	2.13	2.13	48	30	39
April	2.79	2.95	2.96	2.75	2.77	2.95	2.49	2.93	2.46	2.70	2.85	55	39	47
May	3.29	4.42	2.80	3.81	3.97	4.42	3.90	2.72*	4.15	3.89	3.87	74	55	64
June	2.13	3.05	2.34	2.35	2.27	3.05	2.47	2.21	2.88	2.29	2.63	82	60	71
July	0.65	1.57	2.11	1.86	0.38*	1.57	1.31	1.83	1.73	1.85	1.45	85	64	75
August	2.60	2.66	2.79	2.32	2.97	2.66	2.77	2.33	2.54	1.04*	2.12	84	64	74
September	1.06	1.25	1.26	0.99	1.17	0.08*	1.29	1.76	1.03	1.02	1.66	76	57	67
October	0.75	0.97	0.91	1.15	0.87	0.23*	0.87	0.91	0.84	0.90	0.87	64	42	53
November	1.26	1.37	1.36	1.52	1.40	1.89	1.39	1.44	1.57	1.57	1.50	53	35	44
December	1.83	1.98	2.17	2.34	2.01	2.52	1.97	2.19	2.07	2.18	2.27	38	27	33
Total	20.61	25.23	23.21	24.40	22.37*	25.69*	23.01	22.68*	24.43	22.59*	24.51	54	36	45

Legend

X.XX*	Missing or suspect data.
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**Table 5-3
Daily Precipitation for January 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
1/1/2022	0.03	0.04	0	0.14	0.03	0	0	0.04	0.05	0.02	0.04	43	26	35
1/2/2022	0	0	0	0.06	0	0.01	0	0.01	0	0	0	26	13	20
1/3/2022	0	0.01	0.05	0	0	0.05	0.07	0	0	0.01	0	27	10	19
1/4/2022	0	0	0	0	0.01	0	0.06	0	0	0.10	0.02	35	19	27
1/5/2022	0	0	0	t	0	0.06	0	0	0.11	0	0.07	36	14	25
1/6/2022	0	0	0	t	0	0.01	0	0	0	0	0	22	14	18
1/7/2022	0	0	0	t	0	0	0	0	0	0	0	23	9	16
1/8/2022	0	0	0	t	0	0.01	0	0	0	0.02	0	33	8	21
1/9/2022	0	0	0.02	0.02	0	0	0.01	0	0.01	0.01	0.01	38	16	27
1/10/2022	0	0	0	t	0	0	0	0	0	0	0	24	8	16
1/11/2022	0	0	0	0	0	0	0	0	0	0	0	28	6	17
1/12/2022	0	0	0	t	0	0	0	0	0	0	0	39	27	33
1/13/2022	0	0	0	0	0	0	0	0	0	0	0	37	24	31
1/14/2022	0	0	0	t	0	0	0	0	0	0	0	31	15	23
1/15/2022	0	0	0	t	0	0	0	0	0	0	0	19	10	15
1/16/2022	0	0	0	t	0	0	0	0	0	0	0	32	9	21
1/17/2022	0	0	0	t	0	0	0	0	0	0	0	30	22	26
1/18/2022	0	0	0	t	0	0	0	0	0	0	0	35	27	31
1/19/2022	0	0	0	t	0	0	0	0	0	0	0	44	21	33
1/20/2022	0	0	0	t	0	0	0	0	0	0	0	21	16	19
1/21/2022	0	0	0	t	0	0	0	0	0	0.01	0	23	10	17
1/22/2022	0	0	0	t	0	0	0	0	0	0	0	26	11	19
1/23/2022	0.10	0.11	0	0.16	0.14	0.20	0	0.11	0.19	0	0.16	24	8	16
1/24/2022	0.08	0.06	0.01	0.13	0.09	0.10	0	0.06	0.08	0	0.13	24	5	15
1/25/2022	0	0	0.24	t	0	0	0.10	0	0	0.27	0	21	7	14
1/26/2022	0	0	0	0	0	0	0	0	0	0	0	19	2	11
1/27/2022	0	0	0	t	0	0	0	0	0	0	0	28	0	14
1/28/2022	0	0	0	t	0	0	0	0	0	0	0	24	8	16
1/29/2022	0	0	0	0	0	0	0	0	0	0	0	19	-5	7
1/30/2022	0	0	0	0.01	0	0	0	0	0	0	0	25	10	18
1/31/2022	0	0	0	0	0	0	0	0	0	0	0	28	5	17
Total	0.21	0.22*	0.32	0.52	0.27	0.44	0.24	0.22	0.44	0.44	0.43	29	12	20

Legend

X.XX*	Missing or suspect data.
t	

**Table 5-4
Daily Precipitation for February 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
2/1/2022	0.01	0	0.01	t	0	0	0	0	0	0	0	46	19	33
2/2/2022	0.60	0.58	0.65	0.70	0.57	0.90	0.68	0.61	0.80	0.77	0.73	40	23	32
2/3/2022	0.04	0.04	0.04	0.12	0.03	0.10	0.03	0.01	0.03	0.07	0.10	24	17	21
2/4/2022	0	0	0	t	0	0	0.02	0.01	0.04	0.01	0.02	22	9	16
2/5/2022	0	0	0	t	0	0	0	0	0	0	0	20	9	15
2/6/2022	0	0	0	0	0	0	0	0	0	0	0	29	12	21
2/7/2022	0	0	0	t	0	0	0	0	0	0	0	31	16	24
2/8/2022	0	0	0	t	0	0	0	0	0	0	0	27	19	23
2/9/2022	0	0	0	t	0	0	0	0	0	0	0	41	18	30
2/10/2022	0	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02	35	29	32
2/11/2022	0.09	0.06	0.08	0.11	0.12	0.18	0.06	0.09	0.09	0.16	0.11	37	28	33
2/12/2022	0	0	0	t	0	0	0	0	0	0	0	36	19	28
2/13/2022	0	0.02	0.02	0.10	0.09	0.08	0.06	0.04	0.04	0.04	0.11	23	11	17
2/14/2022	0	0	0.01	0	0	0.02	0	0.01	0.03	0	0	22	2	12
2/15/2022	0	0	0	t	0	0	0	0	0	0	0	25	9	17
2/16/2022	0	0	0.01	0.01	0	0	0	0.01	0	0	0.01	53	22	38
2/17/2022	1.05	1.16	1.08	1.27	1.10	1.46	1.06	1.01	1.21	1.24	1.37	51	20	36
2/18/2022	0.02	0	0.09	0.02	0	0.05	0.01	0.03	0.08	0.01	0.06	28	10	19
2/19/2022	0	0	0	0.01	0.01	0.07	0	0	0	0	0	30	12	21
2/20/2022	0	0	0	0	0	0	0	0	0	0	0	45	12	29
2/21/2022	0	0	0	0	0	0	0	0	0	0	0	48	30	39
2/22/2022	0.13	0.08	0.14	0.15	0.12	0.17	0.09	0.13	0.12	0.18	0.12	55	36	46
2/23/2022	0	0	0	t	0	0	0	0	0	0	0	36	19	28
2/24/2022	0	0.01	0	0.04	0.02	0.01	0.02	0	0.02	0.02	0.01	28	19	24
2/25/2022	0.04	0.11	0.05	0.06	0.03	0.11	0.06	0.03	0.10	0.07	0.07	27	20	24
2/26/2022	0	0	0	t	0	0	0	0	0	0	0	32	20	26
2/27/2022	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	34	25	30
Total	1.98	2.07	2.19	2.61	2.11	3.16	2.10	1.99	2.58	2.58	2.73	35	18	26

Legend

X.XX*	Missing or suspect data.
t	

**Table 5-5
Daily Precipitation for March 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
3/1/2022	0	0	0	0	0	0	0	0	0	0	0	51	30	41
3/2/2022	0.01	0.03	0.01	0.01	0.01	0.03	0.01	0.01	0.01	0.03	0.01	46	25	36
3/3/2022	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	40	19	30
3/5/2022	0	0	0	0	0	0	0	0	0	0	0	61	31	46
3/6/2022	0	0.01	0.01	0.03	0.04	0.01	0.03	0.02	0.03	0.02	0.04	62	36	49
3/7/2022	0.39	0.46	0.39	0.38	0.38	0.46	0.35	0.37	0.37	0.37	0.36	38	32	35
3/8/2022	0	0	0	t	0	0	0	0	0	0	0	40	29	35
3/9/2022	0	0	0	0	0	0	0	0	0	0	0	47	27	37
3/10/2022	0	0	0	0	0	0	0	0	0	0	0	42	26	34
3/11/2022	0.03	0.07	0.05	0.06	0.04	0.07	0.06	0.05	0.05	0.06	0.06	33	25	29
3/12/2022	0	0	0	t	0	0	0	0	0	0	0	25	14	20
3/13/2022	0.02	0.05	0.02	0.08	0.03	0.05	0	0.01	0	0.04	0.03	46	14	30
3/14/2022	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	52	34	43
3/16/2022	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	72	37	55
3/18/2022	0.46	0.30	0.30	0.42	0.28	0.30	0.31	0.35	0.32	0.39	0.37	55	44	50
3/19/2022	0.17	0.37	0.14	0.25	0.30	0.37	0.39	0.29	0.29	0.12	0.30	50	39	45
3/20/2022	0	0.01	0	t	0	0.01	0.01	0	0.01	0	0.01	59	38	49
3/21/2022	0	0	0	0	0	0	0	0	0	0	0	62	38	50
3/22/2022	0.19	0.23	0.21	0.25	0.19	0.23	0.16	0.18	0.19	0.20	0.16	45	38	42
3/23/2022	0.53	0.70	0.56	0.56	0.58	0.70	0.59	0.61	0.51	0.49	0.48	49	40	45
3/24/2022	0	0	0	t	0	0	0	0	0	0	0	50	43	47
3/25/2022	0.03	0.11	0.03	0.02	0.03	0.11	0.02	0.03	0.06	0.09	0.03	47	39	43
3/26/2022	0	0.10	0.02	0.02	0.06	0.10	0.06	0.02	0.07	0.06	0.04	40	28	34
3/27/2022	0	0	0	t	0	0	0	0	0	0	0	32	23	28
3/28/2022	0	0	0	t	0	0	0	0	0	0	0	30	20	25
3/29/2022	0	0	0	0	0	0	0	0	0	0	0	40	18	29
3/30/2022	0.22	0.26	0.24	0.09	0.22	0.26	0.21	0.19	0.21	0.24	0.22	62	31	47
3/31/2022	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	65	37	51
Total	2.06	2.72	2.00*	2.18	2.18	2.72	2.21	2.15	2.14	2.13	2.13	48	30	39

Legend

X.XX*	Missing or suspect data.
t	

**Table 5-6
Daily Precipitation for April 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
4/1/2022	0	0	0	t	0	0	0	0	0	0	0	42	33	38
4/2/2022	0.08	0.06	0.07	0.09	0.04	0.06	0.03	0.03	0.03	0.15	0.02	45	28	37
4/3/2022	0.11	0.21	0.12	0.09	0.14	0.21	0.14	0.12	0.17	0.08	0.16	46	34	40
4/4/2022	0.27	0.29	0.28	0.21	0.27	0.29	0.21	0.22	0.26	0.28	0.25	43	36	40
4/5/2022	0	0	0	0	0	0	0	0	0	0	0	57	33	45
4/6/2022	0.25	0.25	0.28	0.24	0.22	0.25	0.19	0.23	0.23	0.26	0.26	54	43	49
4/7/2022	0.01	0	0.01	t	0	0	0	0	0	0	0	51	40	46
4/8/2022	0.04	0.06	0.01	0.04	0.13	0.06	0.10	0.06	0.04	0.07	0.11	49	39	44
4/9/2022	0.01	0.01	0.01	t	0	0.01	0	0.01	0.01	0	0.01	42	34	38
4/10/2022	0	0	0	0	0	0	0	0	0	0	0	54	35	45
4/11/2022	0.01	0.07	0.02	0.02	0.06	0.07	0.04	0.04	0.04	0.08	0.05	70	42	56
4/12/2022	0	0	0	0	0	0	0	0	0	0	0	63	39	51
4/13/2022	0.17	0.13	0.19	0.14	0.12	0.13	0.04	0.10	0.11	0.11	0.10	70	54	62
4/14/2022	0.04	0.07	0.03	0.04	0.03	0.07	0.05	0.04	0.06	0.05	0.07	67	43	55
4/15/2022	0.08	0.12	0.08	0.12	0.09	0.12	0.08	0.10	0.08	0.09	0.10	54	45	50
4/16/2022	0.02	0.03	0.03	t	0.03	0.03	0.04	0.03	0.02	0.01	0.05	49	35	42
4/17/2022	0	0	0	0	0	0	0	0	0	0	0	42	29	36
4/18/2022	0.36	0.48	0.43	0.41	0.39	0.48	0.39	0.38	0.38	0.43	0.41	39	33	36
4/19/2022	0.01	0	0.01	t	0	0	0.02	0.04	0.02	0.05	0.06	46	35	41
4/20/2022	0	0	0	t	0	0	0	0	0	0	0	51	30	41
4/21/2022	0.08	0.10	0.10	0.07	0.07	0.10	0.04	0.07	0.08	0.09	0.10	67	48	58
4/22/2022	0.10	0.07	0.11	0.26	0.11	0.07	0.11	0.11	0.08	0.11	0.13	54	42	48
4/23/2022	0.84	0.74	0.90	0.71	0.78	0.74	0.79	1.05	0.64	0.58	0.72	77	44	61
4/24/2022	0.24	0.12	0.19	0.24	0.16	0.12	0.10	0.17	0.10	0.08	0.12	83	60	72
4/25/2022	0.07	0.14	0.09	0.07	0.13	0.14	0.12	0.13	0.11	0.18	0.13	67	50	59
4/26/2022	0	0	0	t	0	0	0	0	0	0*	0	49	37	43
4/27/2022	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	54	30	42
4/29/2022	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	61	44	53
Total	2.79	2.95	2.96	2.75	2.77	2.95	2.49	2.93	2.46	2.70	2.85	55	39	47

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

**Table 5-7
Daily Precipitation for May 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
5/1/2022	0.56	0.58	0.42	0.61	0.55	0.58	0.53	0.47	0.65	0.51	0.51	68	48	58
5/2/2022	0	0	0	0	0	0	0	0	0	0	0	57	51	54
5/3/2022	0.90	0.80	1.01	0.83	0.68	0.80	0.73	0*	0.78	0.79	0.80	54	50	52
5/4/2022	0.01	0.03*	0.02	0.02	0	0.03	0.01	0*	0.02	0.01	0.02	62	47	55
5/5/2022	0.09	0.11	0.10	0.11	0.10	0.11	0.09	0*	0.10	0.10	0.09	61	41	51
5/6/2022	0.09	0.11	0.08	0.13	0.07	0.11	0.07	0.03*	0.11	0.07	0.08	61	50	56
5/7/2022	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	67	44	56
5/9/2022	0	0	0	0	0	0	0	0	0	0	0	72	49	61
5/10/2022	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	82	62	72
5/12/2022	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	0	82	60	71
5/14/2022	0	0	0	0	0	0	0	0	0	0	0	81	62	72
5/15/2022	0.03	0.14	0.05	0.36	0.33	0.14	0.26	0.15	0.12	0.09	0.12	87	61	74
5/16/2022	0.50	1.12	0.66	0.71	0.88	1.12	0.98	0.93	0.95	0.82*	0.93	77	55	66
5/17/2022	0	0	0	0	0	0	0	0	0	0	0	69	53	61
5/18/2022	0.41	0.42	0.39	0.36	0.37	0.42	0.32	0.35	0.38	0.39	0.33	58	50	54
5/19/2022	0	0	0	0	0	0	0	0	0	0*	0	82	56	69
5/20/2022	0	0	0	0	0	0	0	0	0	0*	0	87	66	77
5/21/2022	0.04	0.09	0.06	0.12	0.10	0.09	0.06	0.08	0.06	0.09	0.08	81	66	74
5/22/2022	0	0	0	0	0	0	0	0	0	0	0	68	53	61
5/23/2022	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	73	45	59
5/25/2022	0.06	0.07	0*	0.28	0.05	0.07	0.03	0.01	0.07	0.25	0.02	71	52	62
5/26/2022	0.31	0.94	0*	0.27	0.69	0.94	0.61	0.66	0.88	0.56	0.81	76	63	70
5/27/2022	0.29	0.01	0*	0.01	0.15	0.01	0.21	0.04	0.03	0.21*	0.08	78	57	68
5/28/2022	0	0	0	0	0	0	0	0	0	0	0	75	55	65
5/29/2022	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	88	64	76
5/31/2022	0	0	0.01	0	0	0	0	0	0	0*	0	90	68	79
Total	3.29	4.42	2.80	3.81	3.97	4.42	3.90	2.72*	4.15	3.89	3.87	74	55	64

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

**Table 5-8
Daily Precipitation for June 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
6/1/2022	0.17	0.24	0.11	0.21	0.28	0.24	0.22	0.17	0.19	0.16	0.14	82	59	71
6/2/2022	0.01	0.01	0.02	0.01	0	0.01	0.01	0	0.02	0.01	0.01	75	54	65
6/3/2022	0	0	0	0	0.08	0	0	0	0	0	0	80	53	67
6/4/2022	0	0	0	0	0	0	0	0	0	0	0	72	50	61
6/5/2022	0.01	0	0	t	0	0	0	0	0	0	0	75	59	67
6/6/2022	0.31	0.23	0.30	0.58	0.24	0.23	0.27	0.29	0.35	0.61	0.36	81	58	70
6/7/2022	0.49	1.19	0.65	0.34	0.55	1.19	0.63	1.14	1.05	0.31	0.93	73	60	67
6/8/2022	0.58	0.63	0.67	0.73	0.64	0.63	0.73	0.32	0.66	0.61	0.65	70	53	62
6/9/2022	0	0.12	0.06	t	0.08	0.12	0.10	0.11	0.20	0.01	0.14	74	53	64
6/10/2022	0.01	0.03	0.03	0.02	0.01	0.03	0.02	0.02	0.01	0.05	0.05	77	54	66
6/11/2022	0	0	0.01	t	0	0	0	0.01	0	0	0.01	78	58	68
6/12/2022	0	0	0	t	0	0	0.01	0	0	0	0.02	83	64	74
6/13/2022	0.06	0.04	0.03	0.03	0.02	0.04	0	0	0.02	0.05	0.01	81	60	71
6/14/2022	0.39	0.44	0.35	0.32	0.36	0.44	0.43	0.15	0.34	0.37	0.26	82	63	73
6/15/2022	0	0	0	0	0	0	0	0	0	0	0	94	68	81
6/16/2022	0.04	0.08	0.04	0.02	0	0.08	0	0	0	0.05	0	91	77	84
6/17/2022	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	73	53	63
6/19/2022	0	0	0	0	0	0	0	0	0	0	0	78	50	64
6/20/2022	0.03	0.02	0.02	0.03	0.01	0.02	0.02	0	0.02	0.03	0.03	86	61	74
6/21/2022	0	0	0	0	0	0	0	0	0	0	0	96	63	80
6/22/2022	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	83	59	71
6/24/2022	0	0	0	0	0	0	0	0	0	0	0	87	60	74
6/25/2022	0	0	0	0.05	0	0	0	0	0	0	0	88	65	77
6/26/2022	0.03	0.02	0.05	0.01	0	0.02	0.03	0	0.02	0.03	0.02	86	67	77
6/27/2022	0	0	0	0	0	0	0	0	0	0	0	77	60	69
6/28/2022	0	0	0	0	0	0	0	0*	0	0	0	80	52	66
6/29/2022	0	0	0	t	0	0	0	0	0	0	0	83	61	72
6/30/2022	0	0	0	0	0	0	0	0	0	0	0	91	64	78
Total	2.13	3.05	2.34	2.35	2.27	3.05	2.47	2.21	2.88	2.29	2.63	82	60	71

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

**Table 5-9
Daily Precipitation for July 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
7/1/2022	0.07	0.09	0.09	0.06	0	0.09	0.08	0.06	0.12	0.14	0.06	87	67	77
7/2/2022	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	83	63	73
7/4/2022	0	0	0	0	0	0	0	0	0	0	0	91	64	78
7/5/2022	0.05	0.30	0.39	0.44	0.32	0.30	0.27	0.47	0.37	0.47	0.42	90	70	80
7/6/2022	0.06	0.30	0.22	0.20	0.06	0.30	0.02	0.19	0.55	0.27	0.32	76	66	71
7/7/2022	0	0	0	0	0*	0	0.03	0	0	0	0	85	60	73
7/8/2022	0.10	0.02	0.32	0.32	0*	0.02	0.12	0.14	0.05	0	0.04	85	64	75
7/9/2022	0	0	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	0	82	56	69
7/11/2022	0	0	0	0	0*	0	0	0	0	0	0	86	61	74
7/12/2022	0	0	0	t	0*	0	0	0	0	0	0	85	68	77
7/13/2022	0.04	0.10	0.04	0.06	0*	0.10	0.07	0.15	0.27	0.29	0.11	78	62	70
7/14/2022	0	0	0	0	0*	0	0	0	0	0	0	83	56	70
7/15/2022	0.05	0.02	0.04	0.02	0*	0.02	0.01	0.03	0.01	0.01	0	81	61	71
7/16/2022	0	0	0	t	0*	0	0	0	0	0.01	0	82	67	75
7/17/2022	0.02	0.06	0.08	0.04	0*	0.06	0.06	0.03	0.03	0.06	0.05	80	69	75
7/18/2022	0	0	0	t	0*	0	0.04	0.01	0.02	0.05	0.08	89	69	79
7/19/2022	0	0	0	0	0*	0	0	0	0	0	0	93	66	80
7/20/2022	0.02	0.06	0.09	0.23	0*	0.06	0.11	0.18	0.05	0.06	0.15	92	74	83
7/21/2022	0.10	0.01	0.21	0.29	0*	0.01	0	0	0.02	0.25	0	90	70	80
7/22/2022	0.01	0.35	0.30	0	0*	0.35	0.22	0.21	0.09	0	0.06	89	68	79
7/23/2022	0.04	0	0.03	0.15	0*	0	0.02	0.01	0.01	0.14	0.01	88	70	79
7/24/2022	0.09	0.18	0.30	0.04	0*	0.18	0.16	0.25	0.13	0.09	0.15	89	70	80
7/25/2022	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	82	61	72
7/27/2022	0	0.01	0	0.01	0*	0.01	0	0.10	0.01	0.01	0	84	65	75
7/28/2022	0	0.07	0	0	0*	0.07	0	0	0	0	0	86	68	77
7/29/2022	0	0	0	0	0*	0	0.10	0	0	0	0	83	58	71
7/30/2022	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	84	63	74
Total	0.65	1.57	2.11	1.86	0.38*	1.57	1.31	1.83	1.73	1.85	1.45	85	64	75

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-10
Daily Precipitation for August 2022

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
8/1/2022	0	0	0	t	0*	0	0	0	0	0	0.01	88	66	77
8/2/2022	0.10	0	0	0	0.10	0	0	0	0	0	0	85	66	76
8/3/2022	0.60	0.64	0.65	0.48	0.41	0.64	0.49	0.51	0.39	0.45	0.43	95	69	82
8/4/2022	0.02	0.47	0.92	0.47	0.96	0.47	1.06	0.68	0.73	0.47*	0.25	85	71	78
8/5/2022	0.01	0.01	0	0.04	0.02	0.01	0.04	0	0.08	0.08*	0.01	87	71	79
8/6/2022	0	0	0	0	0	0	0	0	0	0*	0	90	72	81
8/7/2022	0	0	0	0.02	0.02	0	0	0	0	0	0	92	73	83
8/8/2022	0.02	0.09	0.02	0.06	0.05	0.09	0.05	0.22	0.06	0.04	0.12	89	69	79
8/9/2022	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	84	64	74
8/11/2022	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	82	55	69
8/13/2022	0	0	0	t	0	0	0	0	0	0	0	73	60	67
8/14/2022	0	0	0	t	0	0	0	0	0	0	0	73	63	68
8/15/2022	0	0	0	t	0	0	0	0	0	0	0	84	65	75
8/16/2022	0	0	0	0	0	0	0	0	0	0	0	83	63	73
8/17/2022	0.58	0.09	0	0.07	0.61	0.09	0.09	0	0	0	0	83	61	72
8/18/2022	0.78	0	0.36	0.14	0.01	0	0.20	0.01	0	0*	0.21	86	60	73
8/19/2022	0	0	0.01	0	0	0	0	0	0	0*	0.01	87	60	74
8/20/2022	0.04	0.08	0.07	0.05	0.04	0.08	0.05	0.03	0.05	0*	0.07	83	67	75
8/21/2022	0.45	1.27	0.75	0.72	0.74	1.27	0.78	0.87	1.22	0*	1.00	80	65	73
8/22/2022	0	0.01	0.01	0	0.01	0.01	0.01	0.01	0.01	0*	0.01	83	64	74
8/23/2022	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	87	64	76
8/25/2022	0	0	0	t	0	0	0	0	0	0	0	86	66	76
8/26/2022	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	80	58	69
8/28/2022	0	0	0	0	0	0	0	0	0	0	0	87	61	74
8/29/2022	0	0	0	0.26	0	0	0	0	0	0	0	90	68	79
8/30/2022	0	0	0	0.01	0	0	0	0	0	0	0	82	65	74
8/31/2022	0	0	0	0	0	0	0	0	0	0	0	84	59	72
Total	2.60	2.66	2.79	2.32	2.97	2.66	2.77	2.33	2.54	1.04*	2.12	84	64	74

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

**Table 5-11
Daily Precipitation for September 2022**

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
9/1/2022	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	86	65	76
9/3/2022	0	0	0	0	0	0	0	0	0	0	0	89	67	78
9/4/2022	0	0	0	t	0	0.02	0.01	0	0.01	0.03	0.03	73	65	69
9/5/2022	0	0	0	t	0	0	0	0	0	0	0	76	64	70
9/6/2022	0	0	0	0	0	0	0	0	0	0	0	79	63	71
9/7/2022	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	83	55	69
9/9/2022	0	0	0	0	0	0	0	0	0	0	0	84	56	70
9/10/2022	0	0	0	0	0	0	0	0	0	0	0	84	65	75
9/11/2022	0.07	0.24	0.25	0.06	0.21	0.01	0.23	0.27	0.08	0.08	0.05	77	68	73
9/12/2022	0	0.01	0	t	0.01	0.05	0.19	0.19	0.09	0.11	0.20	70	58	64
9/13/2022	0	0.06	0	0	0	0	0.01	0	0.01	0	0	76	56	66
9/14/2022	0	0	0	0	0	0	0.01	0	0.01	0	0	84	58	71
9/15/2022	0	0	0	0	0	0	0	0	0	0	0	73	59	66
9/16/2022	0	0	0	0	0	0	0	0	0	0	0	83	57	70
9/17/2022	0	0	0	0	0	0	0	0	0	0	0	86	61	74
9/18/2022	0	0	0	t	0	0	0	0	0	0	0	87	67	77
9/19/2022	0.14	0.11	0.11	0.11	0.09	0*	0.11	0.11	0.07	0.07	0.10	84	63	74
9/20/2022	0.36	0.35	0.48	0.51	0.33	0*	0.37	0.62	0.34	0.31	0.60	80	59	70
9/21/2022	0.18	0.17	0.06	0.01	0.26	0*	0.16	0.28	0.19	0.22	0.51	89	63	76
9/22/2022	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	66	43	55
9/24/2022	0.04	0.08	0.05	0.06	0.02	0*	0.01	0.01	0.03	0.02	0.01	68	52	60
9/25/2022	0.20	0.22	0.30	0.24	0.23	0*	0.17	0.27	0.19	0.17	0.15	65	54	60
9/26/2022	0.07	0.01	0.01	t	0.02	0*	0.02	0.01	0.01	0.01	0.01	64	51	58
9/27/2022	0	0	0	0	0	0	0	0	0	0	0	64	48	56
9/28/2022	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	61	46	54
9/30/2022	0	0	0	0	0	0	0	0	0	0	0	67	42	55
Total	1.06	1.25	1.26	0.99	1.17	0.08*	1.29	1.76	1.03	1.02	1.66	76	57	67

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-12
Daily Precipitation for October 2022

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
10/1/2022	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	67	46	57
10/3/2022	0	0	0	0	0	0	0	0	0	0	0	65	41	53
10/4/2022	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	78	46	62
10/6/2022	0	0	0	t	0	0	0	0	0	0	0	79	53	66
10/7/2022	0	0	0	0.10	0	0	0	0	0	0	0	53	41	47
10/8/2022	0	0	0	0	0	0	0	0	0	0	0	57	33	45
10/9/2022	0	0	0	0.01	0	0	0	0	0	0	0	68	39	54
10/10/2022	0	0	0	t	0.01	0	0	0	0.01	0	0	69	47	58
10/11/2022	0.01	0	0.01	t	0	0	0	0	0	0	0	78	47	63
10/12/2022	0.05	0.03	0.03	0.04	0.03	0.01	0.03	0.03	0.02	0.02	0.02	72	51	62
10/13/2022	0	0	0	t	0	0	0.01	0	0	0	0	59	39	49
10/14/2022	0	0	0	0	0	0	0	0	0	0	0	62	36	49
10/15/2022	0	0	0	0.03	0	0	0	0	0	0	0	55	37	46
10/16/2022	0	0	0	0	0	0	0	0	0	0	0	62	36	49
10/17/2022	0.09	0.10	0.06	0.09	0.06	0*	0.05	0.06	0.04	0.05	0.06	47	40	44
10/18/2022	0.02	0.01	0.01	0.07	0.03	0*	0.04	0.06	0.03	0.04	0.07	43	39	41
10/19/2022	0.01	0	0	t	0.01	0*	0	0.01	0	0	0.01	49	37	43
10/20/2022	0	0	0	0.02	0	0*	0.01	0.02	0	0.01	0.01	44	35	40
10/21/2022	0	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	74	46	60
10/23/2022	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	77	50	64
10/25/2022	0.02	0.01	0	0.02	0.05	0*	0.03	0.03	0.06	0.02	0.01	73	54	64
10/26/2022	0.21	0.30	0.33	0.29	0.24	0*	0.21	0.23	0.15	0.13	0.16	61	44	53
10/27/2022	0	0	0	0	0	0*	0	0.01	0	0	0	53	35	44
10/28/2022	0	0	0	0	0	0	0	0	0	0	0	60	38	49
10/29/2022	0	0	0	0	0	0	0	0	0	0	0	64	36	50
10/30/2022	0	0.01	0	0.03	0	0	0	0	0	0	0	61	38	50
10/31/2022	0.34	0.51	0.47	0.45	0.44	0.22	0.49	0.46	0.53	0.63	0.53	63	52	58
Total	0.75	0.97	0.91	1.15	0.87	0.23*	0.87	0.91	0.84	0.90	0.87	64	42	53

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-13
Daily Precipitation for November 2022

