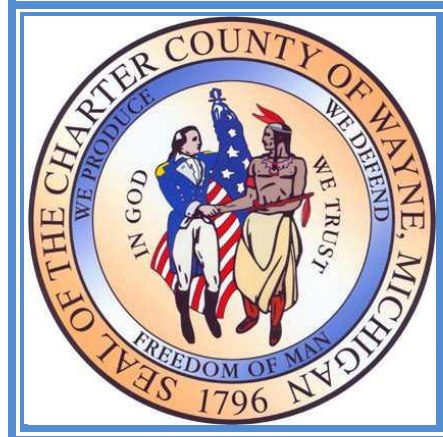


Wayne County Downriver Sewage Disposal System

Annual System Monitoring Report for 2017



Report to Wayne County and Communities

**Prepared By:
Applied Science, Inc.
300 River Place, Suite 5400
Detroit, MI 48207**

and

**Wayne County Department of Public Services
Engineering Services Group**

May 4, 2018

Table of Contents

<u>Section</u>	<u>Page</u>
1) Introduction	1
2) Findings from 2017 DSDS System Monitoring	3
3) Summary by Community	9
4) 2017 DSDS System Monitoring Plan Updates	15
5) 2017 Precipitation Data	17
6) Summary of 2017 DSDS Dry Weather Flows	19
7) Summary 2017 DSDS Wet Weather Flows	20

List of Tables

Table 1	Rainfall Depths at DTW for Major Storms during 2017 in the DSDS Service Area
Table 2	Peak Hourly Flow Rates for Controlled Flow Communities during 2017 Significant/Major Storm Events
Table 3	Peak 96 Hour Total Volumes for Non-Controlled Flow Communities during 2017 Major Storm Events
Table 4	Downriver Regional Storage and Transport System Usage during 2017 Significant Storm Events
Table 5	Average Annual Flow Rate and Volume by Community for 2017
Table 6	Average Monthly Flow Rates by Community for 2017 Percentage of Total Incoming Flow Rate by Community for 2017
Table 7	Average Monthly Flow Rates for Controlled Flow Communities for 2017
Table 8	Average Monthly Flow Rates for Non-Controlled Flow Communities for 2017
Table 9	Monthly Incremental Flow Rates Summarized by Community
Table 10	Dye-Dilution Test Summary
Table 11	Dry/Wet Weather Day Count by Month and Monthly Precipitation at DTW for 2017

List of Figures

- Figure 1 Incremental Meter Districts and Interceptor and Meter Locations and Rain Gages for 2017 System Monitoring Plan
- Figure 2 Percentage of Incoming Flow for 2017

Appendices

- Appendix A Additional Monthly Summary Tables, 2017 DSDS System Monitoring Plan
- Appendix B Data Summaries for 2017 DSDS Meters
- Appendix C 2017 Precipitation Data
- Appendix D Supplemental Information, DSDS Response to 2017 Major Storm Events