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
11/1/2022	0	0	0	t	0	0	0	0	0	0	0	70	49	60
11/2/2022	0	0	0	0	0	0	0	0	0	0	0	69	43	56
11/3/2022	0	0	0	0	0	0	0	0	0	0	0	69	42	56
11/4/2022	0	0	0	0	0	0	0	0	0	0	0	74	50	62
11/5/2022	0.02	0	0	t	0	0.01	0	0	0	0	0	74	56	65
11/6/2022	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	59	40	50
11/8/2022	0	0	0	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	66	39	53
11/10/2022	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	63	39	51
11/12/2022	0.10	0.13	0.12	0.14	0.15	0.24	0.12	0.14	0.18	0.26	0.19	39	33	36
11/13/2022	0	0	0	t	0	0	0	0	0	0.01	0	40	32	36
11/14/2022	0	0	0	0	0	0	0	0	0	0	0	41	32	37
11/15/2022	0.08	0.06	0.05	0.10	0.09	0.14	0.09	0.11	0.11	0.14	0.11	38	33	36
11/16/2022	0	0	0	t	0	0	0.01	0.01	0	0.01	0.01	39	34	37
11/17/2022	0	0	0	t	0	0	0	0	0	0	0	35	26	31
11/18/2022	0	0	0	t	0	0	0	0	0	0	0	33	24	29
11/19/2022	0	0.01	0	0.05	0.03	0	0	0.01	0.03	0	0	30	21	26
11/20/2022	0	0.01	0	0.01	0	0.02	0	0	0	0	0	26	16	21
11/21/2022	0	0	0	0	0	0.01	0	0	0	0.03	0	45	16	31
11/22/2022	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	55	24	40
11/24/2022	0.04	0.06	0.05	0.05	0.05	0.07	0.05	0.04	0.05	0.05	0.05	57	26	42
11/25/2022	0	0	0	t	0	0	0	0	0	0	0	52	36	44
11/26/2022	0	0	0	0	0	0	0	0	0	0	0	54	29	42
11/27/2022	0.86	0.99	1.02	1.04	0.96	1.20	1.02	1.02	1.07	0.96	1.01	43	37	40
11/28/2022	0	0	0	0	0	0	0	0	0	0	0	43	35	39
11/29/2022	0	0.01	0.01	0.01	0.02	0	0.01	0.02	0	0.01	0.01	53	40	47
11/30/2022	0.16	0.10	0.11	0.12	0.10	0.20	0.09	0.09	0.13	0.10	0.12	54	30	42
Total	1.26	1.37	1.36	1.52	1.40	1.89	1.39	1.44	1.57	1.57	1.50	53	35	44

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

Table 5-14
Daily Precipitation for December 2022

Date	Daily Precipitation (inches)											DTW Daily Temperature (°F)		
	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
12/1/2022	0	0	0	t	0	0	0	0	0	0	0	39	27	33
12/2/2022	0	0	0	0	0	0	0	0	0	0	0	53	31	42
12/3/2022	0.01	0.03	0.02	0.03	0.02	0.06	0.02	0.07	0.02	0.03	0.03	53	26	40
12/4/2022	0	0	0	0	0	0	0	0	0	0	0	37	20	29
12/5/2022	0	0	0	0	0	0	0	0	0	0	0	45	25	35
12/6/2022	0	0	0	0.01	0	0	0	0	0	0	0	47	40	44
12/7/2022	0.01	0	0.02	0.01	0.01	0	0.01	0.02	0.01	0	0.02	47	42	45
12/8/2022	0	0	0	0	0	0	0	0	0	0	0	44	34	39
12/9/2022	0	0	0	t	0	0	0	0	0	0	0	38	32	35
12/10/2022	0	0	0	t	0	0	0	0	0	0	0	37	32	35
12/11/2022	0	0	0	t	0	0	0	0	0	0	0	41	35	38
12/12/2022	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	35	30	33
12/14/2022	0	0	0	0	0	0	0	0	0	0	0	41	32	37
12/15/2022	0.57	0.62	0.69	0.74	0.58	0.79	0.59	0.67	0.69	0.68	0.70	45	36	41
12/16/2022	0	0	0	t	0	0	0	0	0	0	0	36	30	33
12/17/2022	0	0	0	t	0	0	0	0	0	0	0	31	27	29
12/18/2022	0	0	0	t	0	0	0	0	0	0	0	28	23	26
12/19/2022	0	0	0	t	0	0	0	0	0	0	0	30	24	27
12/20/2022	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	33	22	28
12/22/2022	0.24	0.21	0.28	0.25	0.27	0.28	0.24	0.27	0.23	0.25	0.24	41	30	36
12/23/2022	0	0.02	0	0.11	0	0.03	0	0	0.01	0.01	0.01	34	0	17
12/24/2022	0	0	0	0.02	0	0	0	0	0	0	0	15	1	8
12/25/2022	0	0	0	0.05	0.01	0.02	0	0	0	0	0.02	16	12	14
12/26/2022	0	0	0	t	0	0	0	0	0	0	0	22	13	18
12/27/2022	0	0	0	t	0	0	0	0	0	0	0	29	19	24
12/28/2022	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	53	33	43
12/30/2022	0.59	0.63	0.66	0.62	0.61	0.67	0.56	0.61	0.54	0.62	0.63	55	47	51
12/31/2022	0.41	0.47	0.50	0.50	0.51	0.67	0.55	0.55	0.57	0.59	0.62	47	37	42
Total	1.83	1.98	2.17	2.34	2.01	2.52	1.97	2.19	2.07	2.18	2.27	38	27	33

Legend

X.XX*	Missing or suspect data
t	Trace amount of precipitation (less than 0.01 inches)

**Table 5-15
Summary of Precipitation Data for Significant Storm Events**

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

Significant Event No. ¹	Major Storm Event ²	DWTF Peak Hourly Flow Rate (cfs)	Start Date	Stop Date	Preceding Week Rainfall (inches)	Event Precipitation Depth (inches)				Coefficient of Variation ⁴
						Minimum	Average ³	Maximum	Std. Dev	
1	-	228	2/16/2022	2/18/2022	0.18	1.05	1.22	1.50	0.15	13%
2	-	190	5/15/2022	5/16/2022	0.00	0.53	1.03	1.26	0.24	23%
3	-	155	6/6/2022	6/7/2022	0.22	0.79	1.11	1.43	0.28	25%
4	-	147	8/3/2022	8/4/2022	0.04	0.62	1.11	1.57	0.31	28%
5	-	132	11/27/2022	11/27/2022	0.05	0.86	1.01	1.20	0.08	8%
6	-	184	12/30/2022	12/31/2022	0.01	1.00	1.15	1.33	0.09	8%

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 gauges used in the analysis for that storm.
- 2) Major storm events are a subgroup of significant storm events which result in the peak hourly influent flow rate to the DWTF reaching or exceeding 175 MGD (271 cfs).
- 3) The average precipitation value is an arithmetic average of the collection of point gauges.
- 4) The coefficient of variation 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 coefficient of variation means the storm event was spatially uniform over the district, high coefficient of variation means the storm event was highly variable over the district.

6) PEAK FLOW RATES FOR CONTROLLED FLOW COMMUNITIES

Table 6-1 lists the peak hourly flow rates for the flow meters along the Riverdrive Interceptor for each significant/major storm event. The wet weather MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017) are also given. These MAFLs are used to check whether or not the incoming flow rates are being regulated properly for the significant/major storm events. Exceedances of the MAFLs are highlighted (if any).

Incremental peak hourly flow rates are estimated if the total peak hourly flow rates for the flow meters exceed the MAFLs by 5% or more. Table 6-2 lists the incremental peak hourly flow rates for the flow meters along the Riverdrive Interceptor for these events. The incremental wet weather MAFLs from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017) are also given. Exceedances of the incremental MAFLs are highlighted (if any).

Appendix D includes hydrographs at select locations for the major storm events.

**Table 6-1
Peak Hourly Flow Rates by Meter for Controlled Flow Communities**

Meter =		RR-1		EC-6		RD-1		SW	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]+[SWB]	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Communities Included in Total Flow =		River Rouge		River Rouge, Ecorse, & Lincoln Park (part)		River Rouge, Ecorse, Lincoln Park (part), & Allen Park (part)		Southgate (part) & Wyandotte	
Total Wet Weather MAFL =		11.26 cfs		23.46 cfs		65.82 cfs		31.73 cfs	
		Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume
Significant Storm Event 1 February 16-18, 2022 1.22 inches	Start of First Exceedence	2/17/22 8:20	--	2/17/22 6:05	--	--	--	2/16/22 13:50	--
	End of Last Exceedence	2/17/22 23:35	--	2/17/22 17:35	--	--	--	2/17/22 5:10	--
	Total Time of Exceedence	12:35	--	11:25	--	--	--	14:40	--
	Total Volume Above MAFL	--	0.14 MG	--	0.29 MG	--	--	--	1.84 MG
	Peak Hourly Flow Rate	2/17/22 21:05	11.97 cfs	2/17/22 11:55	26.15 cfs	2/17/22 11:55	62.07 cfs	2/16/22 23:35	42.40 cfs
Significant Storm Event 2 May 15-16, 2022 1.03 inches	Start of First Exceedence	--	--	--	--	--	--	5/15/22 22:00	--
	End of Last Exceedence	--	--	--	--	--	--	5/17/22 3:55	--
	Total Time of Exceedence	--	--	--	--	--	--	6:10	--
	Total Volume Above MAFL	--	--	--	--	--	--	--	1.31 MG
	Peak Hourly Flow Rate	5/16/22 7:05	10.98 cfs	5/16/22 5:10	21.47 cfs	5/16/22 16:30	58.29 cfs	5/16/22 1:30	51.19 cfs
Significant Storm Event 3 June 6-7, 2022 1.11 inches	Start of First Exceedence	--	--	6/7/22 0:30	--	--	--	6/6/22 16:10	--
	End of Last Exceedence	--	--	6/7/22 4:10	--	--	--	6/6/22 22:55	--
	Total Time of Exceedence	--	--	3:45	--	--	--	4:05	--
	Total Volume Above MAFL	--	--	--	0.15 MG	--	--	--	0.49 MG
	Peak Hourly Flow Rate	6/7/22 5:50	10.93 cfs	6/7/22 1:30	25.77 cfs	6/7/22 0:55	62.18 cfs	6/6/22 16:55	41.16 cfs

Notes:

1. The Wet Weather MAFLs for Controlled Flow Communities are from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017). The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The MAFLs for each community are listed below:
 - i. The MAFL for River Rouge at RR-1 is 11.26 cfs.
 - ii. The MAFL for Ecorse at EC-6 is 9.20 cfs.
 - iii. The MAFL for Lincoln Park is 28.16 cfs.
 - iv. The MAFL for Lincoln Park is divided between two meters 3.00 cfs at EC-6 and 25.16 cfs at RD-1. The Reg-U-Flo Vortex Valve on the Applewood connection restricts Lincoln Parks flow rate to about 3.00 cfs.
 - v. The MAFL for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.
 - vi. The MAFL for Southgate at SW is 7.67 cfs.
 - vii. The MAFL for Wyandotte at SW is 24.06 cfs.

Legend:

XX.XX	Exceeds wet weather MAFL by 0 to 5%
XX.XX	Exceeds wet weather MAFL by > 5%
XX.XX	Exceeds wet weather MAFL, coordinated with Veolia

Table 6-1 continued
Peak Hourly Flow Rates by Meter for Controlled Flow Communities

Meter =		RR-1		EC-6		RD-1		SW	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]+[SWB]	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Communities Included in Total Flow =		River Rouge		River Rouge, Ecorse, & Lincoln Park (part)		River Rouge, Ecorse, Lincoln Park (part), & Allen Park (part)		Southgate (part) & Wyandotte	
Total Wet Weather MAFL =		11.26 cfs		23.46 cfs		65.82 cfs		31.73 cfs	
		Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume
Significant Storm Event 4 August 3-4, 2022 1.11 inches	Start of First Exceedence	--	--	--	--	--	--	8/3/22 18:15	--
	End of Last Exceedence	--	--	--	--	--	--	8/5/22 17:40	--
	Total Time of Exceedence	--	--	--	--	--	--	27:20	--
	Total Volume Above MAFL	--	--	--	--	--	--	--	3.79 MG
	Peak Hourly Flow Rate	8/5/22 1:55	9.70 cfs	8/5/22 1:35	13.06 cfs	8/5/22 0:05	48.54 cfs	8/3/22 21:00	45.90 cfs
Significant Storm Event 5 November 27, 2022 1.01 inches	Start of First Exceedence	11/27/22 15:25	--	--	--	--	--	11/27/22 7:55	--
	End of Last Exceedence	11/28/22 3:05	--	--	--	--	--	11/28/22 13:20	--
	Total Time of Exceedence	11:45	--	--	--	--	--	4:30	--
	Total Volume Above MAFL	--	0.29 MG	--	--	--	--	--	0.26 MG
	Peak Hourly Flow Rate	11/27/22 19:05	12.66 cfs	11/27/22 15:30	19.34 cfs	11/27/22 16:55	53.88 cfs	11/27/22 8:40	37.51 cfs
Significant Storm Event 6 December 30-31, 2022 1.15 inches	Start of First Exceedence	12/31/22 1:55	--	--	--	12/30/22 23:05	--	12/30/22 18:25	--
	End of Last Exceedence	12/31/22 17:20	--	--	--	12/31/22 12:15	--	12/31/22 15:05	--
	Total Time of Exceedence	15:25	--	--	--	13:15	--	11:25	--
	Total Volume Above MAFL	--	0.21 MG	--	--	--	1.98 MG	--	3.96 MG
	Peak Hourly Flow Rate	12/31/22 9:20	12.11 cfs	12/31/22 4:25	21.57 cfs	12/31/22 4:25	78.55 cfs	12/30/22 19:50	62.85 cfs

Notes:

1. The Wet Weather MAFLs for Controlled Flow Communities are from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017). The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to these flow limits. The MAFLs for each community are listed below:
 - i. The MAFL for River Rouge at RR-1 is 11.26 cfs.
 - ii. The MAFL for Ecorse at EC-6 is 9.20 cfs.
 - iii. The MAFL for Lincoln Park is 28.16 cfs.
 - iv. The MAFL for Lincoln Park is divided between two meters 3.00 cfs at EC-6 and 25.16 cfs at RD-1. The Reg-U-Flo Vortex Valve on the Applewood connection restricts Lincoln Parks flow rate to about 3.00 cfs.
 - v. The MAFL for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.
 - vi. The MAFL for Southgate at SW is 7.67 cfs.
 - vii. The MAFL for Wyandotte at SW is 24.06 cfs.

Legend:

XX.XX	Exceeds wet weather MAFL by 0 to 5%
XX.XX	Exceeds wet weather MAFL by > 5%
XX.XX	Exceeds wet weather MAFL, coordinated with Veolia

**Table 6-2
Incremental Peak Hourly Flow Rates by Meter District for Controlled Flow Communities**

Meter District =		RR-1		EC-6		RD-1		SW	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]+[SWB]	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Communities Included in Total Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
Incremental Wet Weather MAFL =		11.26 cfs		12.20 cfs		42.36 cfs		31.73 cfs	
		Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume
Significant Storm Event 1 February 16-18, 2022 1.22 inches	Start of First Exceedence	2/17/22 8:20	--	2/17/22 5:45	--	--	--	2/16/22 13:50	--
	End of Last Exceedence	2/17/22 23:35	--	2/17/22 16:30	--	--	--	2/17/22 5:10	--
	Total Time of Exceedence	12:35	--	10:50	--	--	--	14:40	--
	Total Volume Above MAFL	--	0.14 MG	--	0.32 MG	--	--	--	1.84 MG
	Peak Hourly Flow Rate	2/17/22 21:05	11.97 cfs	2/17/22 11:50	15.04 cfs	2/17/22 3:55	41.98 cfs	2/16/22 23:35	42.40 cfs
Significant Storm Event 2 May 15-16, 2022 1.03 inches	Start of First Exceedence	--	--	--	--	5/16/22 2:30	--	5/15/22 22:00	--
	End of Last Exceedence	--	--	--	--	5/17/22 2:00	--	5/17/22 3:55	--
	Total Time of Exceedence	--	--	--	--	5:55	--	6:10	--
	Total Volume Above MAFL	--	--	--	--	--	0.15 MG	--	1.31 MG
	Peak Hourly Flow Rate	5/16/22 7:05	10.98 cfs	5/16/22 3:10	11.36 cfs	5/16/22 16:30	45.46 cfs	5/16/22 1:30	51.19 cfs
Significant Storm Event 3 June 6-7, 2022 1.11 inches	Start of First Exceedence	--	--	6/6/22 23:55	--	6/7/22 0:20	--	6/6/22 16:10	--
	End of Last Exceedence	--	--	6/7/22 4:25	--	6/7/22 22:30	--	6/6/22 22:55	--
	Total Time of Exceedence	--	--	4:35	--	6:35	--	4:05	--
	Total Volume Above MAFL	--	--	--	0.38 MG	--	0.20 MG	--	0.49 MG
	Peak Hourly Flow Rate	6/7/22 5:50	10.93 cfs	6/7/22 0:40	18.52 cfs	6/7/22 21:35	45.38 cfs	6/6/22 16:55	41.16 cfs

Notes:

1. The Wet Weather MAFLs for Controlled Flow Communities are from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017).

The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The MAFLs for each community are listed below:

- i. The MAFL for River Rouge at RR-1 is 11.26 cfs.
- ii. The MAFL for Ecorse at EC-6 is 9.20 cfs.
- iii. The MAFL for Lincoln Park is 28.16 cfs.
- iv. The MAFL for Lincoln Park is divided between two meters 3.00 cfs at EC-6 and 25.16 cfs at RD-1. The Reg-U-Flo Vortex Valve on the Applewood connection restricts Lincoln Parks flow rate to about 3.00 cfs.
- v. The MAFL for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.
- vi. The MAFL for Southgate at SW is 7.67 cfs.
- vii. The MAFL for Wyandotte at SW is 24.06 cfs.

Legend:

XX.XX	Exceeds wet weather MAFL by 0 to 5%
XX.XX	Exceeds wet weather MAFL by > 5%
XX.XX	Exceeds wet weather MAFL, coordinated with Veolia

Table 6-2 continued
Incremental Peak Hourly Flow Rates by Meter District for Controlled Flow Communities

Meter District =		RR-1		EC-6		RD-1		SW	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]+[SWB]	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Communities Included in Total Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
Incremental Wet Weather MAFL =		11.26 cfs		12.20 cfs		42.36 cfs		31.73 cfs	
		Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume	Date/Time of Occurrence	Flow Rate / Volume
Significant Storm Event 4 August 3-4, 2022 1.11 inches	Start of First Exceedence	--	--	--	--	8/4/22 23:30	--	8/3/22 18:15	--
	End of Last Exceedence	--	--	--	--	8/5/22 0:35	--	8/5/22 17:40	--
	Total Time of Exceedence	--	--	--	--	1:10	--	27:20	--
	Total Volume Above MAFL	--	--	--	--	--	0.03 MG	--	3.79 MG
	Peak Hourly Flow Rate	8/5/22 1:55	9.70 cfs	8/5/22 1:00	5.23 cfs	8/5/22 0:00	43.99 cfs	8/3/22 21:00	45.90 cfs
Significant Storm Event 5 November 27, 2022 1.01 inches	Start of First Exceedence	11/27/22 15:25	--	11/27/22 14:30	--	--	--	11/27/22 7:55	--
	End of Last Exceedence	11/28/22 3:05	--	11/27/22 14:30	--	--	--	11/28/22 13:20	--
	Total Time of Exceedence	11:45	--	0:05	--	--	--	4:30	--
	Total Volume Above MAFL	--	0.29 MG	--	0.00 MG	--	--	--	0.26 MG
	Peak Hourly Flow Rate	11/27/22 19:05	12.66 cfs	11/27/22 14:30	12.21 cfs	11/27/22 14:35	37.03 cfs	11/27/22 8:40	37.51 cfs
Significant Storm Event 6 December 30-31, 2022 1.15 inches	Start of First Exceedence	12/31/22 1:55	--	--	--	12/30/22 22:30	--	12/30/22 18:25	--
	End of Last Exceedence	12/31/22 17:20	--	--	--	12/31/22 14:55	--	12/31/22 15:05	--
	Total Time of Exceedence	15:25	--	--	--	16:15	--	11:25	--
	Total Volume Above MAFL	--	0.21 MG	--	--	--	3.61 MG	--	3.96 MG
	Peak Hourly Flow Rate	12/31/22 9:20	12.11 cfs	12/31/22 4:25	9.99 cfs	12/31/22 4:25	57.27 cfs	12/30/22 19:50	62.85 cfs

Notes:

1. The Wet Weather MAFLs for Controlled Flow Communities are from the Downriver Utility Wastewater Authority Service Agreement (March 21, 2017). The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The MAFLs for each community are listed below:
 - i. The MAFL for River Rouge at RR-1 is 11.26 cfs.
 - ii. The MAFL for Ecorse at EC-6 is 9.20 cfs.
 - iii. The MAFL for Lincoln Park is 28.16 cfs.
 - iv. The MAFL for Lincoln Park is divided between two meters 3.00 cfs at EC-6 and 25.16 cfs at RD-1. The Reg-U-Flo Vortex Valve on the Applewood connection restricts Lincoln Parks flow rate to about 3.00 cfs.
 - v. The MAFL for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.
 - vi. The MAFL for Southgate at SW is 7.67 cfs.
 - vii. The MAFL for Wyandotte at SW is 24.06 cfs.

Legend:

XX.XX	Exceeds wet weather MAFL by 0 to 5%
XX.XX	Exceeds wet weather MAFL by > 5%
XX.XX	Exceeds wet weather MAFL, coordinated with Veolia

7) WET WEATHER VOLUMES FOR NON-CONTROLLED FLOW COMMUNITIES

The peak 96-hour wet weather volumes for the non-controlled flow communities during the major storm events were estimated using the flow monitoring data set. These volumes were compared to those for the 4.42-inch storm event used in the design of the Downriver tunnel system as given on Table 7-1. Exceedances of the peak 96-hour volumes allocated to each community during the major storm events during this reporting period are highlighted (if any). Table 7-2 lists the peak 96-hour incremental volumes for each community by meter district component. Table 7-3 lists the peak 96-hour incremental volumes for each meter district by community component. Table 7-4 lists the peak hourly flow rates and 96-hour volumes at each meter, and Table 7-5 lists the peak hydraulic grade lines at each meter for the major storm event.

8) METER DATA SUMMARY

The flow monitoring data were reviewed and edited as summarized on Table 8-1. The flow monitoring data is summarized in more detail in Appendix C. This appendix includes: charts detailing data and meter maintenance issues that occurred during these months, and average daily flow rate plots for each meter. Data for each meter was carried through the analysis with the following exceptions:

- Flow rates are recalculated to account for sediment deposits for Meter SW. Details of the flow rate recalculation are provided in the Wayne County Downriver Sewage Disposal System Annual System Monitoring Report for 2013.
- The incremental flow rates for Meter TPS + IPS and P-1 districts cannot be confidently and accurately calculated because they are too small relative to the total flow rate. Therefore, the incremental flow rates for the Meter TPS+IPS and P-1 districts were estimated using a ratio of each district's incremental population to the cumulative population of the upstream meters (Meters PC-1, PD-1, PB-1, PA-2 and P-2) multiplied by the sum of the cumulative district flow rates for Meters PC-1, PD-1, PB-1, PA-2 and P-2.
- Overflows to the DRSTS were calculated using the level sensor data and the previously developed ratings curves except for Meter TSO. The flow rates calculated with the area-velocity measurements were used for Meter TSO.

Table 7-1
Peak 96 Hour Total Volumes for Non-Controlled Flow Communities

Community	Total Volume (MG)	
	4.42 inch Design Storm	<i>No Major Storm Events</i>
Allen Park (part)	29.23	<i>No Major Storm Events</i>
Belleville	4.86	
Brownstown Twp.	20.90	
Dearborn Heights	43.76	
Riverview	28.30	
Romulus	88.43	
Southgate (part)	31.24	
Taylor	164.45	
Van Buren Twp.	7.04	
Total	418.21	

Legend:

XX.XX	Exceeds design storm volume by 0 to 20%
XX.XX	Exceeds design storm volume by > 20%

Table 7-2
Peak 96 Hour Total Volumes for Major Storm Events Summarized by Community

Community	Meter District	<i>No Major Storm Events</i>	
		Total Peak 96 Hour Incremental Volume (MG)	Peak 96 Hour Incremental Volume (MG)
Allen Park	PC-1	<i>No Major Storm Events</i>	
	P-1		
	RD-1		
	APO-1 + APO-2		
	Total		
Belleville	PA-4		
Brownstown Twp.	P-2		
	PA-2		
	Total		
Dearborn Hts.	TB-1		
Ecorse	EC-6		
Lincoln Park	EC-6		
	RD-1		
	Total		
River Rouge	RR-1		
Riverview	RV-1		
Romulus	DMA-1		
	PA-3		
	DMA-2		
	PD-2		
	Total		
Southgate	P-1		
	PB-1		
	SW		
	TPS+IPS		
	Total		
Taylor	P-2		
	PA-2		
	PB-1		
	TB-1		
	PC-1		
	PD-1		
	Total		
Van Buren Twp.	PA-4		
Wyandotte	SW		

**Table 7-3
Peak 96 Hour Total Volumes for Major Storm Events Summarized by Meter District**

Meter District	Incremental Meter District Formula	Community	Year 2020 Incremental Residential Population	Meter District Percentage	No Major Storm Events	
					Meter District Peak 96 Hour Volume (MG)	Peak 96 Hour Incremental Volume (MG)
APO-1 + APO-2	[APO-1]+[APO-2]	Allen Park	0	100.0%	No Major Storm Events	
DMA-1	[DMA-1]	Romulus	0	100.0%		
DMA-2	[DMA-2]	Romulus	0	100.0%		
EC-6	[EC-6]-[RR-1]	Ecorse	9,305	69.1%		
		Lincoln Park	4,169	30.9%		
		Total	13,474	100%		
P-1	[P-1]+[PM-1]-[P-2] -[PA-2]-[PB-1]-[PD-1]-[PC-1]	Allen Park	2,338	17.4%		
		Southgate	11,079	82.6%		
		Total	13,417	100%		
P-2	[P-2]	Brownstown Twp.	11,002	99.9%		
		Taylor	10	0.1%		
		Total	11,012	100%		
PA-2	[PA-2]+[ER-1] -[PA-3]-[ER-2]	Brownstown Twp.	29	0.2%		
		Taylor	14,125	99.8%		
		Total	14,154	100%		
PA-3	[PA-3]+[ER-2] -[PA-4]-[DMA-1]	Romulus	14,420	100.0%		
PA-4	[PA-4]	Belleville	4,008	33.8%		
		Van Buren Twp.	7,865	66.2%		
		Total	11,873	100%		
PB-1	[PB-1]	Southgate	3,214	38.9%		
		Taylor	5,040	61.1%		
		Total	8,254	100%		
PC-1	[PC-1]+[CPO] +[CHPO]-[TB-1]	Allen Park	716	2.7%		
		Taylor	25,577	97.3%		
		Total	26,293	100%		
PD-1	[PD-1]-[PD-2]+[PDO]	Taylor	13,083	100.0%		
PD-2	[PD-2] - [DMA-2]	Romulus	8,069	100.0%		
RD-1	[RD-1]-[EC-6]	Allen Park	22,170	38.1%		
		Lincoln Park	36,076	61.9%		
		Total	58,246	100%		
RR-1	[RR-1]	River Rouge	7,224	100.0%		
RV-1	[RV-1]	Riverview	12,490	100.0%		
SW	[SW]+[SWB]	Southgate	15,003	37.5%		
		Wyandotte	25,058	62.5%		
		Total	40,061	100%		
TB-1	[TB-1]+[TSO]	Dearborn Hts.	19,472	77.7%		
		Taylor	5,574	22.3%		
		Total	25,046	100%		
TPS+IPS	Population Ratio of Meter District P-1	Southgate	718	100.0%		

**Table 7-4
Peak Flow Rates for Major Storm Events**

System	Meter	Location	No Major Storm Events			
			Peak Hour		Peak 96 Hour	
			Date/Time	Flow Rate (cfs)	Date/Time	Cumulative Volume (MG)
Tunnel (Non-Controlled)	TB-1	Taylor Basin				
	PC-1	Pelham Interceptor North of Goddard Road				
	DMA-2	Goddard near Harrison				
	PD-2	Goddard Interceptor West of Inkster Road				
	PD-1	Goddard Interceptor West of Allen Road				
	PB-1	Northline Interceptor West of Fordline Road				
	PA-4	Eureka Interceptor near Hannan Road				
	DMA-1	Detroit Metropolitan Airport				
	PA-3	Eureka Interceptor at Inkster Road				
	PA-2	Eureka Interceptor at Allen Road				
	PA-1	Eureka Interceptor West of Fordline Road				
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road				
	P-1	Pennsylvania Interceptor East of Fort Street				
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue				
Riverdrive (Controlled)	RR-1	River Rouge CSO Basin Outlet Jefferson North of Victoria				
	EC-6	Riverdrive Interceptor South of Southfield Road				
	RD-1	Riverdrive Interceptor North of Northline Road				
	SW+SWB	Southgate-Wyandotte Connection				
Tunnel Connection Meters	TSO	At Pelham Basin				
	APO-1	Belmont and Rosedale				
	APO-2	Belmont and Quandt				
	CHPO	Pelham Road South of R.R.				
	CPO	Pelham Road North of Haskell				
	PDO	Allen Road and Goddard				
	ER-2	Eureka Road and Inkster				
	ER-1	Allen Road and Eureka Road				
	PM-1	Pennsylvania Ave. at Fordline				
DWTF	IPS+TPS	DWTF Influent				

No Major Storm Events

**Table 7-5
Peak Hydraulic Grade Lines for Major Storm Events**

System	Meter	Location	Rim Elevation (ft)	Invert Elevation (ft)	Diameter (ft)	No Major Storm Events		
						Date/Time of Occurrence	Peak Depth (ft)	Peak HGL (ft)
Tunnel (Non-Controlled)	PC-1	Pelham Interceptor North of Goddard Road	601.95	564.96	4.5	No Major Storm Events		
	PD-2	Goddard Interceptor West of Inkster Road	623.35	598.32	4.5			
	PD-1	Goddard Interceptor West of Allen Road	602.25	575.55	4.0			
	PB-1	Northline Interceptor West of Fordline Road	596.15	569.55	3.0			
	PA-4	Eureka Interceptor near Hannan Road	656.95	635.14	3.5			
	PA-3	Eureka Interceptor at Inkster Road	622.65	601.02	3.5			
	PA-2	Eureka Interceptor at Allen Road	601.55	576.18	4.0			
	PA-1	Eureka Interceptor West of Fordline Road	594.95	570.40	4.0			
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	598.95	577.35	3.0			
	P-1	Pennsylvania Interceptor East of Fort Street	591.45	545.45	6.5			
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	578.33	544.07	3.5			
Riverdrive (Controlled)	RR-1	Riverdrive Interceptor South of Visger Road	582.25	566.21	3.0			
	EC-6	Riverdrive Interceptor South of Southfield Road	579.35	554.54	4.5			
	RD-1	Riverdrive Interceptor North of Northline Road	577.85	550.66	6.0			
	SW	On Southgate-Wyandotte Connection	578.00	538.00	6.5			
Tunnel Connection Meters	TSO	Connection to Tunnel at Pelham Basin	609.16	585.34	4.0			
	APO-1	Allen Park Overflow at Belmont Road and Rosedale Road	594.56	565.46	3.0			
	APO-2	Allen Park Overflow at Belmont Road and Quandt Road	597.16	571.00	3.0			
	CHPO	Pelham Interceptor South of R.R.	602.96	566.46	4.5			
	CPO	Pelham Interceptor North of Haskell Road	601.46	568.00	4.5			
	PDO	Goddard Interceptor at Allen Road	601.96	569.97	4.0			
	ER-2	Eureka Relief Sewer Extension on Eureka Road at Inkster Road	623.73	591.48	4.5			
	ER-1	Eureka Relief Sewer at Allen Road	602.81	560.47	4.5			
Tunnel Level Sensors	L-3	Allen and I-75 (North)	602.56	543.04	7.0			
	L-5	Pelham and Champaign	601.35	546.84	7.0			
	L-7	Rosedale and Belmont	593.21	552.86	6.5			
	L-8	Pennsylvania Ave. at Fordline	592.21	537.49	7.5			
DWTF	IPS	Main Influent Pump Station Wet Well	-	528.46	NA			
	TPS	Tunnel Pump Station Wet Well	-	524.71	NA			

Notes:

1) Elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88).

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 8-1
Meter Data Review and Fixes for 2022**

Meter	Start	Stop	Description of the Problem	Dry Period	Wet Period	Data Fix
CPO	11/2/2022	11/11/2022	Data unavailable due to dead battery. The battery was replaced.	X		Estimated to be zero
DMA-2	8/1/2022	-	Flow meter removed from DSDS flow monitor program on 8/1/2022.	X	X	-
ER-1	10/5/2022	10/13/2022	Data unavailable due to dead battery. The battery was replaced.	X		Estimated to be zero
	12/9/2022	12/29/2022		X	X	
ER-2	6/6/2022	6/27/2022	Data unavailable.	X	X	Estimated to be zero
	10/28/2022	11/16/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	
L-3	2/17/2022	3/1/2022	Bad data, no data or depth data is zero.	X	X	No fix
L-5	2/14/2022	2/25/2022	Bad data, no data or depth data is zero.	X	X	No fix
	3/23/2022	3/31/2022		X	X	
	10/4/2023	10/11/2023	Data unavailable due to dead battery. The battery was replaced.	X		
	11/6/2023	11/8/2023		X		
L-7	10/1/2023	10/12/2023	Data unavailable due to a sensor failure. The sensor and fuses were replaced.	X	X	No fix
L-8	2/18/2022	2/21/2022	Bad data, no data or depth data is zero.	X	X	No fix
	11/16/2023	12/31/2023	Data unavailable due communication issues. The battery was replaced.	X	X	
P-1	1/1/2022	1/24/2022	Pressure depth sensor failed, meter programming corrupted, power supply failed. New pressure sensor installed, meter reprogrammed with new parameters, new power supply installed.	X	X	Correlation to sum of upstream Meters [P-2] + [PA-1] + [PB-1] + [PC-1] + [PD-1]
	1/29/2022	2/4/2022	Battery backup failed and tripped the ground fault plug. Batteries were replaced and the ground fault plug reset.	X	X	
	12/23/2022	12/31/2022	Data unavailable. The UPS tripped causing the monitor to lose power. The UPS was reset.	X	X	
P-2	1/10/2022	1/27/2022	Data unavailable due to a tripped fuse. The fuse was replaced.	X		Correlation to PB-1
	2/22/2022	2/28/2022	Data unavailable due to the battery board malfunctioning. The battery board was replaced.	X	X	
	6/30/2022	8/5/2022	Data unavailable due to a sensor malfunction. The sensor and fuses were replaced.	X		
	10/1/2022	11/22/2022	Data unavailable due to multiple sensor failure. The sensors were replaced.	X	X	
PA-1	12/22/2022	12/31/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	Velocity estimated with rating curve to depth and correlation to PA-2
PA-2	6/7/2022	6/13/2022	Data unavailable.	X	X	Correlation to PA-3
	11/18/2022	12/27/2022	Data unavailable due to a sensor failure. The sensor and fuses were replaced.	X	X	Diurnal pattern and correlation to PA-3
PA-3	8/8/2022	8/12/2022	No data	X	X	Diurnal pattern
	10/16/2022	10/21/2022	Data unavailable due to dead battery. The battery was replaced.	X		Diurnal pattern and correlation to PA-2
	12/22/2022	12/31/2022		X	X	
PA-4	8/1/2022	8/2/2022	No data	X		Diurnal pattern
	8/2/2022	8/4/2022	Bad velocity data	X	X	Velocity estimated with rating curve to depth
	8/4/2022	8/9/2023	No data		X	Correlation to PA-3
	8/16/2022	8/22/2002		X	X	
	8/22/2022	9/7/2022	Bad velocity data	X	X	Velocity estimated with rating curve to depth
	9/10/2022	9/13/2022	No data	X	X	Diurnal pattern
	9/13/2022	9/21/2022		X	X	
	9/21/2022	10/24/2022	Bad velocity data. Velocity sensor was replaced.	X	X	Velocity estimated with rating curve to depth
PB-1	7/27/2022	8/2/2022	No data	X		Diurnal pattern
	10/28/2022	11/7/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	Diurnal pattern and velocity estimated with rating curve to depth
PC-1	10/1/2022	10/7/2022	Bad velocity data. Velocity sensor was cleaned.	X	X	Velocity estimated with rating curve to depth
	10/7/2022	10/27/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	Diurnal pattern
PD-1	7/22/2022	8/2/2022	No data	X	X	Correlation to PD-2 and DMA-2, and diurnal pattern
	12/23/2022	12/31/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	Correlation to PD-2
PD-2	3/10/2022	3/23/2022	Data unavailable due to a monitor malfunction. The monitor was replaced.	X	X	Correlation to PD-1
	5/10/2022	5/18/2022	Data unavailable due to water infiltration in the monitor. The monitor was replaced.	X	X	Correlation to PD-1 and DMA-2
	6/5/2022	6/19/2022	Data unavailable.	X	X	Diurnal pattern
	9/21/2022	9/30/2022	Data unavailable due to dead battery.	X	X	
	10/21/2022	10/28/2022	Data unavailable due communication issues.	X	X	Correlation to PD-1
	11/16/2022	12/1/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	
RD-1	6/16/2022	6/20/2022	Data unavailable.	X		Diurnal pattern
	9/15/2022	9/19/2022	No data	X		
	12/23/2022	12/31/2022	Data unavailable. The UPS tripped causing the monitor to lose power. The UPS was reset.	X	X	
RR-1	7/22/2022	7/28/2022	No data	X	X	Correlation to EC-6
	9/23/2022	9/30/2022		X	X	Correlation to EC-6 and RD-1
RV-1	8/1/2022	8/10/2022	No data	X	X	Correlation to PB-1
	9/14/2022	9/30/2022		X	X	
SWB	11/4/2022	11/8/2022	Data unavailable due communication issues.	X		Estimated to be zero
TSO	10/18/2022	10/27/2022	Data unavailable due to dead battery. The battery was replaced.	X	X	Estimated to be zero

Appendix A

Additional Monthly Summary Tables

**Table A-1
Incremental Flow Rates Summarized by Meter District with Community Components**

Meter District	Community	Year 2020 Incremental Residential Population	Meter District Percentage	January 2022			February 2022			March 2022			April 2022			May 2022			June 2022		
				Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather	
				Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)
TB-1	Dearborn Heights	19,472	77.7%	3.50	3.27	108	5.07	3.29	109	5.10	4.17	139	5.53	4.39	146	5.36	3.85	128	3.72	2.75	91
	Taylor	5,574	22.3%	1.00	0.94		1.45	0.94		1.46	1.19		1.58	1.26		1.53	1.10		1.07	0.79	
	Total	25,046	100.0%	4.50	4.20		6.52	4.23		6.55	5.37		7.12	5.65		6.89	4.96		4.79	3.53	
PC-1	Allen Park	716	2.7%	0.18	0.18	158	0.23	0.18	159	0.25	0.21	194	0.25	0.22	197	0.24	0.20	179	0.19	0.16	144
	Taylor	25,577	97.3%	6.56	6.26		8.28	6.31		8.78	7.67		8.86	7.79		8.64	7.08		6.68	5.70	
	Total	26,293	100.0%	6.74	6.43		8.51	6.49		9.03	7.89		9.11	8.00		8.88	7.27		6.86	5.86	
DMA-2	Romulus	0	100.0%	1.36	1.32	--	0.89	0.89	--	1.51	1.62	--	1.99	1.94	--	3.10	2.85	--	1.33	1.14	--
PD-2	Romulus	8,069	100.0%	3.07	2.95	236	3.59	2.85	228	3.85	3.45	276	3.84	3.45	276	4.07	3.45	277	2.87	2.62	210
PD-1	Taylor	13,083	100.0%	1.96	1.88	93	2.34	1.88	93	2.48	2.26	112	2.30	2.05	101	2.14	1.90	94	1.98	1.88	93
PB-1	Taylor	5,040	61.1%	1.18	1.15	147	1.38	1.08	138	1.50	1.28	164	1.45	1.29	165	1.47	1.19	152	1.21	1.05	134
	Southgate	3,214	38.9%	0.75	0.73	147	0.88	0.69	138	0.96	0.82	164	0.92	0.82	165	0.94	0.76	152	0.77	0.67	134
	Total	8,254	100.0%	1.93	1.88	147	2.27	1.77	138	2.46	2.09	164	2.37	2.11	165	2.40	1.94	152	1.98	1.71	134
PA-4	Belleville	4,008	33.8%	0.67	0.65	105	0.73	0.66	107	0.83	0.81	131	0.82	0.77	125	0.79	0.73	118	0.60	0.58	94
	Van Buren Twp	7,865	66.2%	1.31	1.27		1.43	1.30		1.63	1.59		1.61	1.52		1.55	1.44		1.18	1.15	
	Total	11,873	100.0%	1.98	1.92		2.16	1.96		2.46	2.40		2.43	2.29		2.35	2.17		1.78	1.73	
PA-3	Romulus	14,420	100.0%	4.37	4.26	191	4.90	4.41	198	5.43	5.24	235	5.42	5.17	232	5.33	4.85	217	4.15	3.98	178
PA-2	Taylor	14,125	99.8%	3.77	3.63	166	4.63	3.70	169	4.08	3.68	168	3.82	3.39	155	3.86	3.10	142	2.54	2.40	110
	Brownstown Twp	29	0.2%	0.01	0.01		0.01	0.01		0.01	0.01		0.01	0.01		0.01	0.01				
	Total	14,154	100.0%	3.78	3.64		4.64	3.71		4.09	3.69		3.83	3.40		3.86	3.10		2.55	2.41	
P-2	Brownstown Twp	11,002	99.9%	2.06	2.05	120	2.22	1.95	115	2.62	2.46	145	2.55	2.41	142	2.53	2.28	134	2.19	2.07	122
	Taylor	10	0.1%	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00					
	Total	11,012	100.0%	2.06	2.05		2.23	1.95		2.62	2.46		2.55	2.42		2.54	2.28		2.19	2.07	
P-1	Allen Park	2,338	17.4%	0.56	0.54	149	0.68	0.53	147	0.72	0.65	178	0.73	0.65	178	0.74	0.62	170	0.54	0.48	132
	Southgate	11,079	82.6%	2.66	2.56		3.21	2.52		3.39	3.06		3.46	3.06		3.49	2.91		2.55	2.26	
	Total	13,417	100.0%	3.22	3.10		3.88	3.06		4.11	3.70		4.20	3.70		4.22	3.53		3.09	2.73	
RV-1	Riverview	12,490	100.0%	2.27	2.20	114	3.17	2.18	113	2.89	2.38	123	2.92	2.44	126	3.03	2.14	111	2.39	2.11	109
RR-1	River Rouge	7,224	100.0%	2.78	2.62	234	3.95	2.57	230	3.58	3.07	275	3.86	3.11	278	4.27	3.22	288	3.38	2.58	231
EC-6	Ecorse	9,305	69.1%	1.93	1.84	128	2.21	1.77	123	2.54	2.16	150	2.72	2.52	175	2.94	2.70	187	2.56	2.37	164
	Lincoln Park	4,169	30.9%	0.86	0.83		0.99	0.79		1.14	0.97		1.22	1.13		1.32	1.21		1.15	1.06	
	Total	13,474	100.0%	2.79	2.67		3.20	2.56		3.68	3.12		3.94	3.65		4.25	3.91		3.71	3.43	
RD-1	Allen Park	22,170	38.1%	4.00	3.74	109	7.38	4.11	120	6.37	4.63	135	6.84	5.15	150	7.14	4.49	131	5.08	3.60	105
	Lincoln Park	36,076	61.9%	6.50	6.09		12.01	6.69		10.37	7.54		11.13	8.38		11.62	7.30		8.27	5.86	
	Total	58,246	100.0%	10.50	9.83		19.40	10.80		16.74	12.17		17.96	13.53		18.76	11.79		13.35	9.46	
SW + SWB	Southgate	15,003	37.5%	4.46	4.23	182	7.70	4.26	184	6.21	4.52	195	7.22	5.35	230	8.05	5.01	216	5.66	4.55	196
	Wyandotte	25,058	62.5%	7.45	7.06		12.86	7.12		10.38	7.55		12.05	8.93		13.45	8.38		9.45	7.60	
	Total	40,061	100.0%	11.90	11.29		20.57	11.39		16.59	12.07		19.27	14.28		21.51	13.39		15.12	12.14	
APO-1 + APO-2	Allen Park	0	100.0%	0.00	0.00	--	0.22	0.00	--	0.00	0.00	--	0.39	0.00	--	0.06	0.00	--	0.00	0.00	--
TPS+IPS	Southgate	718	100.0%	0.17	0.17	149	0.21	0.16	147	0.22	0.20	178	0.22	0.20	178	0.23	0.19	170	0.17	0.15	132
Subtotal Controlled Flow Communities		119,005	42.8%	27.97	26.41	143	47.12	27.32	148	40.58	30.43	165	45.03	34.58	188	48.79	32.31	175	35.55	27.61	150
Subtotal Non-Controlled Flow Communities		158,829	57.2%	37.41	36.00	147	45.54	35.52	145	47.72	42.75	174	48.68	42.82	174	49.10	40.64	165	36.13	31.93	130
Total Incoming Flow		277,834	100.0%	65.38	62.42	145	92.66	62.84	146	88.30	73.19	170	93.71	77.40	180	97.90	72.95	170	71.68	59.54	139
DWTF Including Recycle (IPS + TPS)		277,834	100.0%	66.07	63.36	147	98.45	65.85	153	93.91	77.40	180	98.39	80.51	187	105.25	77.43	180	71.92	58.24	135
DWTF without Recycle (IPS + TPS - Recycle)		277,834	100.0%	58.86	55.96	130	89.07	57.55	134	86.31	68.93	160	89.66	72.81	169	93.52	66.33	154	65.81	52.48	122
Recycle		0	-	7.21	7.40	-	9.37	8.30	-	7.60	8.47	-	8.73	7.70	-	11.73	11.09	-	6.11	5.76	-

Notes:
1) Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.
2) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

Table A-1 continued
Incremental Flow Rates Summarized by Meter District with Community Components

Meter District	Community	Year 2020 Incremental Residential Population	Meter District Percentage	July 2022			August 2022			September 2022			October 2022			November 2022			December 2022		
				Total		Dry Weather															
				Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)
TB-1	Dearborn Heights	19,472	77.7%	2.27	2.09	69	2.26	1.97	66	2.02	1.87	62	1.76	1.69	56	1.98	1.78	59	2.40	1.91	63
	Taylor	5,574	22.3%	0.65	0.60		0.65	0.57		0.58	0.53		0.50	0.48		0.57	0.51		0.69	0.55	
	Total	25,046	100.0%	2.92	2.69		2.91	2.54		2.59	2.40		2.27	2.17		2.55	2.29		3.09	2.45	
PC-1	Allen Park	716	2.7%	0.14	0.13	119	0.13	0.12	109	0.12	0.12	105	0.11	0.11	97	0.12	0.11	103	0.13	0.12	105
	Taylor	25,577	97.3%	4.98	4.71		4.71	4.30		4.33	4.14		3.97	3.82		4.27	4.06		4.69	4.17	
	Total	26,293	100.0%	5.12	4.84		4.84	4.42		4.45	4.25		4.09	3.93		4.39	4.18		4.82	4.29	
DMA-2 ¹	Romulus	0	100.0%	1.75	1.46	--	0.00	0.00	--	0.00	0.00	--	0.50	0.00	--	0.00	0.00	--	1.77	1.46	--
PD-2 ²	Romulus	8,069	100.0%	2.32	2.26	181	2.47	2.38	190	2.30	2.29	184	2.14	2.13	170	2.26	2.14	171	2.54	2.33	186
PD-1	Taylor	13,083	100.0%	1.05	1.19	59	1.18	1.14	56	1.06	1.03	51	1.09	1.14	56	1.13	1.19	59	0.81	0.84	41
PB-1	Taylor	5,040	61.1%	0.92	0.89	114	0.94	0.88	112	0.85	0.83	107	0.81	0.80	103	0.84	0.81	104	0.92	0.82	106
	Southgate	3,214	38.9%	0.59	0.57	114	0.60	0.56	112	0.54	0.53	107	0.52	0.51	103	0.54	0.52	104	0.59	0.52	106
	Total	8,254	100.0%	1.50	1.46	114	1.54	1.44	112	1.39	1.37	107	1.32	1.32	103	1.38	1.33	104	1.51	1.35	106
PA-4	Belleville	4,008	33.8%	0.52	0.52	84	0.51	0.50	80	0.51	0.51	82	0.42	0.42	68	0.38	0.38	61	0.45	0.44	71
	Van Buren Twp	7,865	66.2%	1.02	1.02		1.00	0.98		1.01	1.00		0.82	0.82		0.75	0.74		0.88	0.86	
	Total	11,873	100.0%	1.54	1.54		1.51	1.48		1.53	1.51		1.24	1.24		1.13	1.11		1.33	1.31	
PA-3	Romulus	14,420	100.0%	3.43	3.38	152	3.36	3.27	147	2.70	2.67	120	2.75	2.73	123	2.96	2.93	131	2.84	2.76	124
PA-2	Taylor	14,125	99.8%	2.13	2.09	95	2.06	2.00	91	2.36	2.34	107	2.52	2.51	115	2.48	2.46	113	2.57	2.46	113
	Brownstown Twp	29	0.2%	0.00	0.00		0.00	0.00		0.01	0.01		0.01	0.01		0.01	0.01				
	Total	14,154	100.0%	2.13	2.09		2.07	2.00		2.36	2.35		2.53	2.51		2.48	2.46				
P-2	Brownstown Twp	11,002	99.9%	1.85	1.83	108	1.84	1.78	104	1.67	1.66	97	1.61	1.60	94	1.56	1.54	90	1.67	1.58	93
	Taylor	10	0.1%	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00					
	Total	11,012	100.0%	1.85	1.83		1.84	1.78		1.67	1.66		1.61	1.60		1.56	1.54				
P-1	Allen Park	2,338	17.4%	0.42	0.40	111	0.39	0.36	100	0.35	0.35	95	0.35	0.33	92	0.35	0.34	94	0.41	0.37	102
	Southgate	11,079	82.6%	1.98	1.91		1.83	1.71		1.68	1.64		1.64	1.57		1.66	1.61		1.92	1.74	
	Total	13,417	100.0%	2.40	2.31		2.21	2.07		2.04	1.98		1.98	1.90		2.01	1.94		2.33	2.11	
RV-1	Riverview	12,490	100.0%	2.04	1.93	100	1.75	1.54	80	1.51	1.47	76	1.56	1.51	78	1.69	1.59	82	1.96	1.61	83
RR-1	River Rouge	7,224	100.0%	2.48	2.09	187	2.43	1.93	173	2.09	1.87	167	1.86	1.74	156	1.94	1.62	145	2.49	1.73	155
EC-6	Ecorse	9,305	69.1%	2.02	1.98	137	1.93	1.83	127	1.49	1.48	103	1.12	1.07	74	1.20	1.20	84	1.28	1.11	77
	Lincoln Park	4,169	30.9%	0.90	0.89		0.87	0.82		0.67	0.66		0.50	0.48		0.54	0.54		0.57	0.50	
	Total	13,474	100.0%	2.92	2.86		2.80	2.66		2.16	2.14		1.62	1.55		1.74	1.74		1.85	1.60	
RD-1	Allen Park	22,170	38.1%	3.35	2.86	83	3.86	2.80	82	3.08	2.63	77	2.56	2.35	69	2.78	2.28	66	3.55	2.32	68
	Lincoln Park	36,076	61.9%	5.45	4.66		6.28	4.55		5.01	4.28		4.16	3.83		4.52	3.71		5.78	3.77	
	Total	58,246	100.0%	8.80	7.52		10.13	7.35		8.08	6.91		6.71	6.18		7.30	5.99		9.32	6.09	
SW + SWB	Southgate	15,003	37.5%	4.69	3.98	172	5.16	3.75	162	3.87	3.35	144	3.19	2.98	128	3.52	2.96	127	4.04	3.09	133
	Wyandotte	25,058	62.5%	7.83	6.65		8.61	6.26		6.47	5.60		5.33	4.98		5.87	4.94		6.75	5.16	
	Total	40,061	100.0%	12.52	10.64		13.77	10.02		10.34	8.96		8.53	7.96		9.39	7.89		10.79	8.25	
APO-1 + APO-2	Allen Park	0	100.0%	0.00	0.00	--	0.10	0.00	--	0.00	0.00	--	0.00	0.00	--	0.00	0.00	--	0.00	0.00	--
TPS+IPS	Southgate	718	100.0%	0.13	0.12	111	0.12	0.11	100	0.11	0.11	95	0.11	0.10	92	0.11	0.10	94	0.12	0.11	102
Subtotal Controlled Flow Communities		119,005	42.8%	26.71	23.11	126	29.12	21.95	119	22.66	19.87	108	18.72	17.43	95	20.37	17.25	94	24.46	17.68	96
Subtotal Non-Controlled Flow Communities		158,829	57.2%	28.20	27.11	110	25.90	24.17	98	23.71	23.09	94	23.18	22.29	91	23.66	22.79	93	27.36	24.65	100
Total Incoming Flow		277,834	100.0%	54.92	50.22	117	55.02	46.13	107	46.37	42.96	100	41.90	39.72	92	44.03	40.04	93	51.82	42.33	98
DWTF Including Recycle (IPS + TPS)		277,834	100.0%	52.48	47.80	111	55.92	46.48	108	45.71	41.94	98	42.15	40.50	94	45.36	40.94	95	53.46	44.78	104
DWTF without Recycle (IPS + TPS - Recycle)		277,834	100.0%	47.82	43.42	101	51.29	42.00	98	41.54	37.64	88	38.06	36.28	84	40.13	35.70	83	49.69	41.26	96
Recycle		0	-	4.66	4.38	-	4.62	4.48	-	4.18	4.30	-	4.10	4.23	-	5.23	5.24	-	3.78	3.52	-

Notes:

- 1) Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.
- 2) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

**Table A-2
Incremental Flow Rates by Meter District**

Meter District	Incremental Meter District Formula	Year 2020 Incremental Residential Population	January 2022			February 2022			March 2022			April 2022			May 2022			June 2022		
			Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather	
			Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)
TB-1	[TB-1]+[TSO]	25,046	4.50	4.20	108	6.52	4.23	109	6.55	5.37	139	7.12	5.65	146	6.89	4.96	128	4.79	3.53	91
PC-1	[PC-1]+[CPO] +[CHPO]-[TB-1]	26,293	6.74	6.43	158	8.51	6.49	159	9.03	7.89	194	9.11	8.00	197	8.88	7.27	179	6.86	5.86	144
DMA-2 ²	[DMA-2] or [DTW Pond 3 West]	0	1.36	1.32	-	0.89	0.89	-	1.51	1.62	-	1.99	1.94	-	3.10	2.85	-	1.33	1.14	-
PD-2 ³	[PD-2] - [DMA-2] or [PD-2] - [DTW Pond 3 West]	8,069	3.07	2.95	236	3.59	2.85	228	3.85	3.45	276	3.84	3.45	276	4.07	3.45	277	2.87	2.62	210
PD-1	[PD-1]-[PD-2]+[PDO]	13,083	1.96	1.88	93	2.34	1.88	93	2.48	2.26	112	2.30	2.05	101	2.14	1.90	94	1.98	1.88	93
PB-1	[PB-1]	8,254	1.93	1.88	147	2.27	1.77	138	2.46	2.09	164	2.37	2.11	165	2.40	1.94	152	1.98	1.71	134
PA-4	[PA-4]	11,873	1.98	1.92	105	2.16	1.96	107	2.46	2.40	131	2.43	2.29	125	2.35	2.17	118	1.78	1.73	94
PA-3	[PA-3]+[ER-2] -[PA-4]	14,420	4.37	4.26	191	4.90	4.41	198	5.43	5.24	235	5.42	5.17	232	5.33	4.85	217	4.15	3.98	178
PA-2	[PA-2]+[ER-1] -[PA-3]-[ER-2]	14,154	3.78	3.64	166	4.64	3.71	169	4.09	3.69	168	3.83	3.40	155	3.86	3.10	142	2.55	2.41	110
P-2	[P-2]	11,012	2.06	2.05	120	2.23	1.95	115	2.62	2.46	145	2.55	2.42	142	2.54	2.28	134	2.19	2.07	122
P-1	[P-1]+[PM-1]-[P-2] -[PA-2]-[PB-1]-[PD-1]-[PC-1]	13,417	3.22	3.10	149	3.88	3.06	147	4.11	3.70	178	4.20	3.70	178	4.22	3.53	170	3.09	2.73	132
RV-1	[RV-1]	12,490	2.27	2.20	114	3.17	2.18	113	2.89	2.38	123	2.92	2.44	126	3.03	2.14	111	2.39	2.11	109
RR-1	[RR-1]	7,224	2.78	2.62	234	3.95	2.57	230	3.58	3.07	275	3.86	3.11	278	4.27	3.22	288	3.38	2.58	231
EC-6	[EC-6]-[RR-1]	13,474	2.79	2.67	128	3.20	2.56	123	3.68	3.12	150	3.94	3.65	175	4.25	3.91	187	3.71	3.43	164
RD-1	[RD-1]-[EC-6]	58,246	10.50	9.83	109	19.40	10.80	120	16.74	12.17	135	17.96	13.53	150	18.76	11.79	131	13.35	9.46	105
APO-1 + APO-2	[APO-1]+[APO-2]	0	0.00	0.00	-	0.22	0.00	-	0.00	0.00	-	0.39	0.00	-	0.06	0.00	-	0.00	0.00	-
SW+SWB	[SW]+[SWB]	40,061	11.90	11.29	182	20.57	11.39	184	16.59	12.07	195	19.27	14.28	230	21.51	13.39	216	15.12	12.14	196
TPS+IPS ¹	Population Ratio of Meter District P-1	718	0.17	0.17	149	0.21	0.16	147	0.22	0.20	178	0.22	0.20	178	0.23	0.19	170	0.17	0.15	132

Notes:

1) ([TPS+IPS] Inc. Flow Rate) = (TPS-IPS Inc. Pop. / P-1 Inc. Pop.) x ([P-1] Inc. Flow Rate)

2) Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022. Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.

3) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

**Table A-2 continued
Incremental Flow Rates by Meter District**

Meter District	Incremental Meter District Formula	Year 2020 Incremental Residential Population	July 2022			August 2022			September 2022			October 2022			November 2022			December 2022		
			Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather	
			Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)
TB-1	[TB-1]+[TSO]	25,046	2.92	2.69	69	2.91	2.54	66	2.59	2.40	62	2.27	2.17	56	2.55	2.29	59	3.09	2.45	63
PC-1	[PC-1]+[CPO] +[CHPO]-[TB-1]	26,293	5.12	4.84	119	4.84	4.42	109	4.45	4.25	105	4.09	3.93	97	4.39	4.18	103	4.82	4.29	105
DMA-2 ²	[DMA-2] or [DTW Pond 3 West]	0	1.75	1.46	-	0.00	0.00	-	0.00	0.00	-	0.50	0.00	-	0.00	0.00	-	1.77	1.46	-
PD-2 ³	[PD-2] - [DMA-2] or [PD-2] - [DTW Pond 3 West]	8,069	2.32	2.26	181	2.47	2.38	190	2.30	2.29	184	2.14	2.13	170	2.26	2.14	171	2.54	2.33	186
PD-1	[PD-1]-[PD-2]+[PDO]	13,083	1.05	1.19	59	1.18	1.14	56	1.06	1.03	51	1.09	1.14	56	1.13	1.19	59	0.81	0.84	41
PB-1	[PB-1]	8,254	1.50	1.46	114	1.54	1.44	112	1.39	1.37	107	1.32	1.32	103	1.38	1.33	104	1.51	1.35	106
PA-4	[PA-4]	11,873	1.54	1.54	84	1.51	1.48	80	1.53	1.51	82	1.24	1.24	68	1.13	1.11	61	1.33	1.31	71
PA-3	[PA-3]+[ER-2] -[PA-4]-[DMA-1]	14,420	3.43	3.38	152	3.36	3.27	147	2.70	2.67	120	2.75	2.73	123	2.96	2.93	131	2.84	2.76	124
PA-2	[PA-2]+[ER-1] -[PA-3]-[ER-2]	14,154	2.13	2.09	95	2.07	2.00	91	2.36	2.35	107	2.53	2.51	115	2.48	2.46	113	2.57	2.46	113
P-2	[P-2]	11,012	1.85	1.83	108	1.84	1.78	104	1.67	1.66	97	1.61	1.60	94	1.56	1.54	90	1.67	1.58	93
P-1	[P-1]+[PM-1]-[P-2] -[PA-2]-[PB-1]-[PD-1]-[PC-1]	13,417	2.40	2.31	111	2.21	2.07	100	2.04	1.98	95	1.98	1.90	92	2.01	1.94	94	2.33	2.11	102
RV-1	[RV-1]	12,490	2.04	1.93	100	1.75	1.54	80	1.51	1.47	76	1.56	1.51	78	1.69	1.59	82	1.96	1.61	83
RR-1	[RR-1]	7,224	2.48	2.09	187	2.43	1.93	173	2.09	1.87	167	1.86	1.74	156	1.94	1.62	145	2.49	1.73	155
EC-6	[EC-6]-[RR-1]	13,474	2.92	2.86	137	2.80	2.66	127	2.16	2.14	103	1.62	1.55	74	1.74	1.74	84	1.85	1.60	77
RD-1	[RD-1]-[EC-6]	58,246	8.80	7.52	83	10.13	7.35	82	8.08	6.91	77	6.71	6.18	69	7.30	5.99	66	9.32	6.09	68
APO-1 + APO-2	[APO-1]+[APO-2]	0	0.00	0.00	-	0.10	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-
SW+SWB	[SW]+[SWB]	40,061	12.52	10.64	172	13.77	10.02	162	10.34	8.96	144	8.53	7.96	128	9.39	7.89	127	10.79	8.25	133
TPS+IPS ¹	Population Ratio of Meter District P-1	718	0.13	0.12	111	0.12	0.11	100	0.11	0.11	95	0.11	0.10	92	0.11	0.10	94	0.12	0.11	102

Notes:

1) ([TPS+IPS] Inc. Flow Rate) = (TPS-IPS Inc. Pop. / P-1 Inc. Pop.) x ([P-1] Inc. Flow Rate)

2) Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022. Meter district DMA-2 transitioned to meter district DTW Pond 3 West on August 1, 2022.

3) Meter district PD-2 meter math replaced meter district DMA-2 with meter district DTW Pond 3 West on August 1, 2022.

**Table A-3
Monthly Flow Rates by Meter for 2022**

System	Meter	Location	Year 2020 Cumulative Residential Population	Average Flow Rates (cfs)												
				January	February	March	April	May	June	July	August	September	October	November	December	Average Annual
Tunnel (Non-Controlled)	TB-1	Taylor Basin	25,046	4.50	6.52	6.55	7.05	6.89	4.79	2.92	2.91	2.59	2.27	2.55	3.09	4.37
	PC-1	Pelham Interceptor North of Goddard Road	51,339	11.24	14.87	15.55	15.97	15.61	11.58	8.04	7.73	7.05	6.35	6.93	7.89	10.70
	DTW Pond 3 West	Detroit Metro Airport	0	1.40	0.43	0.95	1.88	3.28	1.26	1.80	0.00	0.00	0.50	0.00	1.77	1.11
	DMA-2 ¹	Detroit Metro Airport	0	1.36	0.89	1.51	1.99	3.10	1.33	1.75	N/A	N/A	N/A	N/A	N/A	1.00
	PD-2	Goddard Interceptor West of Inkster Road	8,069	4.43	4.48	5.36	5.83	7.17	4.20	4.07	2.47	2.30	2.64	2.26	4.31	4.13
	PD-1	Goddard Interceptor West of Allen Road	21,152	6.39	6.82	7.84	8.13	9.31	6.18	5.13	3.65	3.37	3.73	3.39	5.11	5.75
	PB-1	Northline Interceptor West of Fordline Road	8,254	1.93	2.27	2.46	2.37	2.40	1.98	1.50	1.54	1.39	1.32	1.38	1.51	1.84
	PA-4	Eureka Interceptor near Hannan Road	11,873	1.98	2.16	2.46	2.43	2.35	1.78	1.54	1.51	1.53	1.24	1.13	1.33	1.78
	PA-3	Eureka Interceptor at Inkster Road	26,293	6.35	7.05	7.90	7.84	7.66	5.93	4.97	4.87	4.22	3.99	4.09	4.17	5.75
	PA-2	Eureka Interceptor at Allen Road	40,447	10.13	11.67	11.98	11.67	11.50	8.48	7.11	6.94	6.58	6.52	6.57	6.72	8.80
	PA-1	Eureka Interceptor West of Fordline Road	44,400	9.13	11.60	12.97	12.36	12.30	8.17	6.52	6.44	5.94	6.15	6.29	6.99	8.72
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	11,012	2.06	2.23	2.62	2.55	2.54	2.19	1.85	1.84	1.67	1.61	1.56	1.67	2.03
	P-1	Pennsylvania Interceptor East of Fort Street	145,621	34.97	41.74	44.57	44.88	45.59	33.49	26.03	23.91	22.10	21.52	21.85	25.23	32.09
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	12,490	2.27	3.17	2.89	2.92	3.03	2.39	2.04	1.75	1.51	1.56	1.69	1.96	2.26
Riverdrive (Controlled)	RR-1	River Rouge CSO Basin Outlet	7,224	2.78	3.95	3.58	3.86	4.27	3.38	2.48	2.43	2.09	1.86	1.94	2.49	2.92
	EC-6	Riverdrive Interceptor South of Southfield Road	20,698	5.58	7.15	7.25	7.80	8.52	7.09	5.40	5.22	4.24	3.48	3.68	4.34	5.80
	RD-1	Riverdrive Interceptor North of Northline Road	78,944	16.07	26.55	23.99	25.76	27.29	20.44	14.20	15.35	12.32	10.19	10.98	13.67	18.01
	SW	On Southgate-Wyandotte Connection	40,061	11.89	18.17	15.38	18.36	18.16	13.56	12.32	12.63	9.96	8.52	8.59	10.29	13.12
	SWB	Southgate-Wyandotte Basin	0	0.01	2.40	1.21	0.91	3.35	1.55	0.20	1.13	0.38	0.01	0.80	0.50	1.03
Tunnel Connection Meters	TSO	Connection to Tunnel at Pelham Basin	0	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	APO-1	Allen Park Connection to Tunnel at Belmont and Rosedale Road	0	0.00	0.13	0.00	0.25	0.02	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04
	APO-2	Allen Park Connection to Tunnel at Belmont and Quandt Road	0	0.00	0.09	0.00	0.13	0.04	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.03
	CHPO	Pelham Interceptor Connection to Tunnel North of Haskell Road	0	0.00	0.12	0.03	0.15	0.14	0.07	0.00	0.01	0.00	0.00	0.01	0.02	0.05
	CPO	Pelham Interceptor Connection to Tunnel South of R.R.	0	0.00	0.03	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	PDO	Goddard Interceptor Connection to Tunnel at Allen Road	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ER-2	Eureka Relief Sewer Extention Connection to Tunnel at Inkster Road	0	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ER-1	Eureka Relief Sewer Connection to Tunnel at Allen Road	0	0.00	0.04	0.01	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
	PM-1	Pennsylvania Interceptor Connection to Tunnel at Fordline Road	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DWTf	P-1+RD-1+RV-1+SW+SWB +Tunnel Connections	End of Interceptor System Meters	277,116	65.21	92.45	88.08	93.49	97.67	71.51	54.79	54.90	46.27	41.79	43.92	51.69	66.64
	(IPS + TPS)	DWTf Including Recycle	277,834	66.07	98.45	93.91	98.39	105.25	71.92	52.48	55.92	45.71	42.15	45.36	53.46	68.89
	(IPS + TPS - Recycle)	DWTf without Recycle	277,834	58.86	89.07	86.31	89.66	93.52	65.81	47.82	51.29	41.54	38.06	40.13	49.69	62.47
	Recycle	End of Interceptor System Meters	0	7.21	9.37	7.60	8.73	11.73	6.11	4.66	4.62	4.18	4.10	5.23	3.78	6.42

Notes:

1) Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022.

**Table A-4
Average Flow Rates by Meter**

System	Meter	Year 2020 Cumulative Residential Population	January 2022			February 2022			March 2022			April 2022			May 2022			June 2022		
			Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather	
			Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)
Tunnel (Non-Controlled)	TB-1	25,046	4.50	4.20	108	6.52	4.23	109	6.55	5.37	139	7.05	5.65	146	6.89	4.96	128	4.79	3.53	91
	PC-1	51,339	11.24	10.64	134	14.87	10.71	135	15.55	13.25	167	15.97	13.65	172	15.61	12.23	154	11.58	9.39	118
	DTW Pond 3 West	0	1.40	1.35	-	0.43	0.31	-	0.95	0.76	-	1.88	1.82	-	3.28	3.03	-	1.26	1.03	-
	DMA-2	0	1.36	1.32	-	0.89	0.89	-	1.51	1.62	-	1.99	1.94	-	3.10	2.85	-	1.33	1.14	-
	PD-2	8,069	4.43	4.27	342	4.48	3.73	299	5.36	5.07	406	5.83	5.39	431	7.17	6.31	505	4.20	3.76	301
	PD-1	21,152	6.39	6.15	188	6.82	5.61	171	7.84	7.33	224	8.13	7.44	227	9.31	8.20	251	6.18	5.65	173
	PB-1	8,254	1.93	1.88	147	2.27	1.77	138	2.46	2.09	164	2.37	2.11	165	2.40	1.94	152	1.98	1.71	134
	PA-4	11,873	1.98	1.92	105	2.16	1.96	107	2.46	2.40	131	2.43	2.29	125	2.35	2.17	118	1.78	1.73	94
	PA-3	26,293	6.35	6.19	152	7.05	6.37	157	7.90	7.64	188	7.84	7.46	183	7.66	7.02	173	5.93	5.71	140
	PA-2	40,447	10.13	9.82	157	11.67	10.08	161	11.98	11.33	181	11.67	10.86	173	11.50	10.12	162	8.48	8.12	130
	PA-1	44,400	9.13	8.71	127	11.60	9.17	134	12.97	11.70	170	12.36	10.95	159	12.30	10.26	149	8.17	7.47	109
	P-2	11,012	2.06	2.05	120	2.23	1.95	115	2.62	2.46	145	2.55	2.42	142	2.54	2.28	134	2.19	2.07	122
	P-1 ¹	145,621	34.97	33.64	149	41.74	33.18	147	44.57	40.17	178	44.88	40.18	178	45.59	38.31	170	33.49	29.68	132
RV-1	12,490	2.27	2.20	114	3.17	2.18	113	2.89	2.38	123	2.92	2.44	126	3.03	2.14	111	2.39	2.11	109	
Riverdrive (Controlled)	RR-1	7,224	2.78	2.62	234	3.95	2.57	230	3.58	3.07	275	3.86	3.11	278	4.27	3.22	288	3.38	2.58	231
	EC-6	20,698	5.58	5.29	165	7.15	5.14	160	7.25	6.19	193	7.80	6.76	211	8.52	7.13	223	7.09	6.00	188
	RD-1	78,944	16.07	15.12	124	26.55	15.93	130	23.99	18.37	150	25.76	20.30	166	27.29	18.92	155	20.44	15.47	127
	SW (with sludge depth)	40,061	11.89	11.28	182	18.17	11.38	184	15.38	12.05	194	18.36	14.27	230	18.16	13.36	215	13.56	12.02	194
	SWB	0	0.01	0.01	-	2.40	0.01	-	1.21	0.02	-	0.91	0.02	-	3.35	0.03	-	1.55	0.13	-
Tunnel Connection Meters	TSO	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.06	0.00	-	0.00	0.00	-	0.00	0.00	-
	APO-1	0	0.00	0.00	-	0.13	0.00	-	0.00	0.00	-	0.25	0.00	-	0.02	0.00	-	0.00	0.00	-
	APO-2	0	0.00	0.00	-	0.09	0.00	-	0.00	0.00	-	0.13	0.00	-	0.04	0.00	-	0.00	0.00	-
	CHPO	0	0.00	0.00	-	0.12	0.00	-	0.03	0.00	-	0.15	0.00	-	0.14	0.00	-	0.07	0.00	-
	CPO	0	0.00	0.00	-	0.03	0.00	-	0.00	0.00	-	0.05	0.00	-	0.01	0.00	-	0.00	0.00	-
	PDO	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-
	ER-2	0	0.00	0.00	-	0.01	0.00	-	0.00	0.00	-	0.00	0.00	-	0.02	0.00	-	0.00	0.00	-
	ER-1	0	0.00	0.00	-	0.04	0.00	-	0.01	0.00	-	0.01	0.00	-	0.04	0.00	-	0.00	0.00	-
	PM-1	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-
	Total	0	0.00	0.00	-	0.42	0.00	-	0.04	0.00	-	0.65	0.00	-	0.26	0.00	-	0.08	0.00	-
DWTF	P-1+RV-1+RD-1+SW+SWB +Tunnel Connections	277,116	65.21	62.25	145	92.45	62.68	146	88.08	72.99	170	93.49	77.20	180	97.67	72.76	170	71.51	59.40	139
	DWTF Including Recycle (IPS + TPS)	277,834	66.07	63.36	147	98.45	65.85	153	93.91	77.40	180	98.39	80.51	187	105.25	77.43	180	71.92	58.24	135
	DWTF without Recycle (IPS + TPS - Recycle)	277,834	58.86	55.96	130	89.07	57.55	134	86.31	68.93	160	89.66	72.81	169	93.52	66.33	154	65.81	52.48	122
	Recycle	0	7.21	7.40	-	9.37	8.30	-	7.60	8.47	-	8.73	7.70	-	11.73	11.09	-	6.11	5.76	-

Notes:

- 1) [P-1] = [P-2] + [PA-2] + [PB-1] + [PC-1] + [PD-1] + (P-1 Inc. Pop. / (P-2 Cum. Pop. + PA-2 Cum. Pop. + PB-1 Cum. Pop. + PC-1 Cum. Pop. + PD-1 Cum. Pop.)) x ([P-2] + [PA-2] + [PB-1] + [PC-1] + [PD-1] + [TSO] + [CPO] + [CHPO] + [PDO] + [APO-1] + [APO-2] + [ER-1])
- 2) Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022.

Table A-4 continued
Average Flow Rates by Meter

System	Meter	Year 2020 Cumulative Residential Population	July 2022			August 2022			September 2022			October 2022			November 2022			December 2022			
			Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		Total	Dry Weather		
			Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	Average Daily Flow Rate (cfs)	Average Daily Flow Rate (cfs)	Average Per Capita Flow Rate (gpcd)	
Tunnel (Non-Controlled)	TB-1	25,046	2.92	2.69	69	2.91	2.54	66	2.59	2.40	62	2.27	2.17	56	2.55	2.29	59	3.09	2.45	63	
	PC-1	51,339	8.04	7.53	95	7.73	6.96	88	7.05	6.65	84	6.35	6.10	77	6.93	6.47	81	7.89	6.74	85	
	DTW Pond 3 West	0	1.80	1.46	-	0.00	0.00	-	0.00	0.00	-	0.50	0.00	-	0.00	0.00	-	1.77	1.46	-	
	DMA-2 ²	0	1.75	1.46	-	N/A	N/A	N/A	N/A												
	PD-2	8,069	4.07	3.72	298	2.47	2.38	190	2.30	2.29	184	2.64	2.13	170	2.26	2.14	171	4.31	3.79	303	
	PD-1	21,152	5.13	4.92	150	3.65	3.52	107	3.37	3.32	101	3.73	3.27	100	3.39	3.32	102	5.11	4.63	141	
	PB-1	8,254	1.50	1.46	114	1.54	1.44	112	1.39	1.37	107	1.32	1.32	103	1.38	1.33	104	1.51	1.35	106	
	PA-4	11,873	1.54	1.54	84	1.51	1.48	80	1.53	1.51	82	1.24	1.24	68	1.13	1.11	61	1.33	1.31	71	
	PA-3	26,293	4.97	4.92	121	4.87	4.75	117	4.22	4.18	103	3.99	3.98	98	4.09	4.04	99	4.17	4.06	100	
	PA-2	40,447	7.11	7.01	112	6.94	6.75	108	6.58	6.53	104	6.52	6.49	104	6.57	6.50	104	6.72	6.49	104	
	PA-1	44,400	6.52	6.40	93	6.44	6.13	89	5.94	5.86	85	6.15	6.11	89	6.29	6.14	89	6.99	6.42	93	
	P-2	11,012	1.85	1.83	108	1.84	1.78	104	1.67	1.66	97	1.61	1.60	94	1.56	1.54	90	1.67	1.58	93	
	P-1 ¹	145,621	26.03	25.06	111	23.91	22.52	100	22.10	21.51	95	21.52	20.67	92	21.85	21.10	94	25.23	22.89	102	
RV-1	12,490	2.04	1.93	100	1.75	1.54	80	1.51	1.47	76	1.56	1.51	78	1.69	1.59	82	1.96	1.61	83		
Riverdrive (Controlled)	RR-1	7,224	2.48	2.09	187	2.43	1.93	173	2.09	1.87	167	1.86	1.74	156	1.94	1.62	145	2.49	1.73	155	
	EC-6	20,698	5.40	4.96	155	5.22	4.58	143	4.24	4.01	125	3.48	3.29	103	3.68	3.36	105	4.34	3.33	104	
	RD-1	78,944	14.20	12.48	102	15.35	11.94	98	12.32	10.92	89	10.19	9.47	78	10.98	9.35	77	13.67	9.43	77	
	SW (with sludge depth)	40,061	12.32	10.62	171	12.63	9.84	159	9.96	8.96	144	8.52	7.96	128	8.59	7.88	127	10.29	8.24	133	
	SWB	0	0.20	0.01	-	1.13	0.17	-	0.38	0.00	-	0.01	0.00	-	0.80	0.01	-	0.50	0.01	-	
Tunnel Connection Meters	TSO	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	
	APO-1	0	0.00	0.00	-	0.04	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	
	APO-2	0	0.00	0.00	-	0.06	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	
	CHPO	0	0.00	0.00	-	0.01	0.00	-	0.00	0.00	-	0.00	0.00	-	0.01	0.00	-	0.02	0.00	-	
	CPO	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	
	PDO	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	
	ER-2	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.01	-	
	ER-1	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.02	0.04	-	
	PM-1	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	
	Total	0	0.00	0.00	-	0.12	0.00	-	0.00	0.00	-	0.00	0.00	-	0.01	0.00	-	0.04	0.04	-	
DWTF	P-1+RV-1+RD-1+SW+SWB +Tunnel Connections	277,116	54.79	50.10	117	54.90	46.02	107	46.27	42.85	100	41.79	39.62	92	43.92	39.93	93	51.69	42.22	98	
	DWTF Including Recycle (IPS + TPS)	277,834	52.48	47.80	111	55.92	46.48	108	45.71	41.94	98	42.15	40.50	94	45.36	40.94	95	53.46	44.78	104	
	DWTF without Recycle (IPS + TPS - Recycle)	277,834	47.82	43.42	101	51.29	42.00	98	41.54	37.64	88	38.06	36.28	84	40.13	35.70	83	49.69	41.26	96	
	Recycle	0	4.66	4.38	-	4.62	4.48	-	4.18	4.30	-	4.10	4.23	-	5.23	5.24	-	3.78	3.52	-	

Notes:

1) [P-1] = [P-2] + [PA-2] + [PB-1] + [PC-1] + [PD-1] + (P-1 Inc. Pop. / (P-2 Cum. Pop. + PA-2 Cum. Pop. + PB-1 Cum. Pop. + PC-1 Cum. Pop. + PD-1 Cum. Pop.)) x ([P-2] + [PA-2] + [PB-1] + [PC-1] + [PD-1] + [TSO] + [CPO] + [CHPO] + [PDO] + [APO-1] + [APO-2] + [ER-1])

2) Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022.

Appendix B

Precipitation Data for Significant/Major Storm Events

Table B-1
Rainfall Event Summary Table for Significant Storm Event 1

Start Date: 2/16/2022
 Stop Date: 2/18/2022

Gauge ID	Peak Rainfall (in)									
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total	
R18	0.15	0.25	0.34	0.53	0.70	1.05	1.07	1.07	1.06	
R02	0.16	0.28	0.37	0.56	0.70	1.16	1.16	1.16	1.16	
R10	0.17	0.27	0.36	0.56	0.72	1.09	1.18	1.18	1.18	
DTW	0.15	0.26	0.35	0.57	0.74	1.27	1.29	1.30	1.29	
R09	0.17	0.28	0.38	0.63	0.79	1.10	1.10	1.11	1.10	
R04	0.19	0.33	0.44	0.65	0.88	1.47	1.52	1.58	1.50	
R08	0.17	0.28	0.36	0.56	0.71	1.06	1.07	1.07	1.07	
R15	0.16	0.28	0.36	0.58	0.74	1.02	1.05	1.05	1.05	
R17	0.18	0.28	0.37	0.55	0.77	1.22	1.29	1.29	1.29	
R06	0.18	0.31	0.39	0.57	0.79	1.24	1.25	1.25	1.25	
R16	0.18	0.29	0.38	0.58	0.79	1.38	1.44	1.44	1.44	
Minimum (in):	0.15	0.25	0.34	0.53	0.70	1.02	1.05	1.05	1.05	
Average (in):	0.17	0.28	0.37	0.58	0.76	1.19	1.22	1.23	1.22	
Maximum (in):	0.19	0.33	0.44	0.65	0.88	1.47	1.52	1.58	1.50	
X.XX*	Missing or suspect data (not used).							Standard Deviation (in):	0.15	
								Coefficient of Variation:	13%	

Gauge ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R04	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 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 B-2
Rainfall Event Summary Table for Significant Storm Event 2

Start Date: 5/15/2022
 Stop Date: 5/16/2022

Gauge ID	Peak Rainfall (in)									
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total	
R18	0.14	0.25	0.33	0.50	0.51	0.53	0.53	0.92	0.53	
R02	0.37	0.62	0.83	1.10	1.25	1.26	1.26	1.65	1.26	
R10	0.21	0.33	0.46	0.65	0.70	0.71	0.71	1.08	0.71	
DTW	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	1.07	
R09	0.26	0.46	0.63	0.94	1.21	1.21	1.21	1.57	1.21	
R04	0.37	0.62	0.83	1.10	1.25	1.26	1.26	1.65	1.26	
R08	0.32	0.53	0.71	0.99	1.23	1.24	1.24	1.55	1.24	
R15	0.29	0.50	0.69	0.91	1.07	1.08	1.08	1.43	1.08	
R17	0.29	0.51	0.71	0.94	1.07	1.07	1.07	1.44	1.07	
R06	0.24	0.44	0.60	0.82	0.91	0.91	0.91	1.29	0.91	
R16	0.26	0.45	0.65	0.88	1.01	1.05	1.05	1.38	1.03	
Minimum (in):	0.14	0.25	0.33	0.50	0.51	0.53	0.53	0.92	0.53	
Average (in):	0.28	0.47	0.64	0.88	1.02	1.03	1.03	1.40	1.03	
Maximum (in):	0.37	0.62	0.83	1.10	1.25	1.26	1.26	1.65	1.26	
X.XX*	Missing or suspect data (not used).							Standard Deviation (in):	0.24	
								Coefficient of Variation:	23%	

Gauge ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	-	-	-	-	-	-	-	-	-
R09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R04	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 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 B-3
Rainfall Event Summary Table for Significant Storm Event 3

Start Date: 6/6/2022
 Stop Date: 6/7/2022

Gauge ID	Peak Rainfall (in)									
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total	
R18	0.31	0.40	0.47	0.68	0.80	0.80	1.21	1.38	0.80	
R02	0.76	1.01	1.11	1.24	1.40	1.42	1.88	2.17	1.42	
R10	0.39	0.60	0.68	0.81	0.93	0.95	1.49	1.68	0.95	
DTW	0.39	0.53	0.61	0.73	0.84	0.85	1.39	1.58	0.85	
R09	0.20	0.33	0.47	0.59	0.77	0.79	1.20	1.51	0.79	
R04	0.76	1.01	1.11	1.24	1.40	1.42	1.88	2.17	1.42	
R08	0.32	0.44	0.56	0.66	0.88	0.90	1.38	1.73	0.90	
R15	0.76	0.91	1.05	1.27	1.40	1.43	1.51	1.86	1.43	
R17	0.69	0.88	0.98	1.19	1.38	1.40	1.83	2.22	1.39	
R06	0.43	0.55	0.65	0.77	0.91	0.92	1.28	1.53	0.92	
R16	0.56	0.76	0.86	1.05	1.27	1.29	1.66	2.08	1.29	
Minimum (in):	0.20	0.33	0.47	0.59	0.77	0.79	1.20	1.38	0.79	
Average (in):	0.51	0.67	0.78	0.93	1.09	1.11	1.52	1.81	1.11	
Maximum (in):	0.76	1.01	1.11	1.27	1.40	1.43	1.88	2.22	1.43	
X.XX*	Missing or suspect data (not used).							Standard Deviation (in):	0.28	
								Coefficient of Variation:	25%	

Gauge ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R04	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 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 B-4
Rainfall Event Summary Table for Significant Storm Event 4

Start Date: 8/3/2022
 Stop Date: 8/4/2022

Gauge ID	Peak Rainfall (in)									
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total	
R18	0.54	0.57	0.60	0.60	0.60	0.61	0.63	0.63	0.62	
R02	0.57	0.61	0.64	0.64	0.64	0.74	1.12	1.12	1.11	
R10	0.58	0.61	0.67	0.91	0.91	0.92	1.57	1.57	1.57	
DTW	0.39	0.43	0.48	0.48	0.48	0.51	0.99	0.99	0.95	
R09	0.78	0.83	0.87	0.96	0.97	0.98	1.39	1.39	1.37	
R04	0.57	0.61	0.64	0.64	0.64	0.74	1.12	1.12	1.11	
R08	0.82	1.00	1.02	1.06	1.06	1.10	1.59	1.59	1.55	
R15	0.49	0.66	0.67	0.68	0.68	0.68	1.19	1.19	1.19	
R17	0.46	0.53	0.58	0.71	0.79	0.80	1.20	1.20	1.11	
R06	0.38	0.41	0.45	0.46	0.47	0.71	1.00	1.00	0.92	
R16	0.35	0.39	0.43	0.43	0.43	0.43	0.69	0.69	0.68	
Minimum (in):	0.35	0.39	0.43	0.43	0.43	0.43	0.63	0.63	0.62	
Average (in):	0.54	0.60	0.64	0.69	0.70	0.75	1.14	1.14	1.11	
Maximum (in):	0.82	1.00	1.02	1.06	1.06	1.10	1.59	1.59	1.57	
X.XX*	Missing or suspect data (not used).							Standard Deviation (in):	0.31	
								Coefficient of Variation:	28%	

Gauge ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R04	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 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 B-5
Rainfall Event Summary Table for Significant Storm Event 5

Start Date: 11/27/2022
 Stop Date: 11/27/2022

Gauge ID	Peak Rainfall (in)									
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total	
R18	0.21	0.32	0.42	0.55	0.86	0.86	0.86	1.02	0.86	
R02	0.31	0.47	0.61	0.74	0.99	0.99	0.99	1.10	0.99	
R10	0.30	0.46	0.57	0.73	1.01	1.02	1.02	1.14	1.01	
DTW	0.29	0.54	0.65	0.79	1.04	1.04	1.04	1.17	1.04	
R09	0.29	0.54	0.64	0.74	0.96	0.96	0.96	1.08	0.96	
R04	0.39	0.66	0.78	0.95	1.20	1.20	1.20	1.40	1.20	
R08	0.30	0.57	0.68	0.81	1.02	1.02	1.02	1.12	1.02	
R15	0.30	0.56	0.68	0.80	1.02	1.02	1.02	1.13	1.02	
R17	0.35	0.58	0.68	0.86	1.07	1.07	1.07	1.20	1.07	
R06	0.30	0.55	0.65	0.74	0.96	0.96	0.96	1.07	0.96	
R16	0.32	0.56	0.66	0.81	1.01	1.01	1.01	1.14	1.01	
Minimum (in):	0.21	0.32	0.42	0.55	0.86	0.86	0.86	1.02	0.86	
Average (in):	0.31	0.53	0.64	0.77	1.01	1.01	1.01	1.14	1.01	
Maximum (in):	0.39	0.66	0.78	0.95	1.20	1.20	1.20	1.40	1.20	
X.XX*	Missing or suspect data (not used).							Standard Deviation (in):	0.08	
								Coefficient of Variation:	8%	

Gauge ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R04	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 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 B-6
Rainfall Event Summary Table for Significant Storm Event 6

Start Date: 12/30/2022
 Stop Date: 12/31/2022

Gauge ID	Peak Rainfall (in)									
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total	
R18	0.10	0.18	0.27	0.51	0.80	1.00	1.00	1.00	1.00	
R02	0.14	0.21	0.32	0.57	0.92	1.10	1.10	1.10	1.10	
R10	0.12	0.20	0.30	0.56	0.91	1.15	1.16	1.16	1.16	
DTW	0.10	0.19	0.28	0.51	0.87	1.10	1.12	1.12	1.12	
R09	0.13	0.21	0.30	0.55	0.91	1.09	1.12	1.12	1.12	
R04	0.13	0.23	0.33	0.62	1.05	1.30	1.34	1.34	1.33	
R08	0.12	0.21	0.29	0.53	0.90	1.09	1.11	1.11	1.11	
R15	0.13	0.21	0.30	0.56	0.93	1.13	1.16	1.16	1.15	
R17	0.11	0.20	0.28	0.52	0.89	1.08	1.11	1.11	1.11	
R06	0.13	0.23	0.32	0.59	0.99	1.18	1.21	1.21	1.21	
R16	0.13	0.23	0.32	0.60	1.00	1.23	1.25	1.25	1.25	
Minimum (in):	0.10	0.18	0.27	0.51	0.80	1.00	1.00	1.00	1.00	
Average (in):	0.12	0.21	0.30	0.56	0.92	1.13	1.15	1.15	1.15	
Maximum (in):	0.14	0.23	0.33	0.62	1.05	1.30	1.34	1.34	1.33	
X.XX*	Missing or suspect data (not used).							Standard Deviation (in):	0.09	
								Coefficient of Variation:	8%	

Gauge ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
DTW	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R04	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 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).

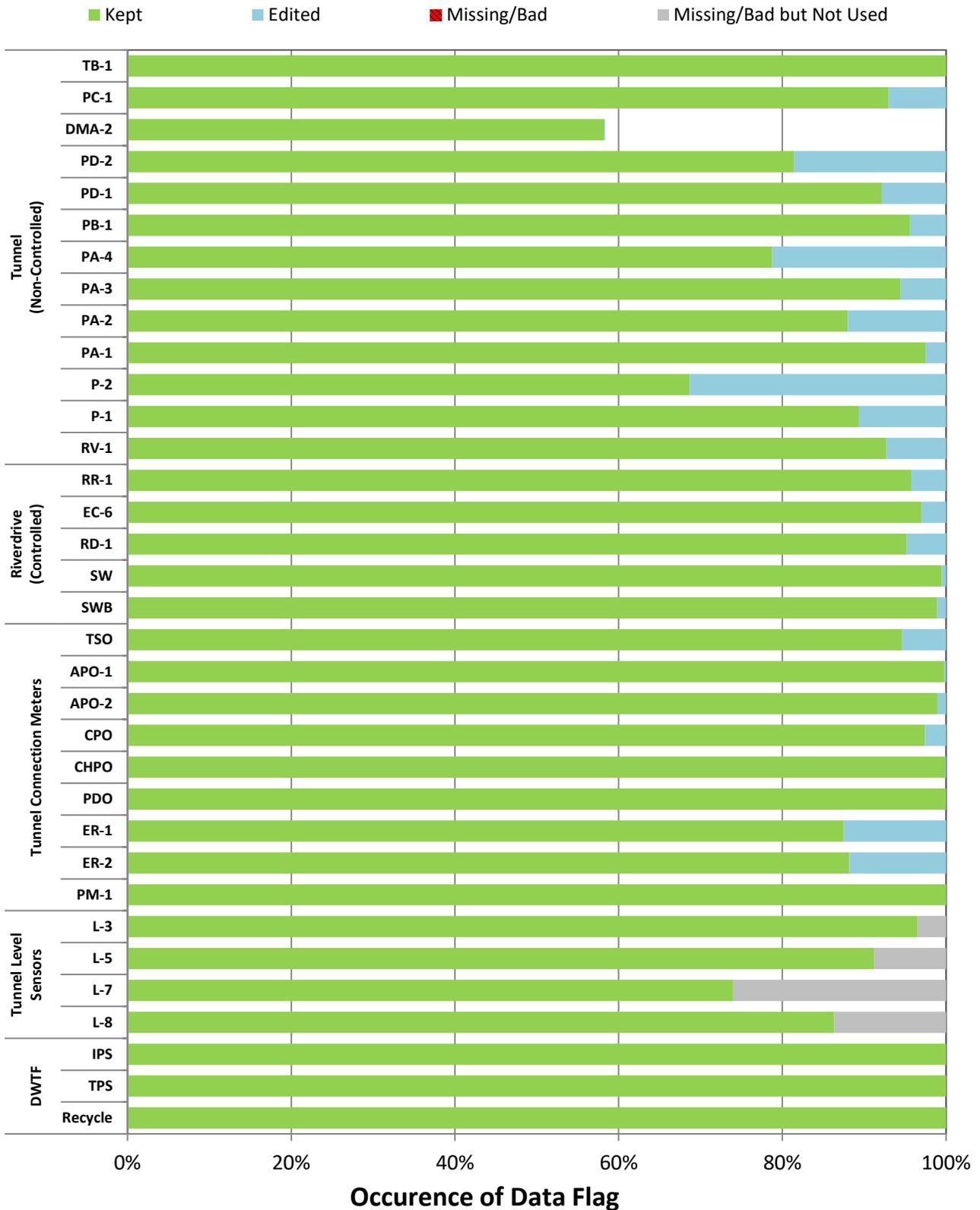
Notes:

- 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.

Appendix C

Meter Data Summaries

Figure C-1 Data Flags for 2022



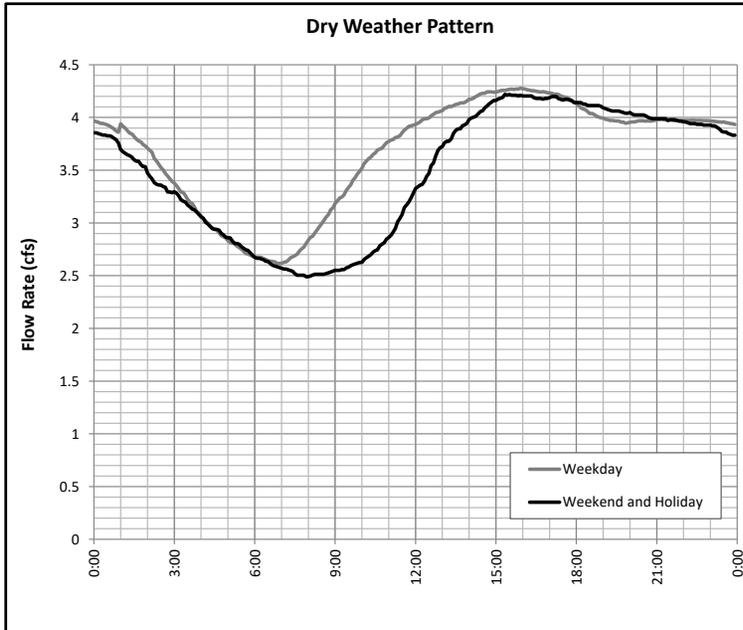
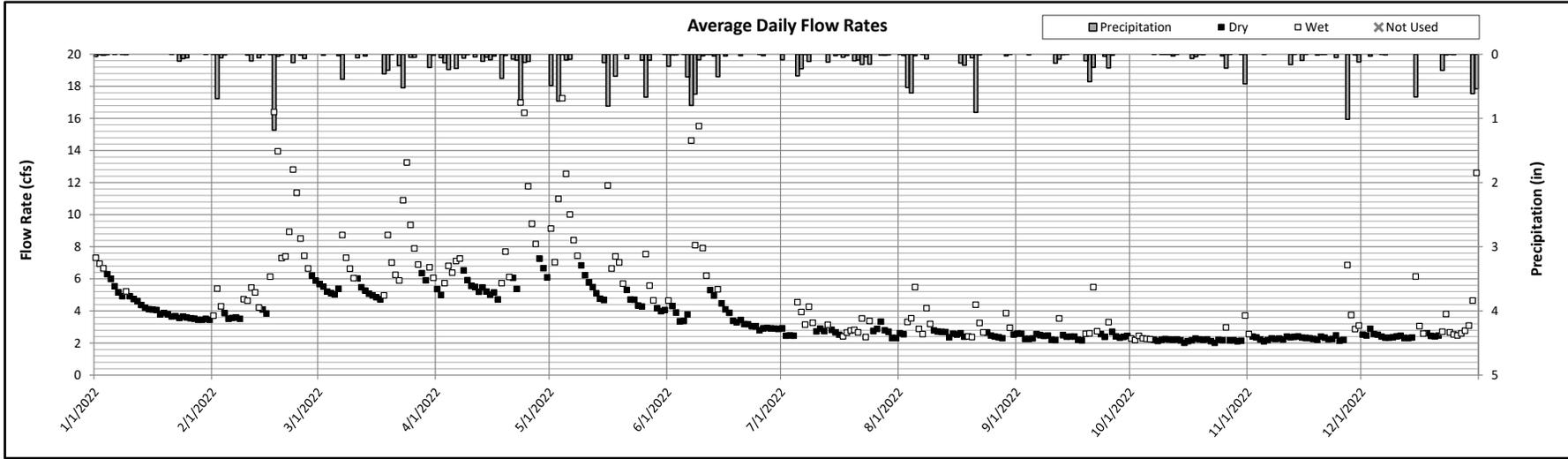
Note: 1) Flow meter DMA-2 was removed from the DSDS flow monitoring program on August 1, 2022.

Figure C-2
Meter Report

Meter: TB-1
Type: Magmeter

Location: Taylor Basin
System Meter Type: Interceptor Flow Meter

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



Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
	Jan-22	4.5	90.2	4.2	84.2	27
Feb-22	6.5	117.9	4.2	76.5	9	19
Mar-22	6.6	131.3	5.4	107.5	15	16
Apr-22	7.1	136.7	5.6	109.5	17	13
May-22	6.9	138.0	5.0	99.3	15	16
Jun-22	4.8	92.8	3.5	68.5	23	7
Jul-22	2.9	58.6	2.7	53.9	17	14
Aug-22	2.9	58.3	2.5	50.9	17	14
Sep-22	2.6	50.3	2.4	46.5	24	6
Oct-22	2.3	45.4	2.2	43.4	23	8
Nov-22	2.5	49.4	2.3	44.4	25	5
Dec-22	3.1	61.9	2.5	49.1	18	13

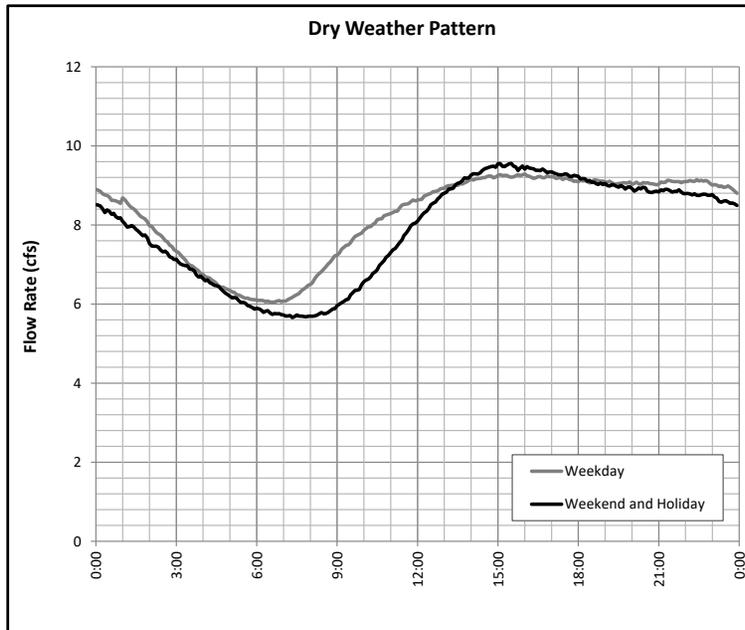
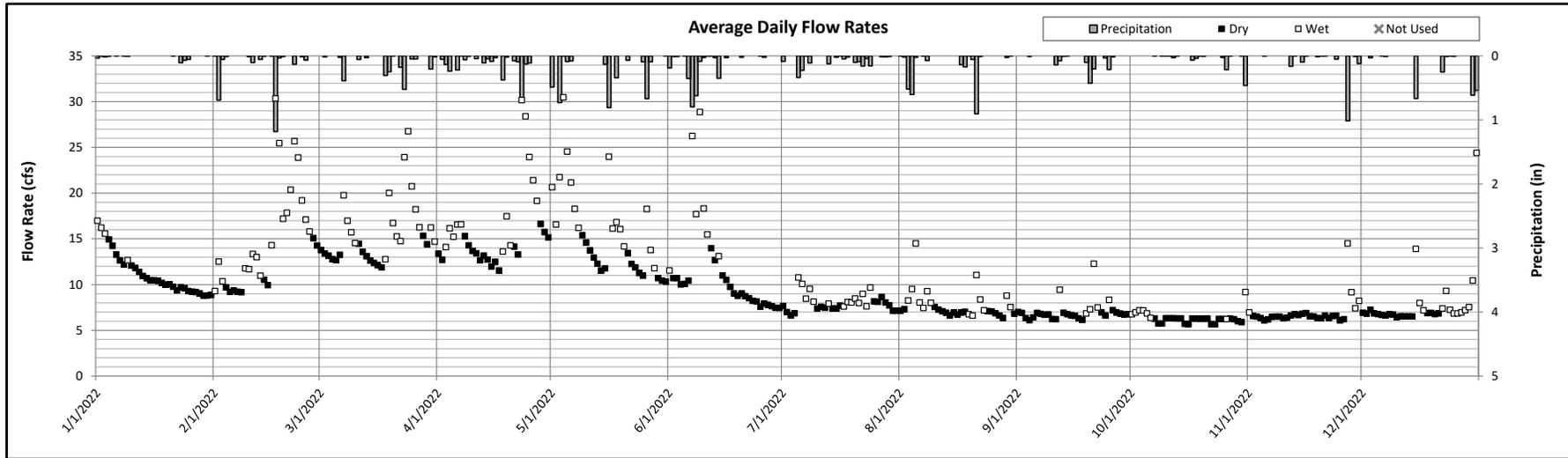
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

**Figure C-3
Meter Report**

Meter: PC-1
Type: ADS Triton+

Location: Pelham Interceptor North of Goddard Road
System Meter Type: Interceptor Flow Meter

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	11.2	225.3	10.6	213.1	27	4
Feb-22	14.9	269.2	10.7	193.9	9	19
Mar-22	15.6	311.6	13.3	265.5	15	16
Apr-22	16.0	309.6	13.7	264.7	17	13
May-22	15.6	312.8	12.2	245.1	15	16
Jun-22	11.6	224.4	9.4	182.1	23	7
Jul-22	8.0	161.1	7.5	150.8	17	14
Aug-22	7.7	154.9	7.0	139.4	17	14
Sep-22	7.0	136.6	6.7	129.0	24	6
Oct-22	6.4	127.3	6.1	122.2	23	8
Nov-22	6.9	134.4	6.5	125.4	25	5
Dec-22	7.9	158.0	6.7	135.0	18	13

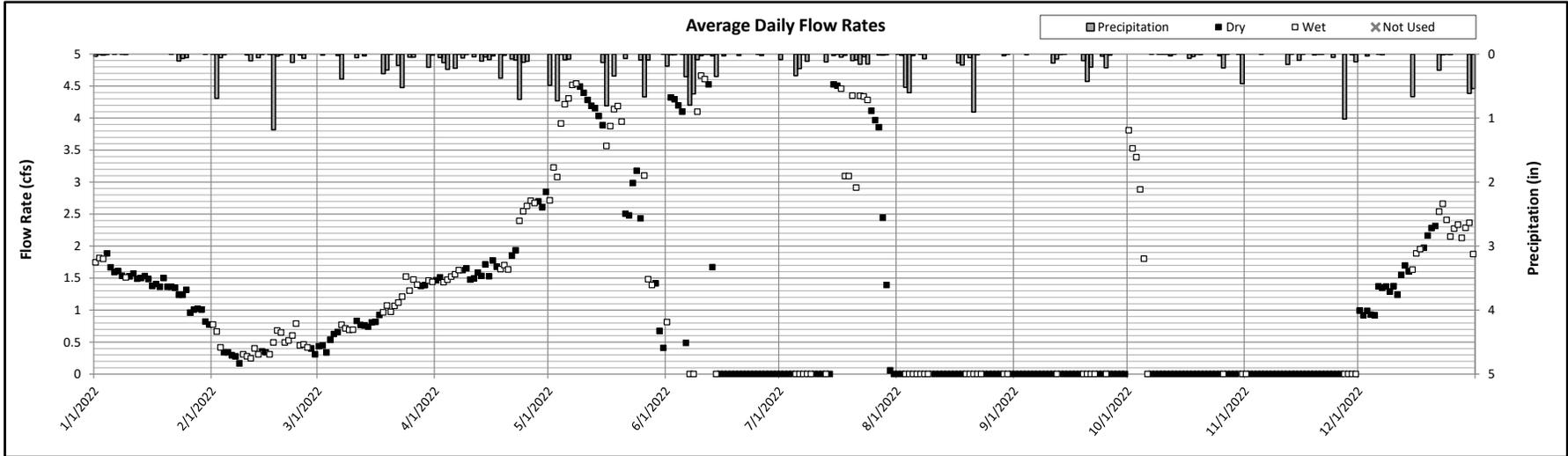
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-4
Meter Report

Meter: Pond 3W to DSDS
Type: Magmeter

Location: Detroit Metro Airport
System Meter Type: WCAA

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	1.4	28.0	1.4	27.1	27	4
Feb-22	0.4	7.8	0.3	5.7	9	19
Mar-22	0.9	18.9	0.8	15.3	15	16
Apr-22	1.9	36.5	1.8	35.3	17	13
May-22	3.3	65.7	3.0	60.8	15	16
Jun-22	1.3	24.4	1.0	19.9	23	7
Jul-22	1.8	36.0	1.5	29.3	17	14
Aug-22	0.0	0.0	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.5	10.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	1.8	35.4	1.5	29.3	18	13

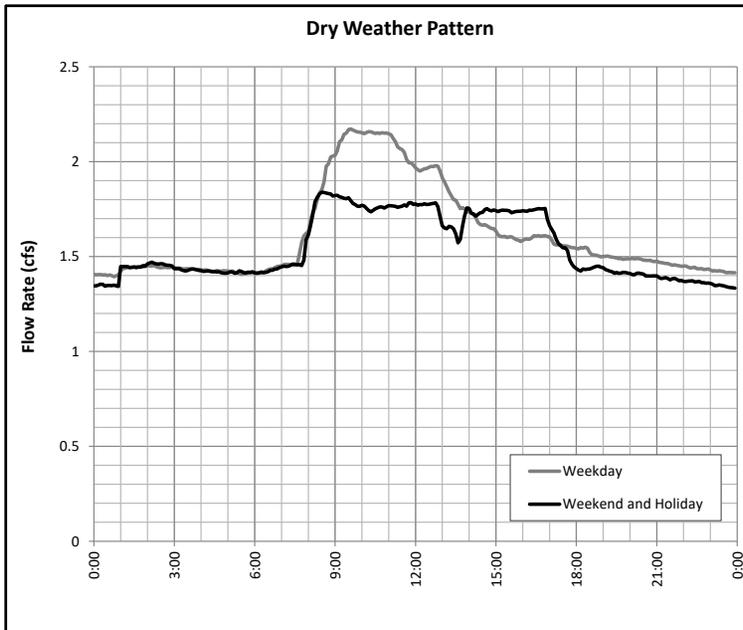
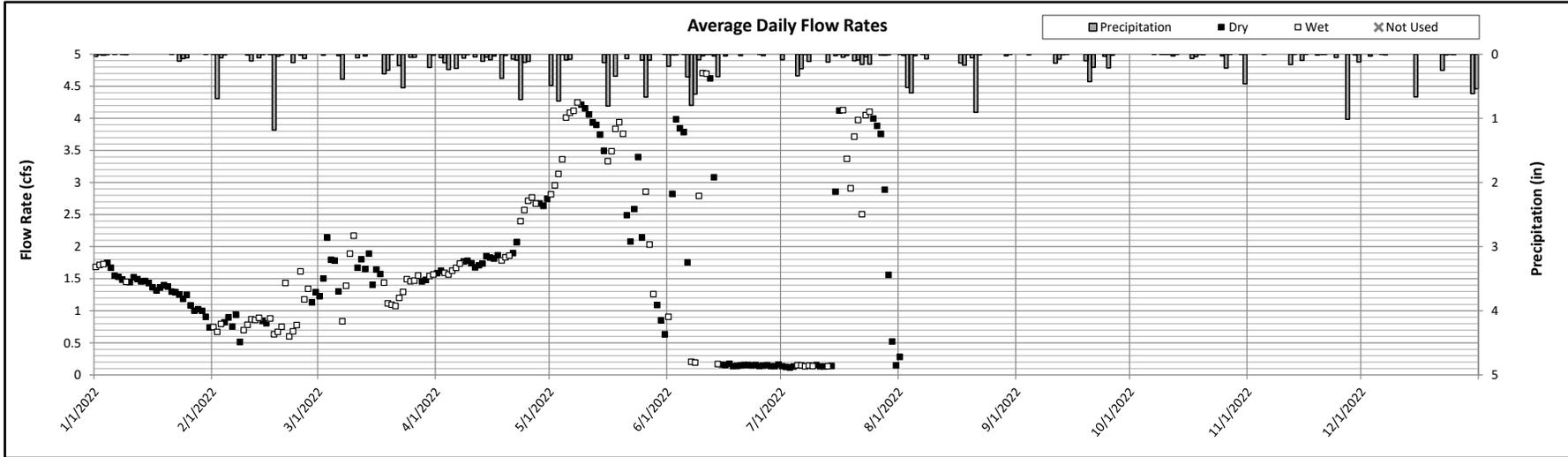
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-5
Meter Report

Meter: DMA-2
Type: ADS Triton

Location: Detroit Metro Airport
System Meter Type: Interceptor Flow Meter

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	27.3	1.3	26.4	27	4
Feb-22	0.9	16.1	0.9	16.1	9	19
Mar-22	1.5	30.3	1.6	32.5	15	16
Apr-22	2.0	38.6	1.9	37.6	17	13
May-22	3.1	62.0	2.9	57.1	15	16
Jun-22	1.3	25.8	1.1	22.1	23	7
Jul-22	1.8	35.2	1.5	29.2	17	14
Aug-22	-	-	-	-	1	0
Sep-22	-	-	-	-	0	0
Oct-22	-	-	-	-	0	0
Nov-22	-	-	-	-	0	0
Dec-22	-	-	-	-	0	0

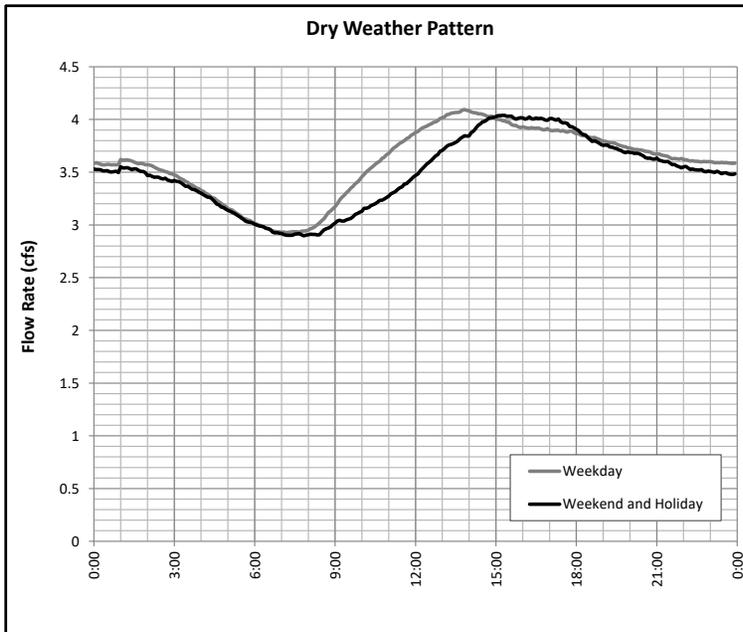
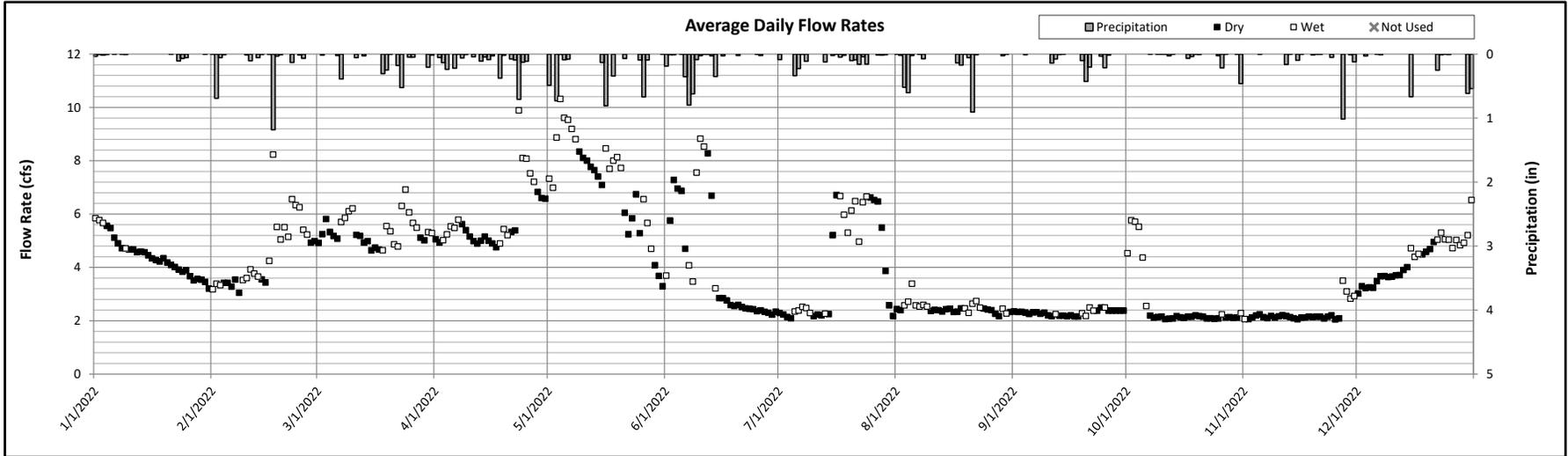
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-6
Meter Report

Meter: PD-2
Type: ADS Triton+

Location: Goddard Interceptor West of Inkster Road
System Meter Type: Interceptor Flow Meter

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



Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
	Jan-22	4.4	88.8	4.3	85.6	27
Feb-22	4.5	81.1	3.7	67.6	9	19
Mar-22	5.4	107.4	5.1	101.6	15	16
Apr-22	5.8	113.1	5.4	104.4	17	13
May-22	7.2	143.6	6.3	126.3	15	16
Jun-22	4.2	81.4	3.8	72.9	23	7
Jul-22	4.1	81.6	3.7	74.6	17	14
Aug-22	2.5	49.6	2.4	47.6	17	14
Sep-22	2.3	44.6	2.3	44.4	24	6
Oct-22	2.6	52.9	2.1	42.6	23	8
Nov-22	2.3	43.8	2.1	41.4	25	5
Dec-22	4.3	86.3	3.8	75.9	18	13

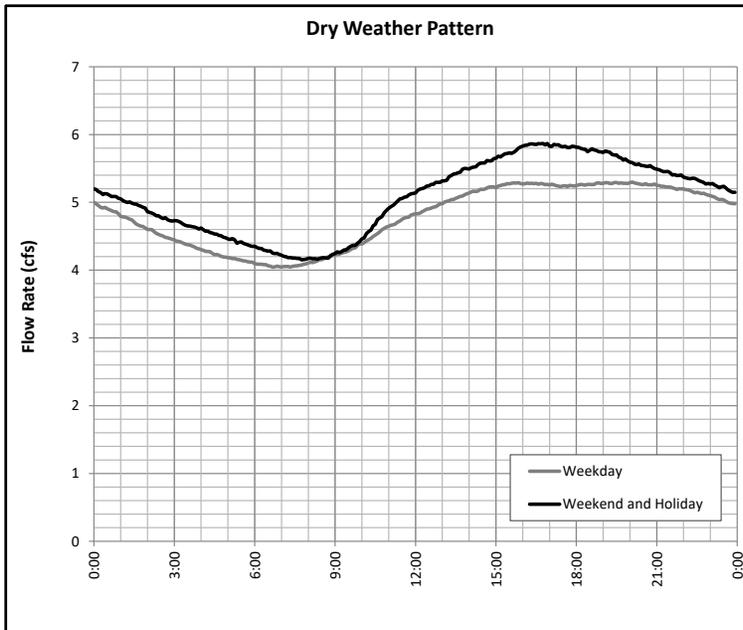
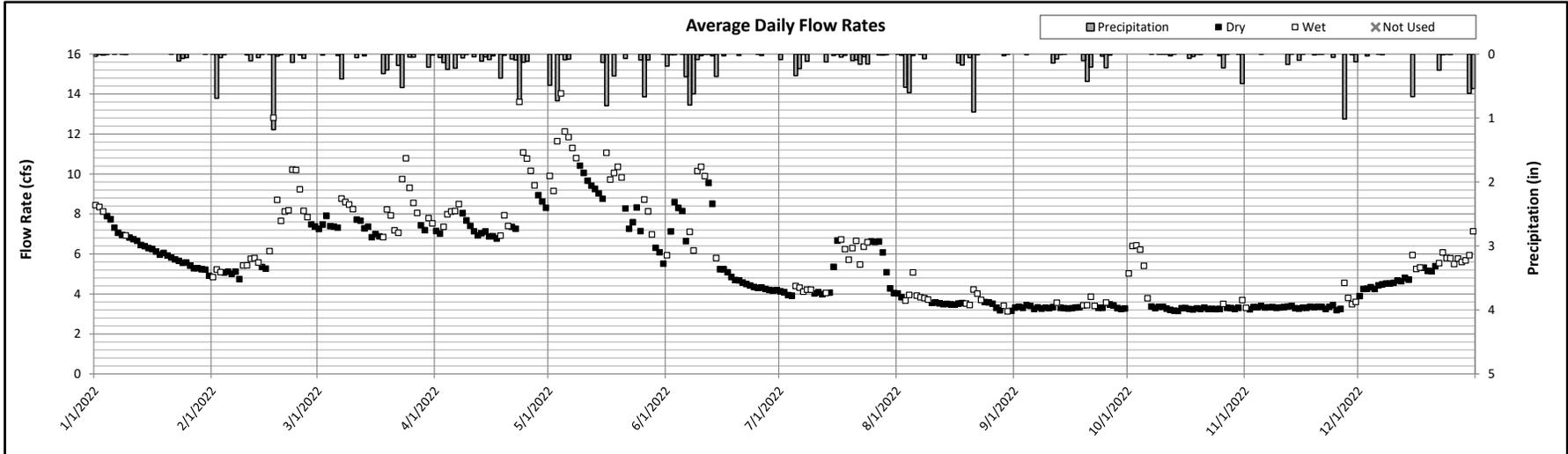
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
				-	-	-	-
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	

**Figure C-7
Meter Report**

Meter: PD-1
Type: ADS Triton+

Location: Goddard Interceptor West of Allen Road
System Meter Type: Interceptor Flow Meter

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	6.4	128.0	6.2	123.3	27	4
Feb-22	6.8	123.4	5.6	101.6	9	19
Mar-22	7.8	157.1	7.3	146.9	15	16
Apr-22	8.1	157.6	7.4	144.3	17	13
May-22	9.3	186.5	8.2	164.3	15	16
Jun-22	6.2	119.7	5.6	109.5	23	7
Jul-22	5.1	102.7	4.9	98.5	17	14
Aug-22	3.7	73.1	3.5	70.5	17	14
Sep-22	3.4	65.3	3.3	64.4	24	6
Oct-22	3.7	74.7	3.3	65.5	23	8
Nov-22	3.4	65.8	3.3	64.4	25	5
Dec-22	5.1	102.5	4.6	92.7	18	13

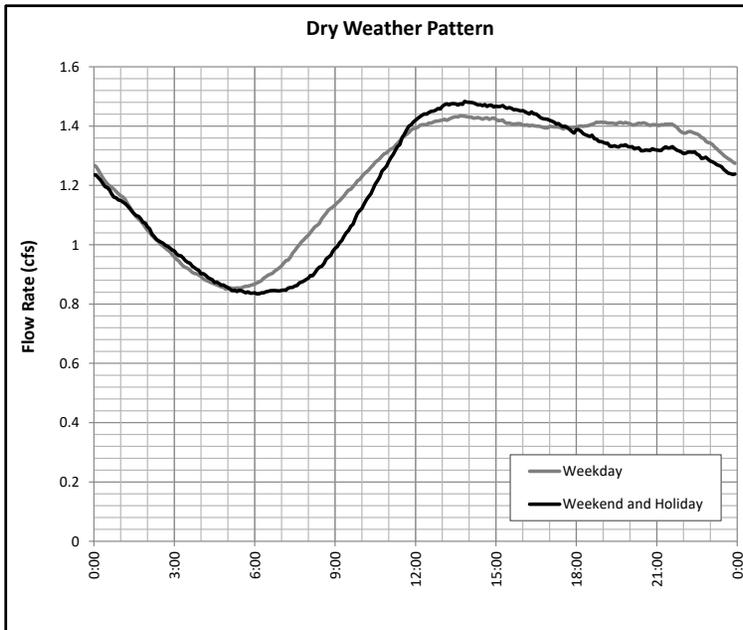
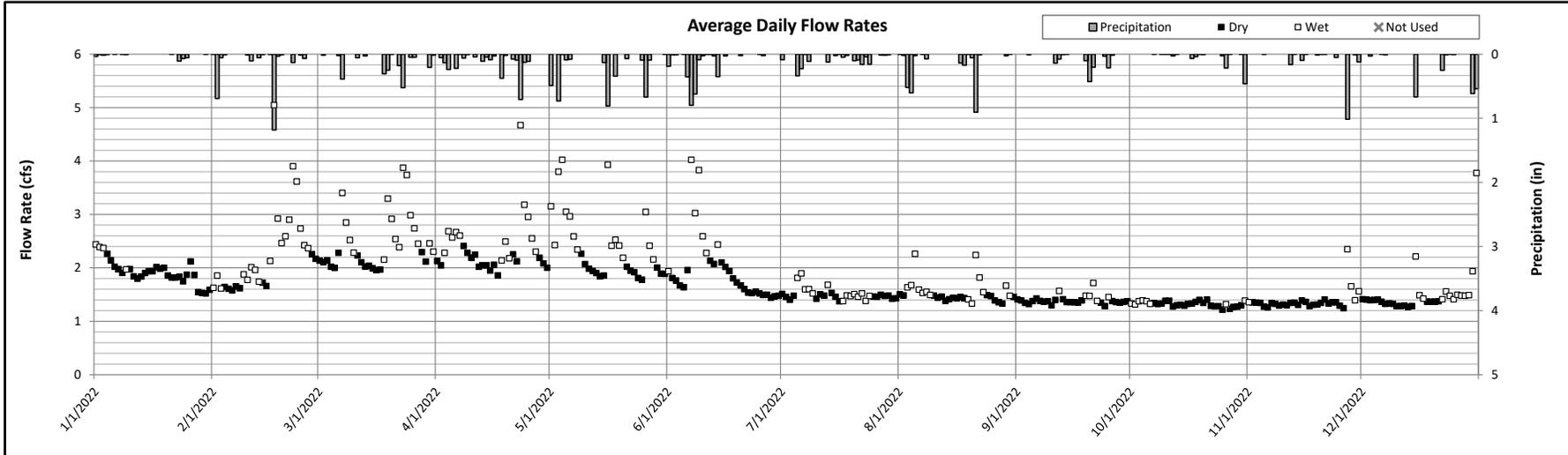
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-8
Meter Report

Meter: PB-1
Type: ADS Triton

Location: Northline Interceptor West of Fordline Road
System Meter Type: Interceptor Flow Meter

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	1.9	38.7	1.9	37.6	27	4
Feb-22	2.3	41.0	1.8	32.0	9	19
Mar-22	2.5	49.3	2.1	41.9	15	16
Apr-22	2.4	46.0	2.1	41.0	17	13
May-22	2.4	48.2	1.9	38.9	15	16
Jun-22	2.0	38.5	1.7	33.2	23	7
Jul-22	1.5	30.1	1.5	29.3	17	14
Aug-22	1.5	30.8	1.4	28.8	17	14
Sep-22	1.4	27.0	1.4	26.5	24	6
Oct-22	1.3	26.5	1.3	26.3	23	8
Nov-22	1.4	26.8	1.3	25.7	25	5
Dec-22	1.5	30.3	1.3	27.0	18	13

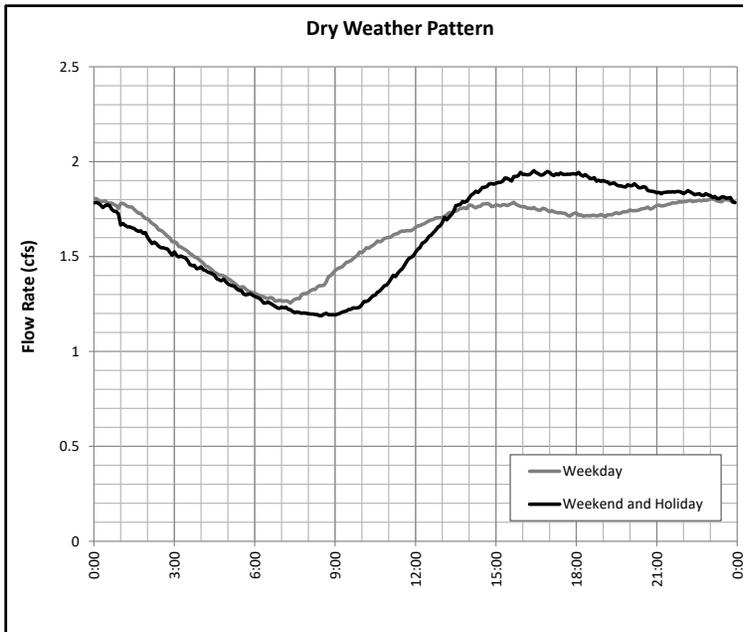
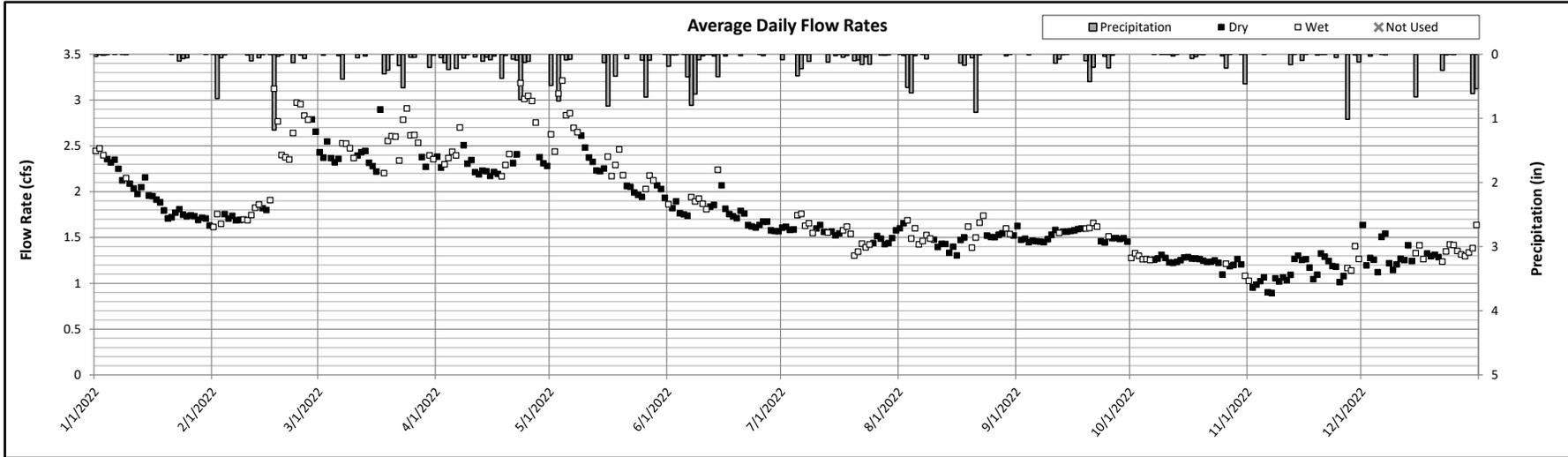
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

**Figure C-9
Meter Report**

Meter: PA-4
Type: ADS Triton+

Location: Eureka Interceptor near Hannan Road
System Meter Type: Interceptor Flow Meter

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	2.0	39.7	1.9	38.5	27	4
Feb-22	2.2	39.1	2.0	35.5	9	19
Mar-22	2.5	49.4	2.4	48.1	15	16
Apr-22	2.4	47.2	2.3	44.4	17	13
May-22	2.3	47.0	2.2	43.5	15	16
Jun-22	1.8	34.5	1.7	33.6	23	7
Jul-22	1.5	30.8	1.5	30.9	17	14
Aug-22	1.5	30.3	1.5	29.6	17	14
Sep-22	1.5	29.6	1.5	29.3	24	6
Oct-22	1.2	24.9	1.2	24.9	23	8
Nov-22	1.1	21.8	1.1	21.6	25	5
Dec-22	1.3	26.6	1.3	26.1	18	13

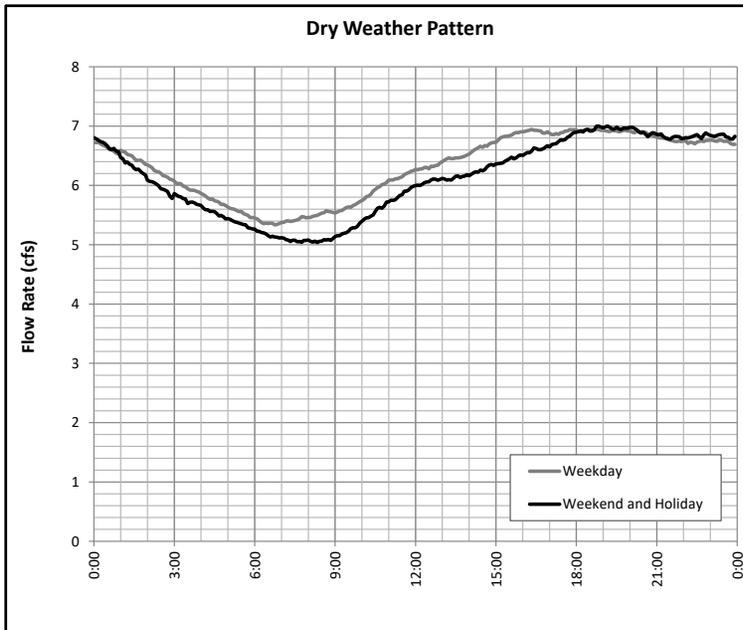
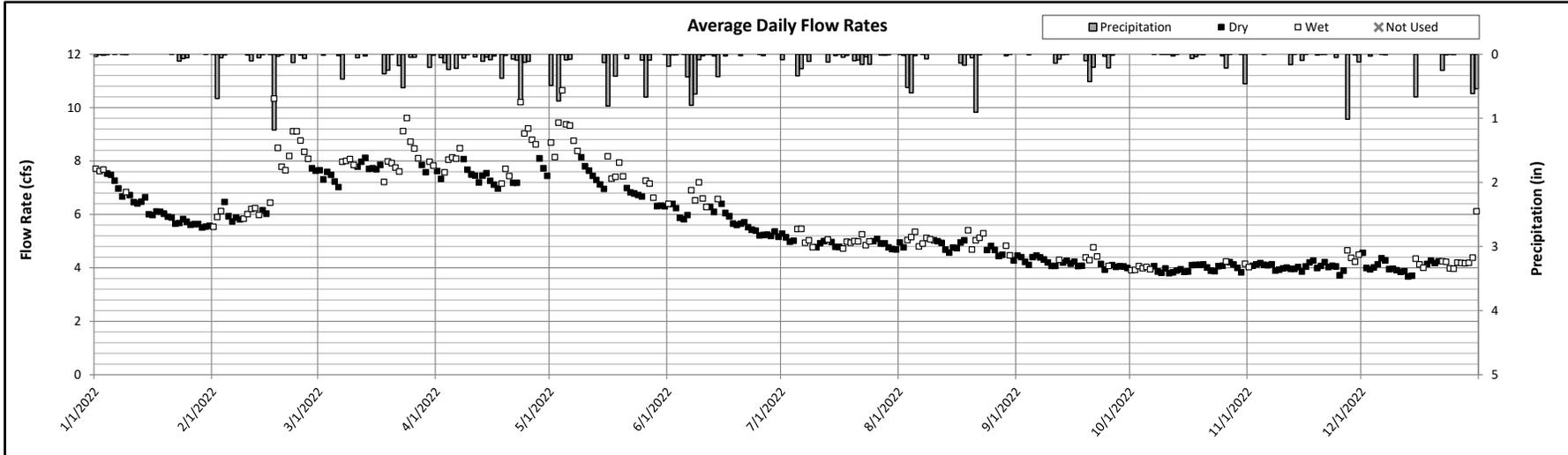
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-10
Meter Report

Meter: PA-3
Type: ADS Triton+

Location: Eureka Interceptor at Inkster Road
System Meter Type: Interceptor Flow Meter

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	6.4	127.3	6.2	124.0	27	4
Feb-22	7.1	127.6	6.4	115.3	9	19
Mar-22	7.9	158.2	7.6	153.1	15	16
Apr-22	7.8	152.1	7.5	144.6	17	13
May-22	7.7	153.4	7.0	140.7	15	16
Jun-22	5.9	115.0	5.7	110.8	23	7
Jul-22	5.0	99.6	4.9	98.6	17	14
Aug-22	4.9	97.6	4.8	95.2	17	14
Sep-22	4.2	81.8	4.2	81.1	24	6
Oct-22	4.0	79.9	4.0	79.6	23	8
Nov-22	4.1	79.3	4.0	78.3	25	5
Dec-22	4.2	83.5	4.1	81.3	18	13

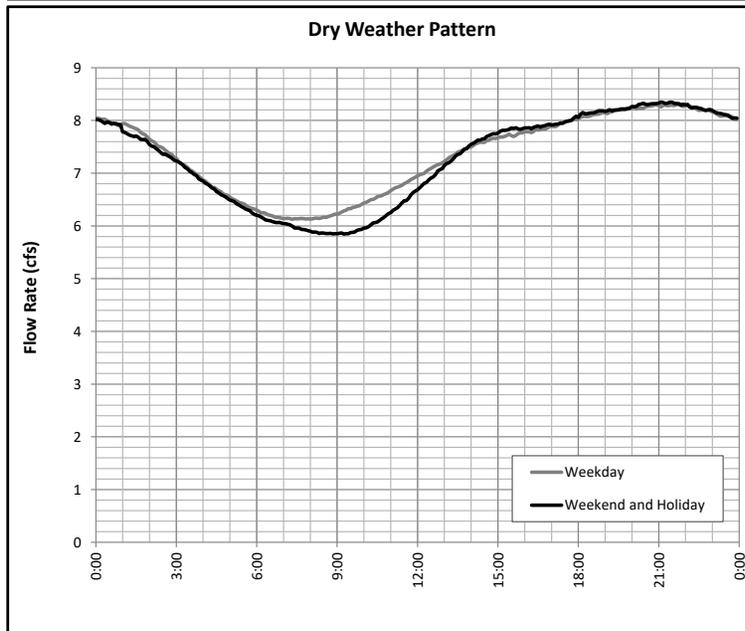
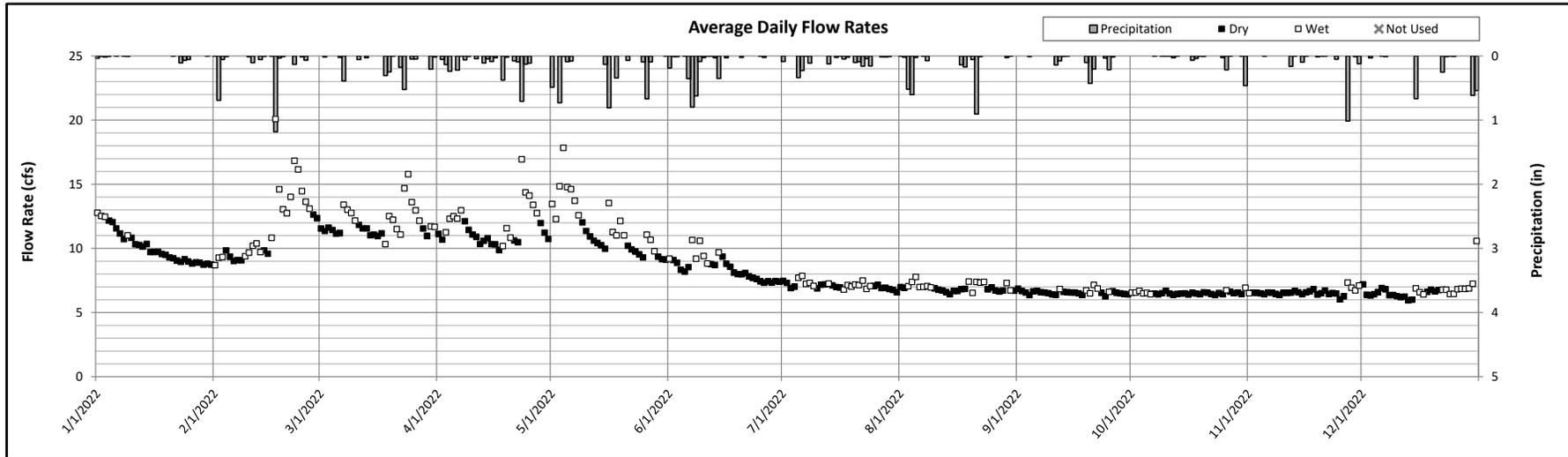
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-11
Meter Report

Meter: PA-2
Type: ADS Triton+

Location: Eureka Interceptor at Allen Road
System Meter Type: Interceptor Flow Meter

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	10.1	202.9	9.8	196.8	27	4
Feb-22	11.7	211.2	10.1	182.4	9	19
Mar-22	12.0	240.1	11.3	227.0	15	16
Apr-22	11.7	226.2	10.9	210.5	17	13
May-22	11.5	230.4	10.1	202.8	15	16
Jun-22	8.5	164.3	8.1	157.5	23	7
Jul-22	7.1	142.4	7.0	140.5	17	14
Aug-22	6.9	139.0	6.8	135.3	17	14
Sep-22	6.6	127.6	6.5	126.6	24	6
Oct-22	6.5	130.6	6.5	130.0	23	8
Nov-22	6.6	127.4	6.5	126.1	25	5
Dec-22	6.7	134.6	6.5	130.0	18	13

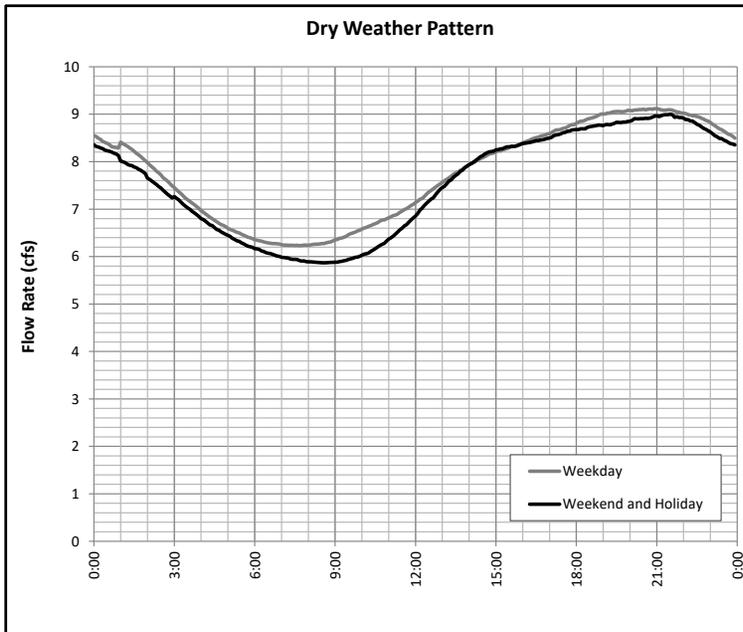
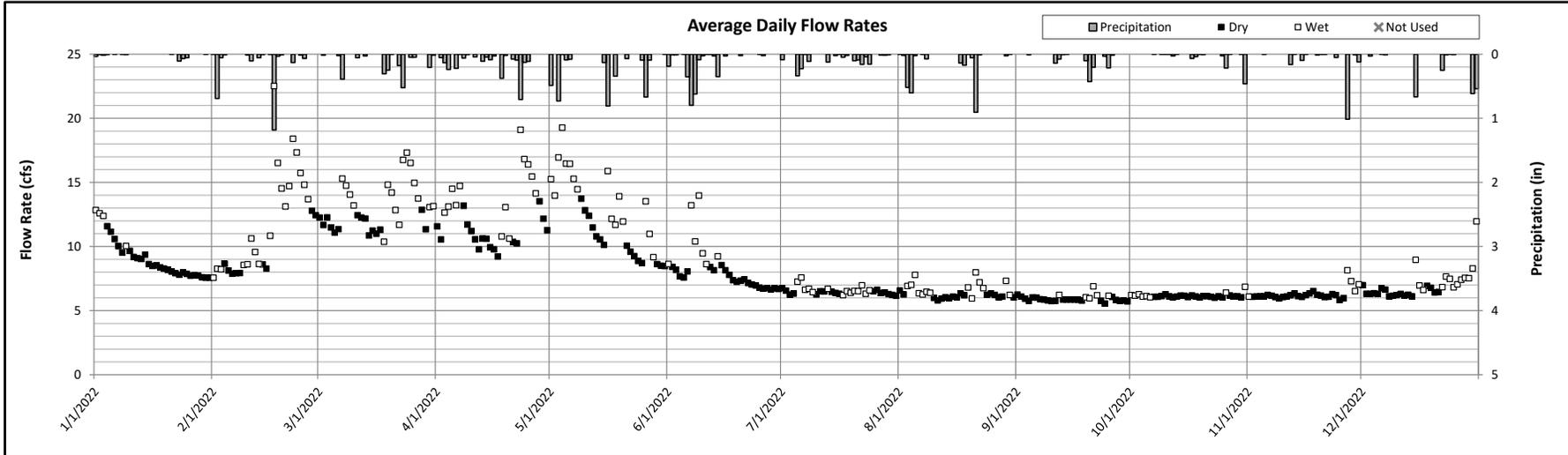
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-12
Meter Report

Meter: PA-1
Type: ADS Triton+

Location: Eureka Interceptor West of Fordline Road
System Meter Type: Interceptor Flow Meter

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	9.1	182.9	8.7	174.5	27	4
Feb-22	11.6	209.9	9.2	166.0	9	19
Mar-22	13.0	260.0	11.7	234.5	15	16
Apr-22	12.4	239.6	11.0	212.4	17	13
May-22	12.3	246.4	10.3	205.6	15	16
Jun-22	8.2	158.5	7.5	144.8	23	7
Jul-22	6.5	130.6	6.4	128.3	17	14
Aug-22	6.4	129.0	6.1	122.8	17	14
Sep-22	5.9	115.1	5.9	113.6	24	6
Oct-22	6.1	123.2	6.1	122.3	23	8
Nov-22	6.3	121.9	6.1	119.1	25	5
Dec-22	7.0	140.0	6.4	128.6	18	13

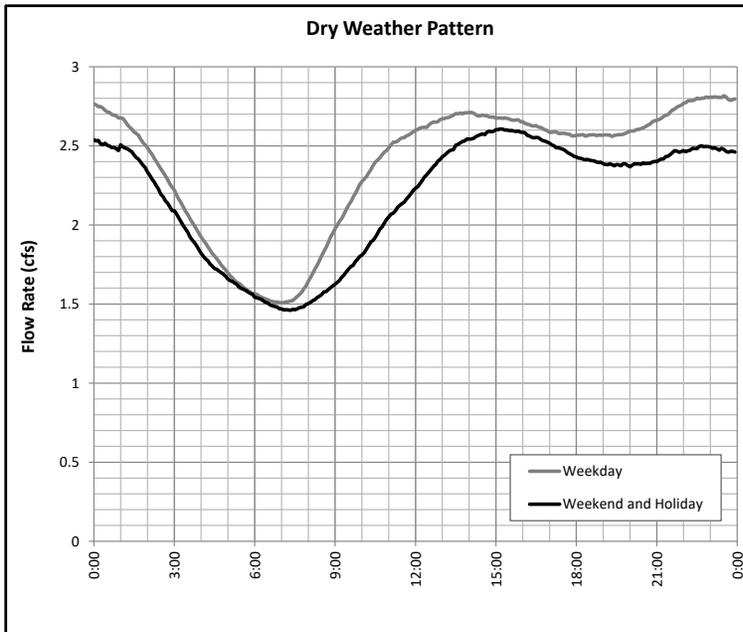
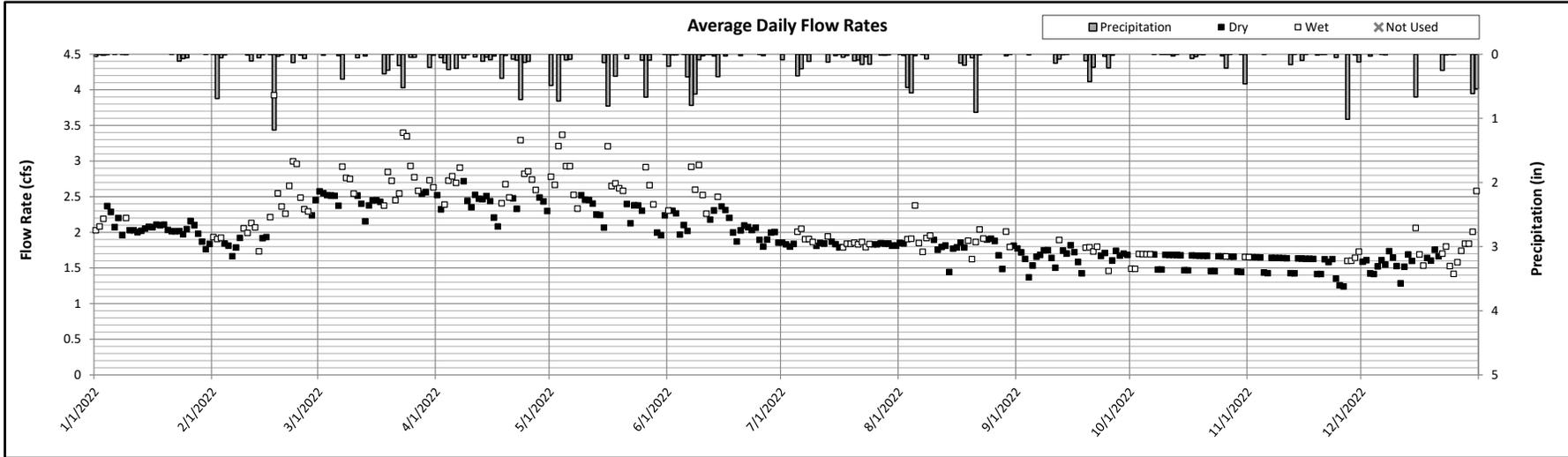
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-13
Meter Report

Meter: P-2
Type: ADS Triton+

Location: Pennsylvania Interceptor East of Dix-Toledo Road
System Meter Type: Interceptor Flow Meter

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



Month	Monthly Statistics					
	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	2.1	41.2	2.0	41.0	27	4
Feb-22	2.2	40.3	2.0	35.3	9	19
Mar-22	2.6	52.5	2.5	49.3	15	16
Apr-22	2.5	49.4	2.4	46.9	17	13
May-22	2.5	50.8	2.3	45.6	15	16
Jun-22	2.2	42.5	2.1	40.2	23	7
Jul-22	1.9	37.1	1.8	36.7	17	14
Aug-22	1.8	36.9	1.8	35.7	17	14
Sep-22	1.7	32.5	1.7	32.1	24	6
Oct-22	1.6	32.2	1.6	32.1	23	8
Nov-22	1.6	30.2	1.5	29.9	25	5
Dec-22	1.7	33.4	1.6	31.6	18	13

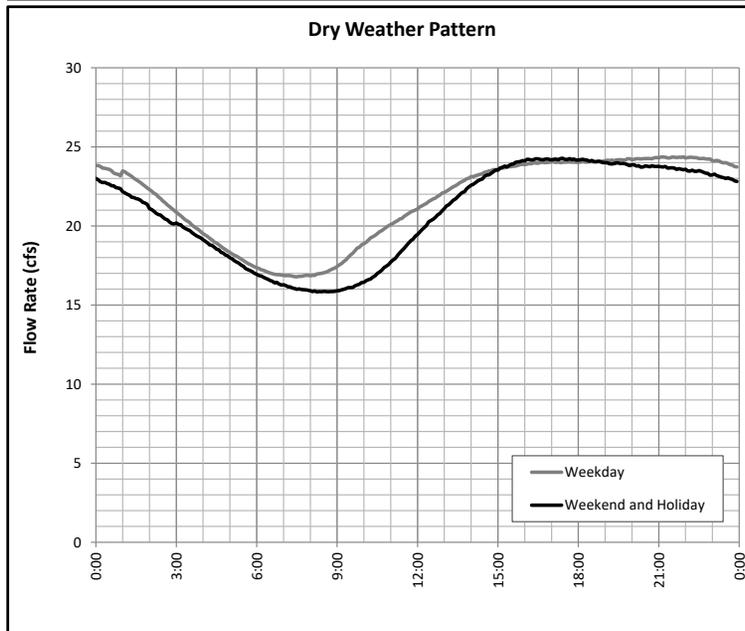
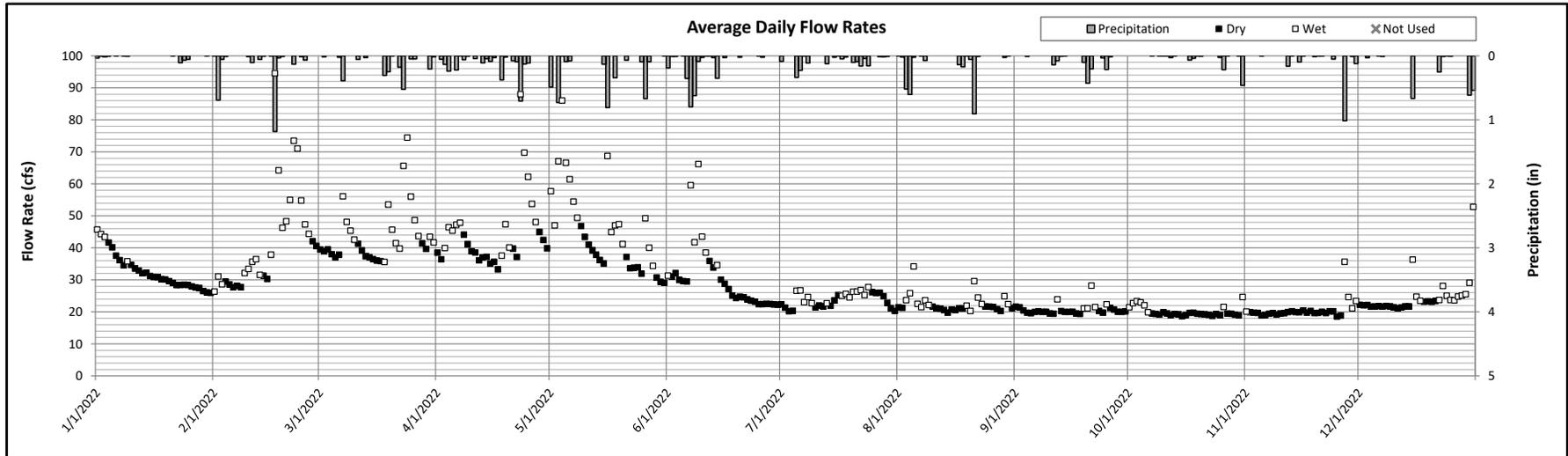
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-14
Meter Report

Meter: P-1
 Type: Accusonic 7510

Location: Pennsylvania Interceptor East of Fort Street
 System Meter Type: Interceptor Flow Meter

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	32.6	653.7	31.2	625.0	27	4
Feb-22	42.1	761.3	31.7	574.4	9	19
Mar-22	43.8	876.6	38.3	768.0	15	16
Apr-22	44.3	859.2	38.6	748.3	17	13
May-22	45.2	905.7	35.9	720.1	15	16
Jun-22	30.9	598.9	26.6	515.3	23	7
Jul-22	23.9	478.8	22.8	456.1	17	14
Aug-22	22.5	450.3	21.0	421.2	17	14
Sep-22	20.7	401.3	20.1	390.1	24	6
Oct-22	20.0	401.4	19.2	385.5	23	8
Nov-22	20.5	398.1	19.6	380.9	25	5
Dec-22	24.6	493.0	22.1	441.9	18	13

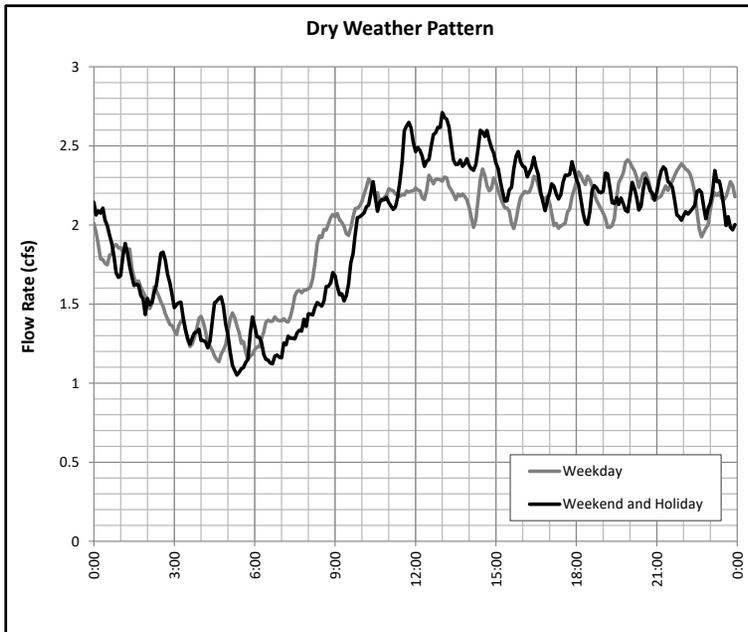
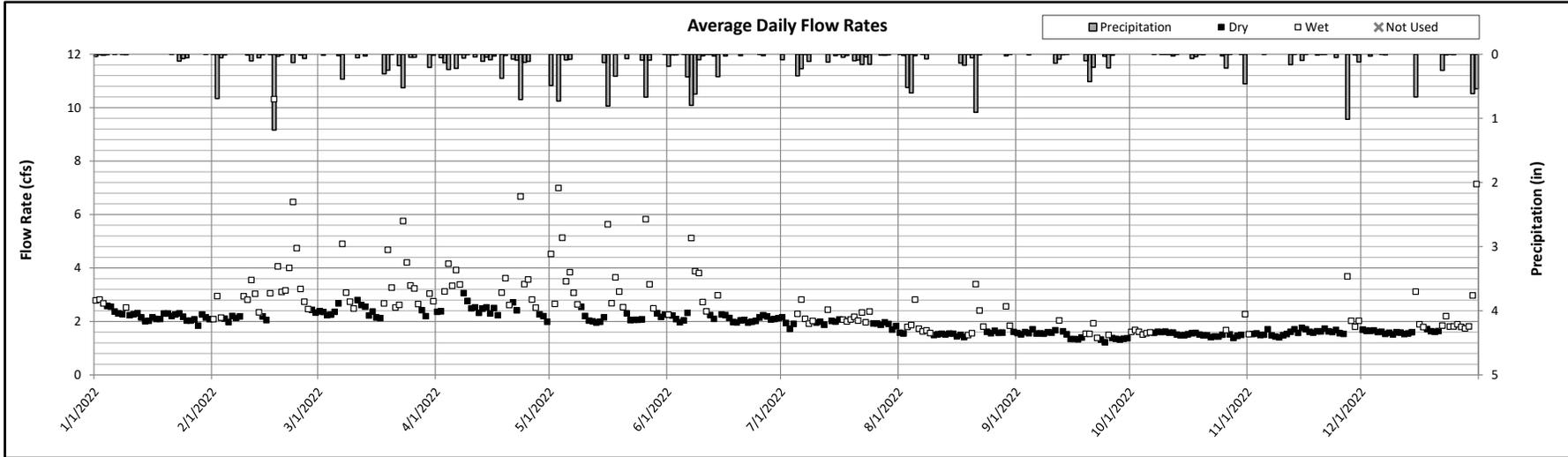
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-15
Meter Report

Meter: RV-1
Type: ADS Triton+

Location: Pennsylvania Interceptor West of Jefferson Avenue
System Meter Type: Interceptor Flow Meter

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	2.3	45.4	2.2	44.1	27	4
Feb-22	3.2	57.4	2.2	39.4	9	19
Mar-22	2.9	58.0	2.4	47.7	15	16
Apr-22	2.9	56.7	2.4	47.4	17	13
May-22	3.0	60.7	2.1	43.0	15	16
Jun-22	2.4	46.3	2.1	40.9	23	7
Jul-22	2.0	41.0	1.9	38.6	17	14
Aug-22	1.8	35.1	1.5	30.9	17	14
Sep-22	1.5	29.3	1.5	28.6	24	6
Oct-22	1.6	31.2	1.5	30.3	23	8
Nov-22	1.7	32.8	1.6	30.8	25	5
Dec-22	2.0	39.3	1.6	32.2	18	13

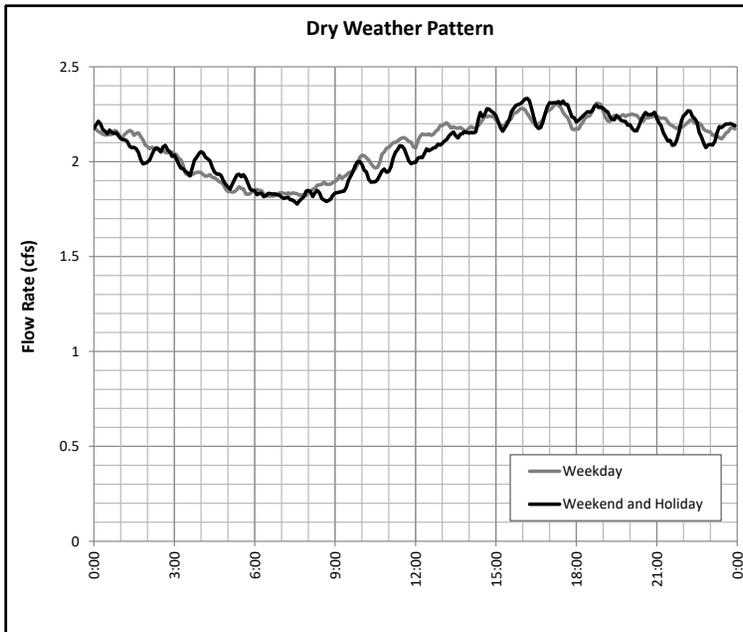
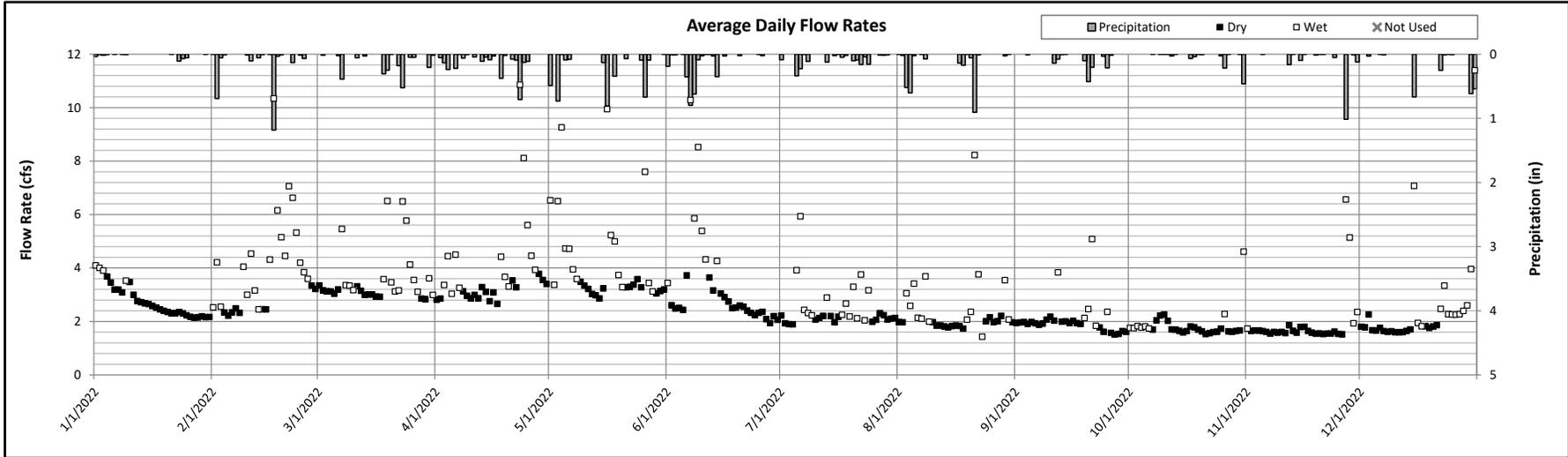
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-16
Meter Report

Meter: RR-1
 Type: ADS Triton

Location: 17th Street near Visger Road
 System Meter Type: Interceptor Flow Meter

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	2.8	55.7	2.6	52.4	27	4
Feb-22	4.0	71.5	2.6	46.6	9	19
Mar-22	3.6	71.6	3.1	61.5	15	16
Apr-22	3.9	74.9	3.1	60.3	17	13
May-22	4.3	85.5	3.2	64.5	15	16
Jun-22	3.4	65.5	2.6	50.0	23	7
Jul-22	2.5	49.6	2.1	42.0	17	14
Aug-22	2.4	48.6	1.9	38.6	17	14
Sep-22	2.1	40.4	1.9	36.2	24	6
Oct-22	1.9	37.2	1.7	34.9	23	8
Nov-22	1.9	37.6	1.6	31.4	25	5
Dec-22	2.5	49.9	1.7	34.7	18	13

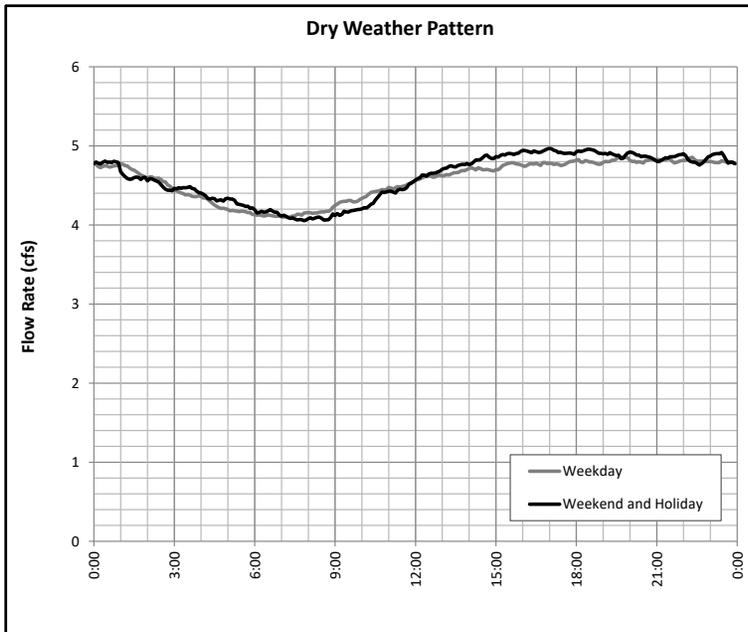
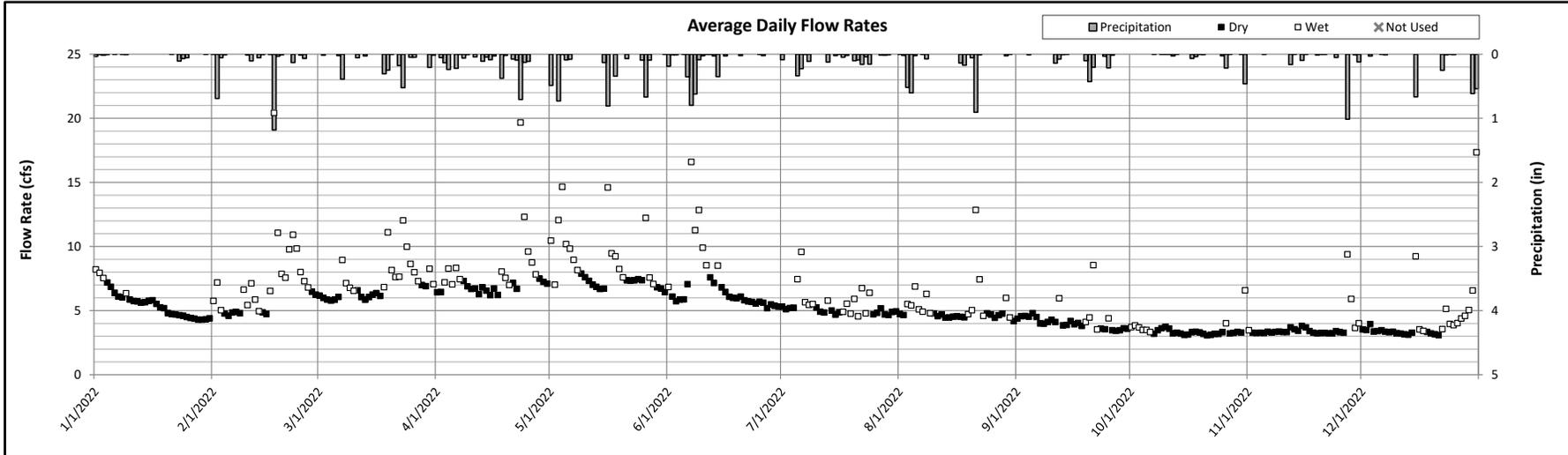
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-17
Meter Report

Meter: EC-6
Type: ADS Triton

Location: Riverdrive Interceptor South of Southfield Road
System Meter Type: Interceptor Flow Meter

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	5.6	111.7	5.3	106.0	27	4
Feb-22	7.2	129.4	5.1	93.0	9	19
Mar-22	7.3	145.3	6.2	124.1	15	16
Apr-22	7.8	151.2	6.8	131.1	17	13
May-22	8.5	170.8	7.1	142.8	15	16
Jun-22	7.1	137.4	6.0	116.4	23	7
Jul-22	5.4	108.1	5.0	99.3	17	14
Aug-22	5.2	104.6	4.6	91.8	17	14
Sep-22	4.2	82.2	4.0	77.7	24	6
Oct-22	3.5	69.7	3.3	65.9	23	8
Nov-22	3.7	71.4	3.4	65.2	25	5
Dec-22	4.3	87.0	3.3	66.8	18	13

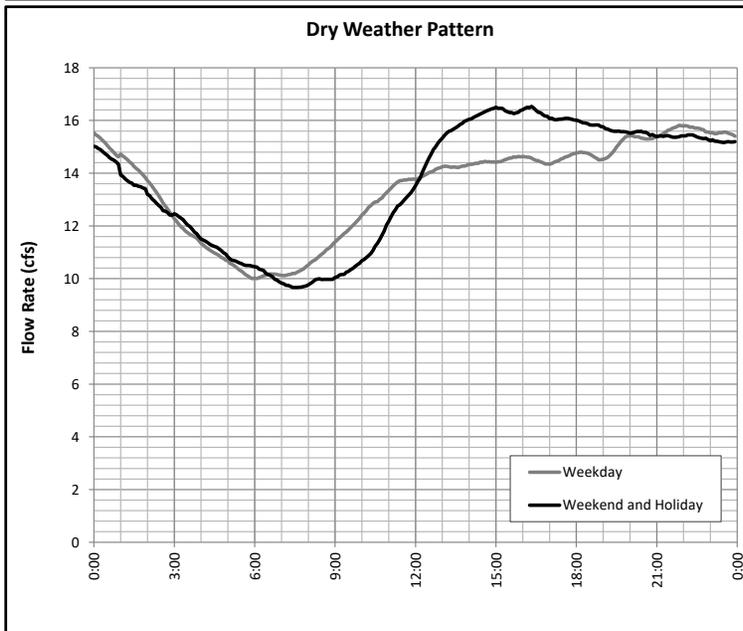
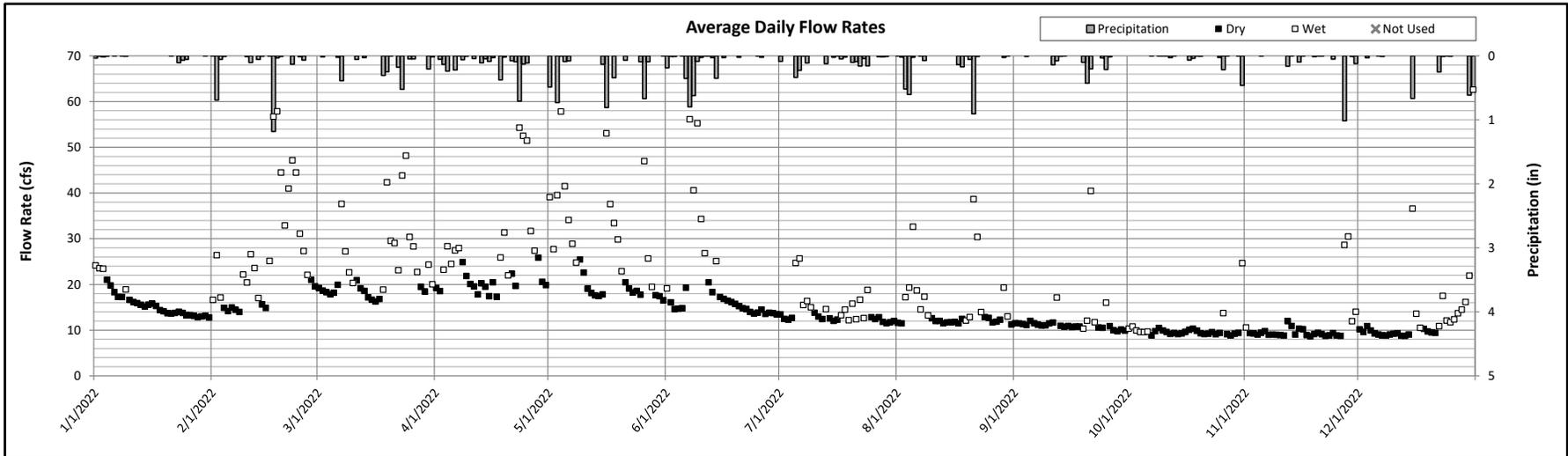
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-18
Meter Report

Meter: RD-1
 Type: Accusonic 7510

Location: Riverdrive Interceptor North of Northline Road
 System Meter Type: Interceptor Flow Meter

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



Month	Monthly Statistics					
	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	16.1	322.0	15.1	302.9	27	4
Feb-22	26.5	480.4	15.9	288.3	9	19
Mar-22	24.0	480.7	18.4	368.0	15	16
Apr-22	25.8	499.5	20.3	393.5	17	13
May-22	27.3	546.7	18.9	379.0	15	16
Jun-22	20.4	396.2	15.5	299.9	23	7
Jul-22	14.2	284.4	12.5	250.0	17	14
Aug-22	15.4	307.6	11.9	239.2	17	14
Sep-22	12.3	238.9	10.9	211.7	24	6
Oct-22	10.2	204.2	9.5	189.7	23	8
Nov-22	11.0	212.9	9.4	181.3	25	5
Dec-22	13.7	273.9	9.4	188.9	18	13

Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-19
Meter Report

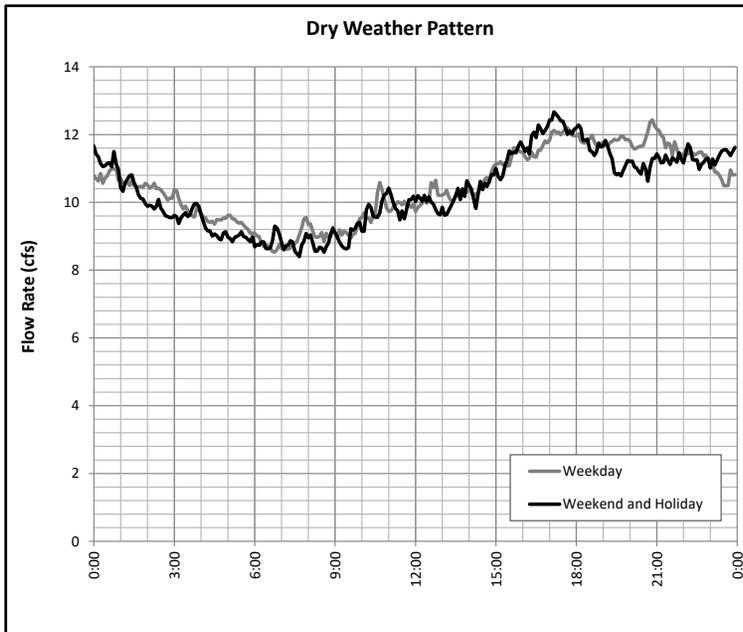
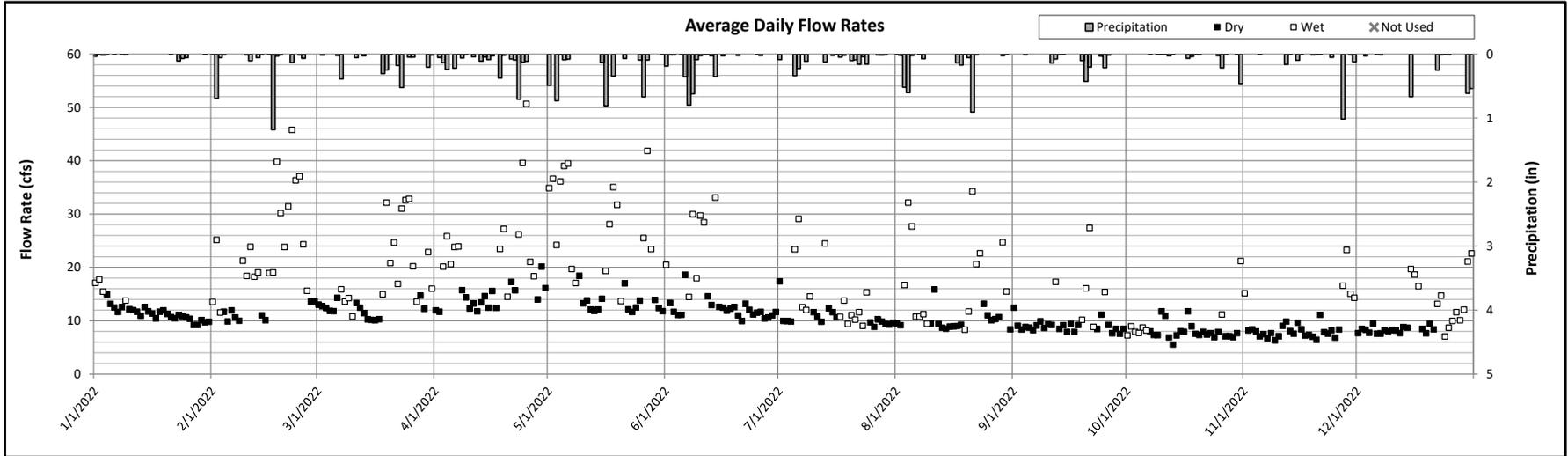
Meter: [SW] + [SWB]

Location: Southgate / Wyandotte

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

Type: Accusonic 7510 (SW) & Magmeter (SWB)

System Meter Type: Total for SWDDD



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-22	11.9	238.5	11.3	226.3	27	4
Feb-22	20.6	372.2	11.4	206.1	9	19
Mar-22	16.6	332.3	12.1	241.8	15	16
Apr-22	19.3	373.6	14.3	276.9	17	13
May-22	21.5	430.9	13.4	268.3	15	16
Jun-22	15.1	293.1	12.1	235.5	23	7
Jul-22	12.5	250.8	10.6	213.1	17	14
Aug-22	13.8	275.8	10.0	200.7	17	14
Sep-22	10.3	200.4	9.0	173.6	24	6
Oct-22	8.5	170.8	8.0	159.6	23	8
Nov-22	9.4	182.1	7.9	153.0	25	5
Dec-22	10.8	216.1	8.2	165.3	18	13

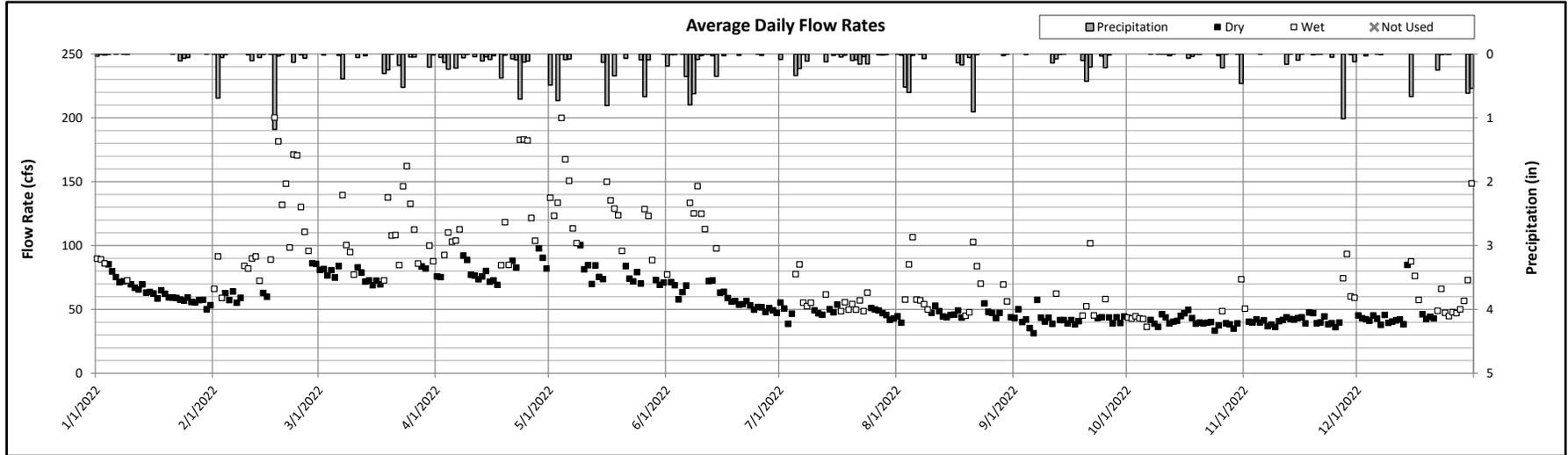
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-20
Meter Report

Meter: [IPS] + [TPS]
 Type: Magmeters

Location: Main Influent Pump Station and Tunnel Pump Station
 System Meter Type: DWTF

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	66.1	1323.8	63.4	1269.4	27	4
Feb-22	98.4	1781.5	65.9	1191.7	9	19
Mar-22	93.9	1881.5	77.4	1550.8	15	16
Apr-22	98.4	1907.6	80.5	1561.0	17	13
May-22	105.2	2108.7	77.4	1551.3	15	16
Jun-22	71.9	1394.4	58.2	1129.3	23	7
Jul-22	52.5	1051.5	47.8	957.7	17	14
Aug-22	55.9	1120.3	46.5	931.3	17	14
Sep-22	45.7	886.3	41.9	813.2	24	6
Oct-22	42.2	844.6	40.5	811.5	23	8
Nov-22	45.4	879.5	40.9	793.7	25	5
Dec-22	53.5	1071.2	44.8	897.1	18	13

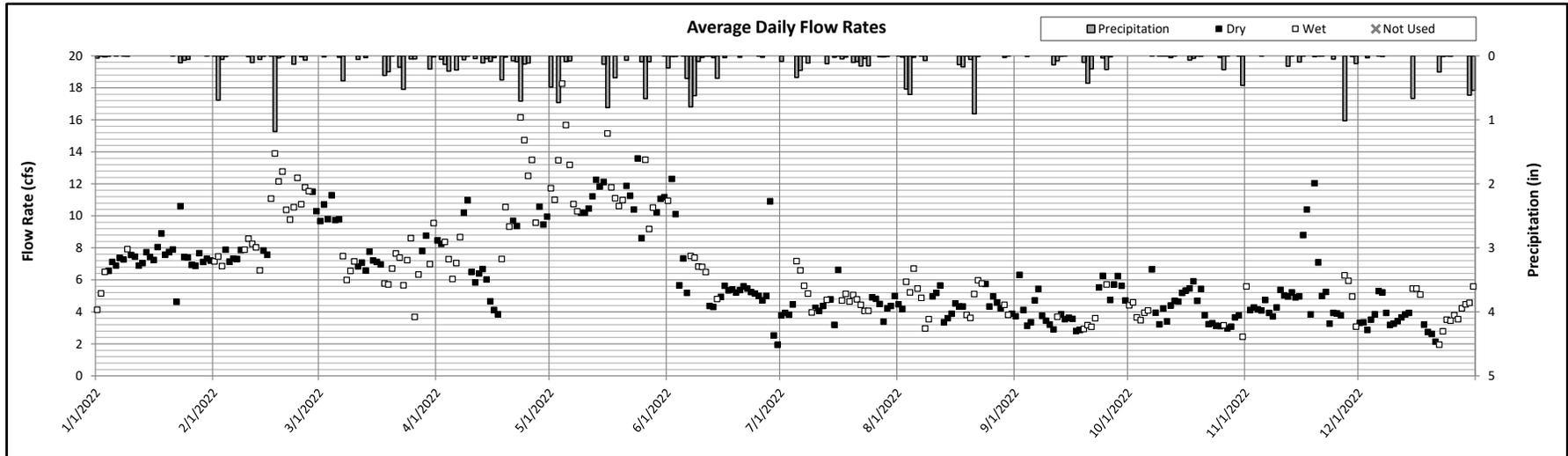
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-21
Meter Report

Meter: DWTF Recycle
Type: HydroRanger 200

Location: Main Influent Pump Station
System Meter Type: Parshall Flume

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	7.2	144.4	7.4	148.2	27	4
Feb-22	9.4	169.6	8.3	150.2	9	19
Mar-22	7.6	152.2	8.5	169.7	15	16
Apr-22	8.7	169.3	7.7	149.3	17	13
May-22	11.7	235.0	11.1	222.2	15	16
Jun-22	6.1	118.5	5.8	111.8	23	7
Jul-22	4.7	93.4	4.4	87.7	17	14
Aug-22	4.6	92.6	4.5	89.8	17	14
Sep-22	4.2	81.0	4.3	83.3	24	6
Oct-22	4.1	82.0	4.2	84.7	23	8
Nov-22	5.2	101.3	5.2	101.6	25	5
Dec-22	3.8	75.7	3.5	70.5	18	13

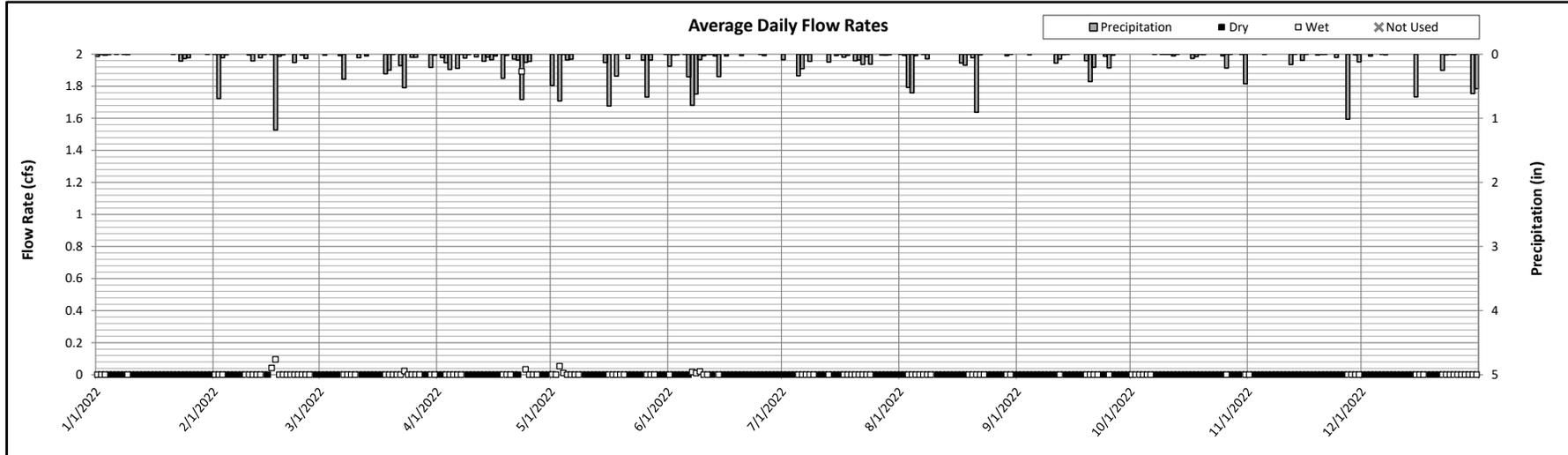
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-22
Meter Report

Meter: TSO
Type: ADS Triton+

Location: At Pelham Basin
System Meter Type: Tunnel System Flow Meter

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	27	4
Feb-22	0.0	0.1	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.1	1.2	0.0	0.0	17	13
May-22	0.0	0.0	0.0	0.0	15	16
Jun-22	0.0	0.0	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.0	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	18	13

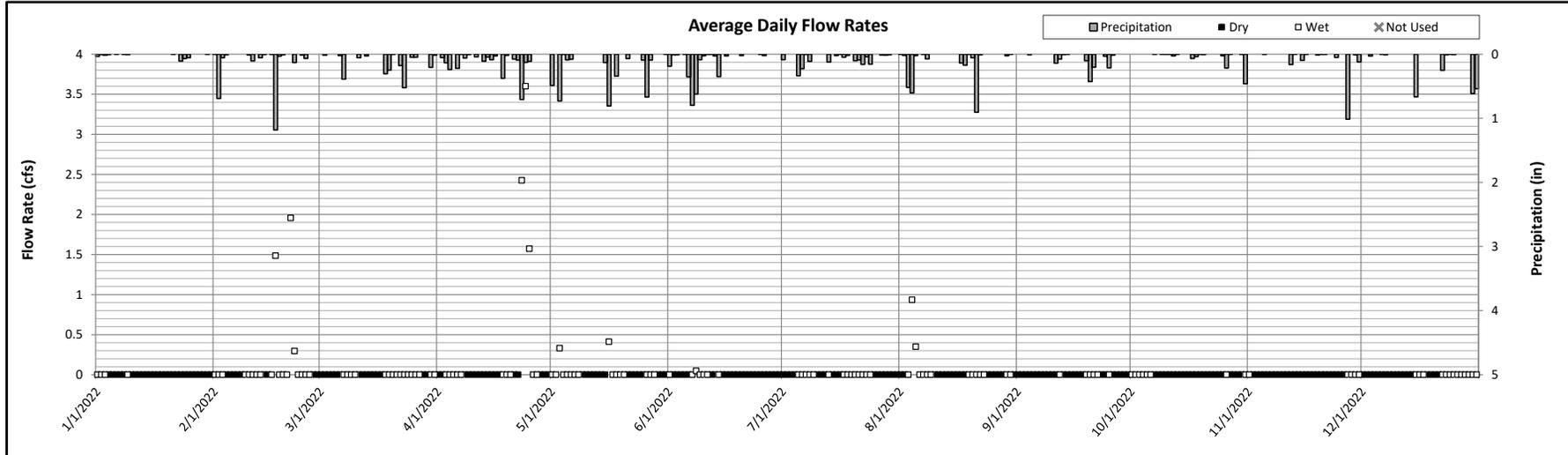
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-23
Meter Report

Meter: APO-1
 Type: Siemems Hydranger

Location: Belmont and Rosedale
 System Meter Type: Tunnel Diversion Chamber Level Sensor

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	27	4
Feb-22	0.1	2.4	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.3	4.9	0.0	0.0	17	13
May-22	0.0	0.5	0.0	0.0	15	16
Jun-22	0.0	0.0	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.8	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	18	13

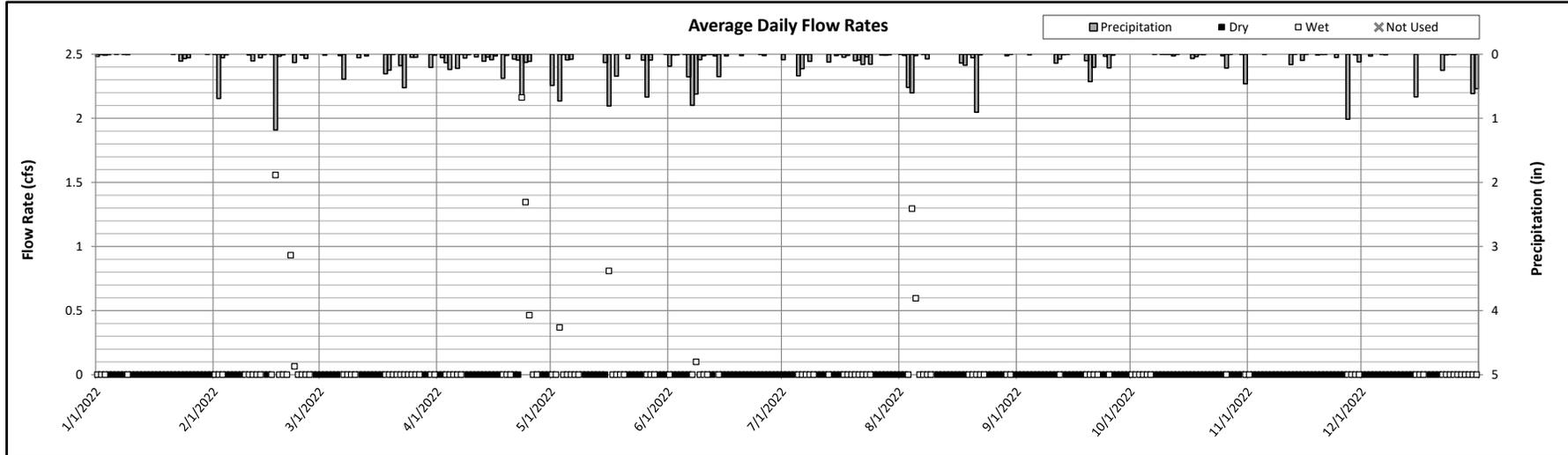
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-24
Meter Report

Meter: APO-2
 Type: Milltronics Downlooker

Location: Belmont and Quandt
 System Meter Type: Tunnel Diversion Chamber Level Sensor

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	27	4
Feb-22	0.1	1.7	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.1	2.6	0.0	0.0	17	13
May-22	0.0	0.8	0.0	0.0	15	16
Jun-22	0.0	0.1	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.1	1.2	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	18	13

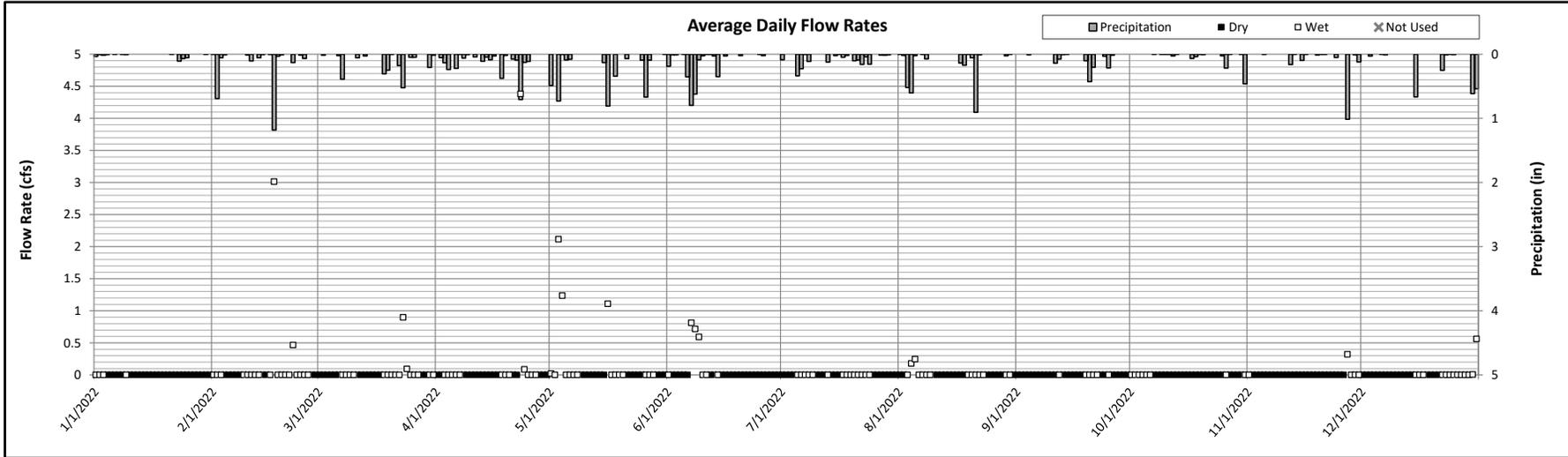
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-25
Meter Report

Meter: CHPO
Type: Milltronics Downlooker

Location: Pelham Road North of Haskell
System Meter Type: Tunnel Diversion Chamber Level Sensor

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	27	4
Feb-22	0.1	2.3	0.0	0.0	9	19
Mar-22	0.0	0.6	0.0	0.0	15	16
Apr-22	0.1	2.9	0.0	0.0	17	13
May-22	0.1	2.9	0.0	0.0	15	16
Jun-22	0.1	1.4	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.3	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.2	0.0	0.0	25	5
Dec-22	0.0	0.4	0.0	0.0	18	13

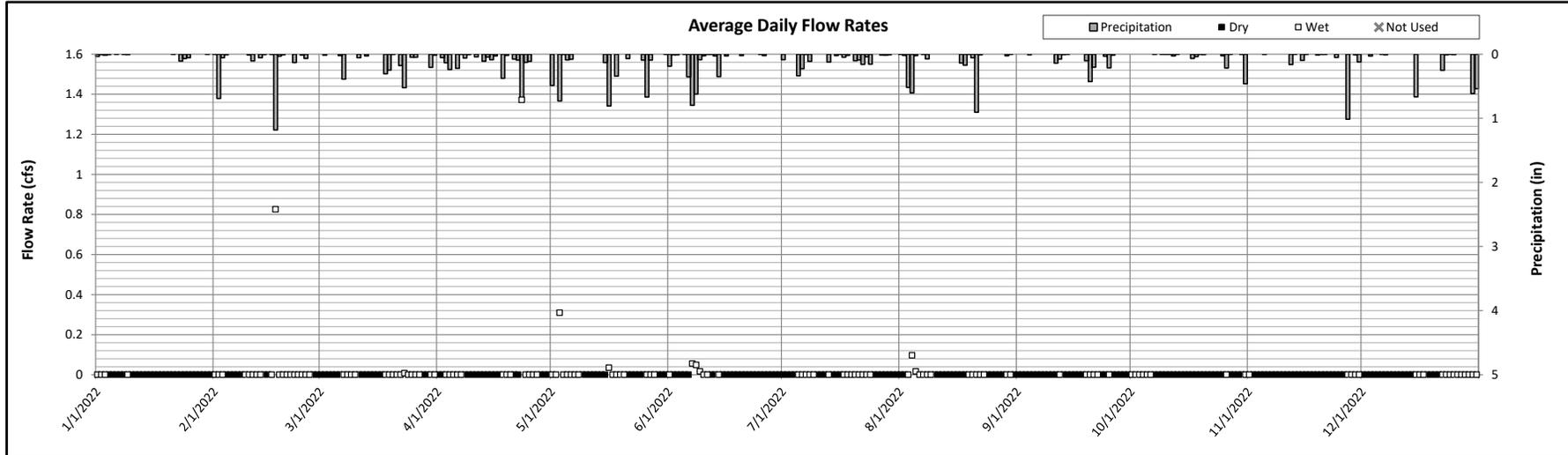
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-26
Meter Report

Meter: CPO
 Type: Milltronics Downlooker

Location: Pelham Road South of R.R.
 System Meter Type: Tunnel Diversion Chamber Level Sensor

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	27	4
Feb-22	0.0	0.5	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.0	0.9	0.0	0.0	17	13
May-22	0.0	0.2	0.0	0.0	15	16
Jun-22	0.0	0.1	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.1	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	18	13

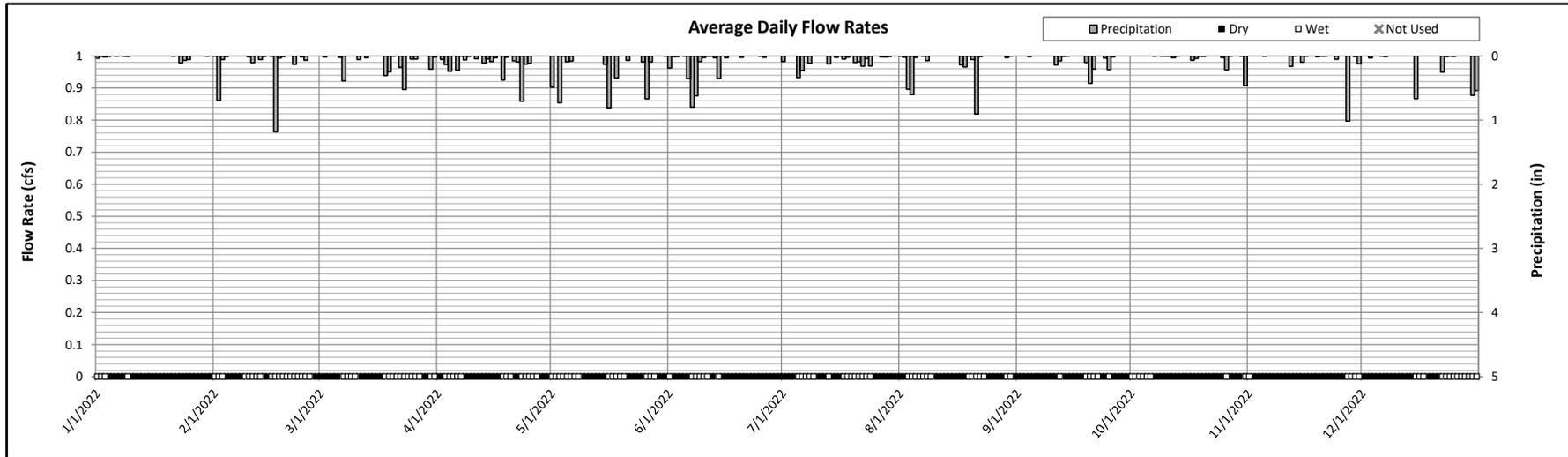
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-27
Meter Report

Meter: PDO
Type: Milltronics Downlooker

Location: Allen Road and Goddard
System Meter Type: Tunnel Diversion Chamber Level Sensor

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	27	4
Feb-22	0.0	0.0	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.0	0.0	0.0	0.0	17	13
May-22	0.0	0.0	0.0	0.0	15	16
Jun-22	0.0	0.0	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.0	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	18	13

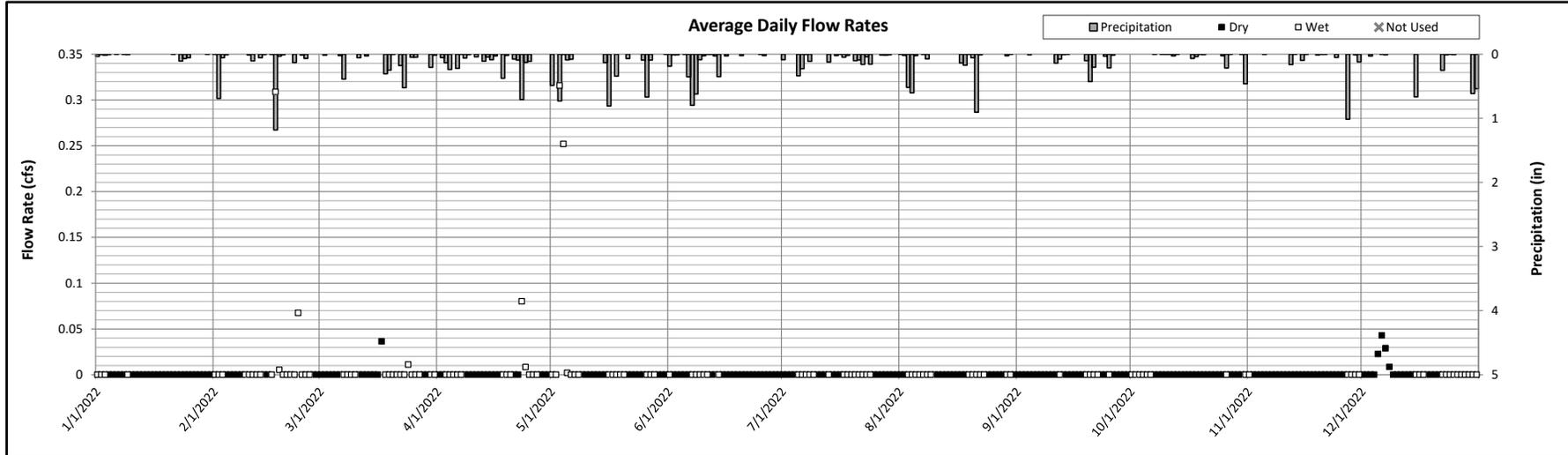
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-28
Meter Report

Meter: ER-2
Type: ADS Triton+

Location: Eureka Road and Inkster
System Meter Type: Tunnel System Flow Meter

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	27	4
Feb-22	0.0	0.2	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.0	0.1	0.0	0.0	17	13
May-22	0.0	0.4	0.0	0.0	15	16
Jun-22	0.0	0.0	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.0	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.1	0.0	0.1	18	13

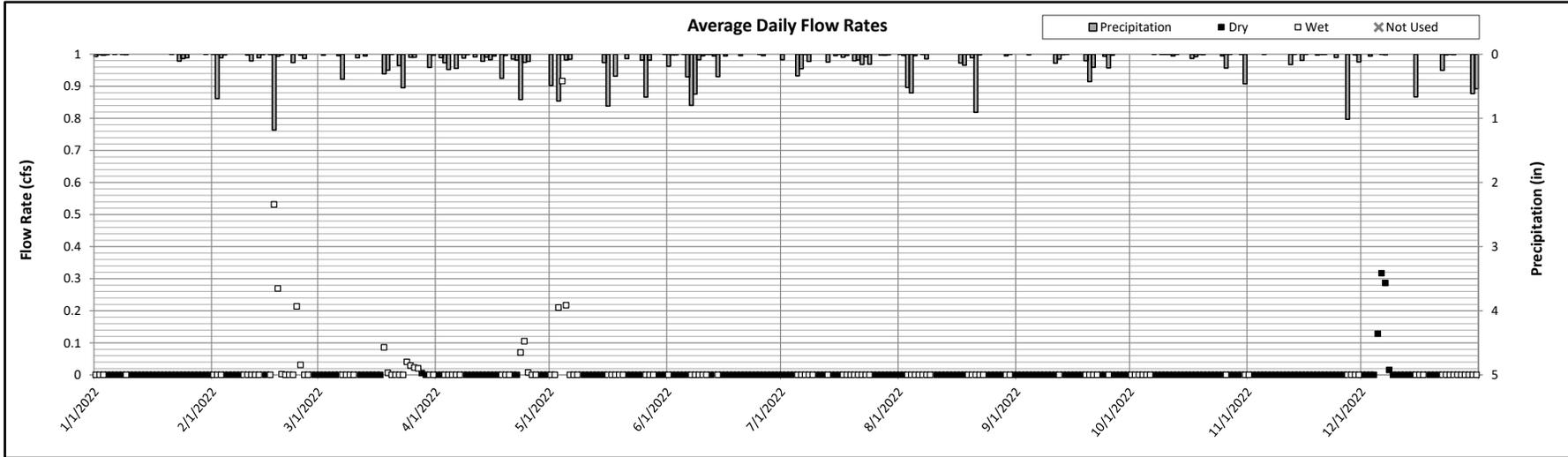
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-29
Meter Report

Meter: ER-1
Type: ADS Triton+

Location: Allen Road and Eureka Road
System Meter Type: Tunnel System Flow Meter

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	27	4
Feb-22	0.0	0.7	0.0	0.0	9	19
Mar-22	0.0	0.1	0.0	0.0	15	16
Apr-22	0.0	0.1	0.0	0.0	17	13
May-22	0.0	0.9	0.0	0.0	15	16
Jun-22	0.0	0.0	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.0	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.5	0.0	0.8	18	13

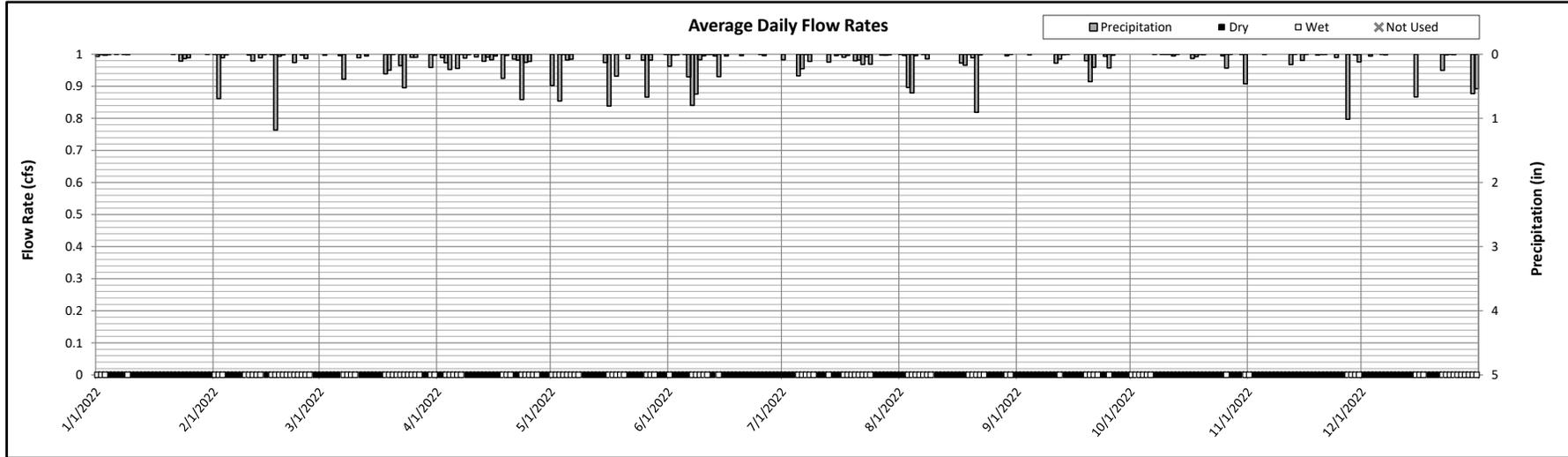
Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Figure C-30
Meter Report

Meter: PM-1
 Type: Milltronics Downlooker

Location: Pennsylvania Ave. at Fordline
 System Meter Type: Tunnel Diversion Chamber Level Sensor

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	27	4
Feb-22	0.0	0.0	0.0	0.0	9	19
Mar-22	0.0	0.0	0.0	0.0	15	16
Apr-22	0.0	0.0	0.0	0.0	17	13
May-22	0.0	0.0	0.0	0.0	15	16
Jun-22	0.0	0.0	0.0	0.0	23	7
Jul-22	0.0	0.0	0.0	0.0	17	14
Aug-22	0.0	0.0	0.0	0.0	17	14
Sep-22	0.0	0.0	0.0	0.0	24	6
Oct-22	0.0	0.0	0.0	0.0	23	8
Nov-22	0.0	0.0	0.0	0.0	25	5
Dec-22	0.0	0.0	0.0	0.0	18	13

Statistics for Major Wet Weather Events							
Event No.	Rainfall (in)	Start Date	End Date	Flow Rate		Depth	
				Max. Hour (cfs)	Date/Time	Max. (ft)	Date/Time
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Appendix D

Major Storm Event Wet Weather Summary Figures

No Major Storm Events

Appendix E

Sediment at Meter SW

Methodology for Estimating Sediment Depth at Meter SW using Flow Meter Velocity Paths

Meter SW has four levels of crossed path velocity sensors, for a total of eight velocity sensors. As the sediment depth at Meter SW increases, the lower velocity paths become buried in sediment or blinded by sediment suspended in the flow, and the sensors record zero velocity. The estimated sediment depth at Meter SW is based on which velocity sensors are recording zero velocity. Table E-1 lists the estimated sediment depths at Meter SW based on the sensors recording zero velocity.

When all submerged velocity sensors are active, the estimated sediment depth is 1.33 feet. This depth is based on the average sludge depth from previous sludge profiles measurements and is estimated to be a minimum sludge depth at this location. If velocity paths are submerged but recording a value of zero for velocity, it is assumed that the velocity path is buried in sediment and the path heights are used to estimate sediment depth. For example:

- When one of the lowest velocity path sensors (velocity paths 1 or 2) are submerged and records zero velocity, it is estimated that the sludge depth is at the lowest velocity path height of 1.83 feet.
- When both lowest velocity path sensors (velocity paths 1 or 2) are submerged and records zero velocity, it is estimated that the sludge depth is halfway between lowest velocity path height (1.83 feet) and second lowest velocity path height (2.50 feet).

Sediment depths are estimated for each 5-minute meter recording interval. Typically, the increased flow rates and velocities during a storm event will reduce the sludge depth at Meter SW, uncovering the buried velocity paths, which results in a lower estimated sludge depth and higher flow rate.

On September 18, 2019, Meter SW was reprogrammed to account for 16-inches of sediment. There is a long-term record of sediment profiles at this location which support an assumed stable depth of sediment of 16-inches. This programming change greatly improved the real-time flow rate readings for Meter SW. This is important because Meter SW is used to control a gate which throttles the SWRDDD flow rate to its contract capacity of 20.5 MGD.

At the end of each calendar month, the flow rate for Meter SW is recalculated using the estimated sediment depths. The recalculated flow rate is the best estimate of Meter SW flow rates.

Table E-1
Estimated Sediment Depths at Meter SW Based on Velocity Sensor Data

Velocity Path Height (ft)	Velocity Sensor	Sensors Recording Zero Velocity								
1.83	1	-	1 or 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2
	2									
2.50	3	-	-	-	3 or 4	3 & 4	3 & 4	3 & 4	3 & 4	3 & 4
	4									
3.17	5	-	-	-	-	-	5 or 6	5 & 6	5 & 6	5 & 6
	6									
5.25	7	-	-	-	-	-	-	-	7 or 8	7 & 8
	8									
Estimated Sediment Depth (ft)		1.33	1.83	2.17	2.50	2.84	3.17	4.21	5.25	5.88

Sediment Profile Measurements

Sediment profiles at the Meter SW location have been taken since 2013. These profiles measure the sediment depth every 6 inches across the pipe cross section. Table E-2 lists the sediment profile measurements. The equivalent sediment level from invert is also listed for each measurement. This value represents the depth of sediment from the pipe invert if the sediment was perfectly flat (horizontal). Figure E-1 shows the pipe cross section at Meter SW with the sediment profiles from 2013 to date.

The variability in the sediment profile measurements highlight the dynamic nature of sediment accretion/reduction at this location. The historical average sediment depth at Meter SW is about 16-inches.

Since Veolia took over operations of the Downriver Wastewater Treatment Facility (DWTF), the Interceptor Pump Station (IPS) wet well has been pumped down more frequently. The frequent wet well drawdowns are assumed to have helped mobilize and clear the sediment from this location.

**Table E-2
Meter SW Sediment Profile Measurements**

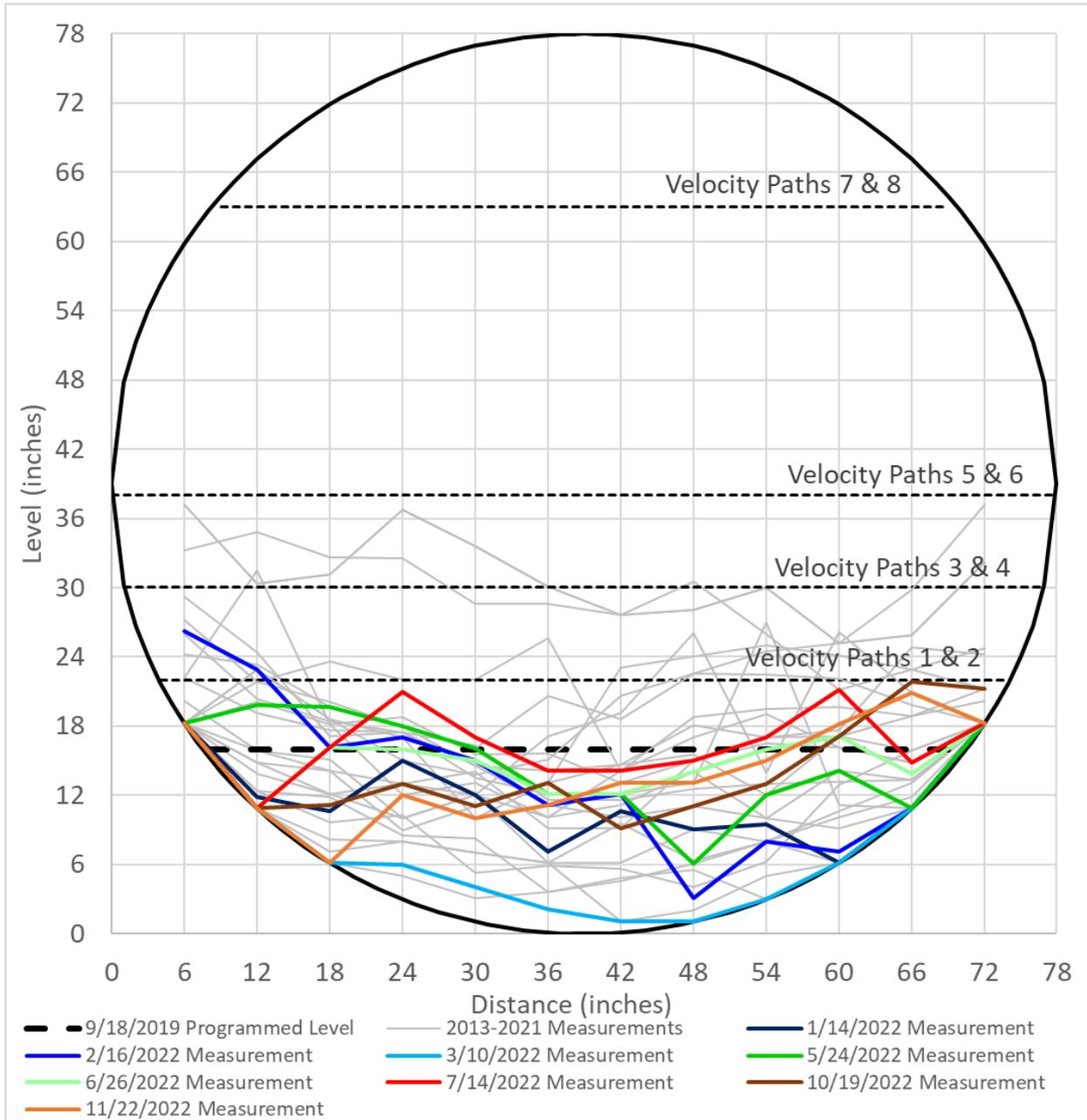
Date	Equivalent Sediment Level from Invert		Distance from Pipe Wall (inches)											
	(inches)	(feet)	6	12	18	24	30	36	42	48	54	60	66	72
			Sediment Level from Invert (inches)											
12/19/2013	21.3	1.8	27.2	21.9	23.6	22.0	22.1	25.6	14.1	18.8	19.5	19.6	18.9	21.2
5/9/2014	30.6	2.5	37.2	30.4	31.1	36.8	33.6	30.1	27.6	28.1	30.0	25.1	25.9	32.2
7/25/2014	30.6	2.5	37.2	30.4	31.1	36.8	33.6	30.1	27.6	28.1	30.0	25.1	25.9	32.2
9/24/2014	17.8	1.5	22.2	31.5	18.1	18.8	15.6	15.6	13.1	15.1	16.5	16.1	14.9	18.2
2/27/2015	28.6	2.4	33.2	34.9	32.6	32.5	28.6	28.6	27.6	30.6	26.0	21.1	22.9	24.7
5/27/2015	15.8	1.3	22.2	19.1	17.6	17.5	13.6	12.1	12.1	13.1	27.0	11.1	10.9	18.2
8/26/2015	17.0	1.4	24.2	23.4	19.6	18.0	14.6	14.1	14.6	15.6	12.0	17.1	15.9	18.2
11/20/2015	15.6	1.3	26.0	20.4	18.4	17.5	16.3	11.6	11.6	12.6	13.0	13.1	13.4	18.2
11/18/2016	10.7	0.9	18.2	14.9	14.1	13.0	12.1	6.1	9.6	6.3	8.0	10.6	13.1	18.2
12/21/2016	14.7	1.2	29.2	24.4	17.1	17.5	14.6	11.1	10.1	11.1	10.0	9.1	10.9	18.2
5/24/2017	14.0	1.2	18.2	13.9	12.1	10.0	12.1	10.1	14.1	17.1	19.0	16.1	14.9	18.2
8/23/2017	17.5	1.5	18.2	15.9	15.1	10.0	12.1	17.1	19.1	26.1	14.0	26.1	20.9	18.2
2/13/2018	13.7	1.1	18.2	20.1	18.1	12.0	13.1	10.1	11.1	14.1	10.0	14.1	13.4	18.2
2/28/2020	6.6	0.6	18.2	12.4	11.9	8.5	8.3	3.6	4.9	5.6	3.0	6.1	10.9	18.2
6/12/2020	17.9	1.5	18.2	22.9	18.6	17.0	10.1	13.1	14.6	18.1	17.0	17.6	24.9	24.2
9/21/2020	8.3	0.7	18.2	12.4	9.6	10.3	5.3	5.9	5.6	4.1	6.3	12.9	15.9	18.2
12/21/2020	18.5	1.5	20.2	15.9	14.1	9.0	11.1	13.1	23.1	24.1	25.0	24.1	22.9	21.2
2/12/2021	19.1	1.6	30.2	23.4	18.1	15.8	16.1	20.6	21.6	20.6	19.0	15.1	10.9	18.2
4/27/2021	22.8	1.9	18.2	21.9	20.1	18.0	16.1	20.6	18.6	22.6	24.5	25.1	29.9	37.2
5/21/2021	5.8	0.5	18.2	10.9	6.1	5.0	3.1	3.6	4.6	6.1	8.0	10.1	11.9	18.2
6/24/2021	7.2	0.6	18.2	10.9	7.1	8.0	7.1	6.1	6.1	9.1	8.0	6.1	10.9	18.2
8/5/2021	14.3	1.2	18.2	14.9	12.1	13.0	14.1	9.1	9.1	15.1	17.0	17.1	18.9	20.2
9/30/2021	5.2	0.4	18.2	10.9	8.1	8.0	7.1	6.1	1.1	2.1	5.0	6.1	10.9	18.2
1/14/2022	10.1	0.8	18.2	11.9	10.6	15.0	12.1	7.1	10.6	9.1	9.5	6.1	10.9	18.2
2/16/2022	13.2	1.1	26.2	22.9	16.1	17.0	15.1	11.1	12.1	3.1	8.0	7.1	10.9	18.2
3/10/2022	2.8	0.2	18.2	10.9	6.1	6.0	4.1	2.1	1.1	1.1	3.0	6.1	10.9	18.2
5/24/2022	14.1	1.2	18.2	19.9	19.6	18.0	16.1	12.1	12.1	6.1	12.0	14.1	10.9	18.2
6/23/2022	14.4	1.2	18.2	10.9	16.1	16.0	15.1	12.1	12.1	14.1	16.0	17.1	13.9	18.2
7/14/2022	16.1	1.3	18.2	10.9	16.1	21.0	17.1	14.1	14.1	15.1	17.0	21.1	14.9	18.2
10/19/2022	13.5	1.1	18.2	10.9	11.1	13.0	11.1	13.1	9.1	11.1	13.0	17.1	21.9	21.2
11/22/2022	13.1	1.1	18.2	10.9	6.1	12.0	10.1	11.1	13.1	13.1	15.0	18.1	20.9	18.2
Assumed	16.0	1.3	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0

Legend

Equivalent sediment level less than meter programmed level of 16 inches

Equivalent sediment level greater than meter programmed level of 16 inches

**Figure E-1
Sediment Profiles at Meter SW from 2013 through 2022**



Appendix F

Dye-Dilution Test Adjustment Factors

**Table F-1
Dye Dilution Test Summary**

Meter	Date	Adjustment Factor	Period Adjustment Factor
DMA-1	8/30/2018	0.85	0.85
DMA-2	9/24/2014	0.86	0.98
	8/1/2018	1.09	
EC-6	2/18/2014	0.70	0.75
	11/18/2021	0.79	
P-1	9/16/2013	0.99	0.98
	8/7/2018	0.96	
P-2	9/18/2017	0.89	0.83
	7/20/2022	0.76	
PA-1	11/6/2013	0.93	0.93
PA-2	9/18/2017	0.94	0.98
	1/24/2020	1.02	
PA-3	1/29/2020	0.96	0.85
	7/6/2022	0.72	
PA-4	4/4/2018	0.90	0.93
	7/20/2022	0.96	
PB-1	1/23/2020	1.14	1.14
PC-1	9/25/2014	0.93	0.95
	8/9/2018	0.93	
	9/27/2022	1.02	
PD-1	8/18/2015	0.76	0.76
	7/31/2018	0.76	
PD-2	1/30/2020	0.99	0.98
	7/15/2022	0.97	
RD-1	4/6/2018	1.02	1.02
RR-1	2/19/2014	0.97	1.06
	1/28/2020	1.16	
	7/15/2022	1.07	
RV-1	12/11/2019	1.00	0.98
	8/17/2022	0.95	
SW	11/12/2013	1.00 (with sediment accounted for)	1.00
	1/27/2020	1.00 (with sediment accounted for)	
	12/20/2022	1.05 (with sediment accounted for)	
TB-1	11/10/2014	1.05	0.99
	1/28/2020	0.97	
	12/19/2022	0.93	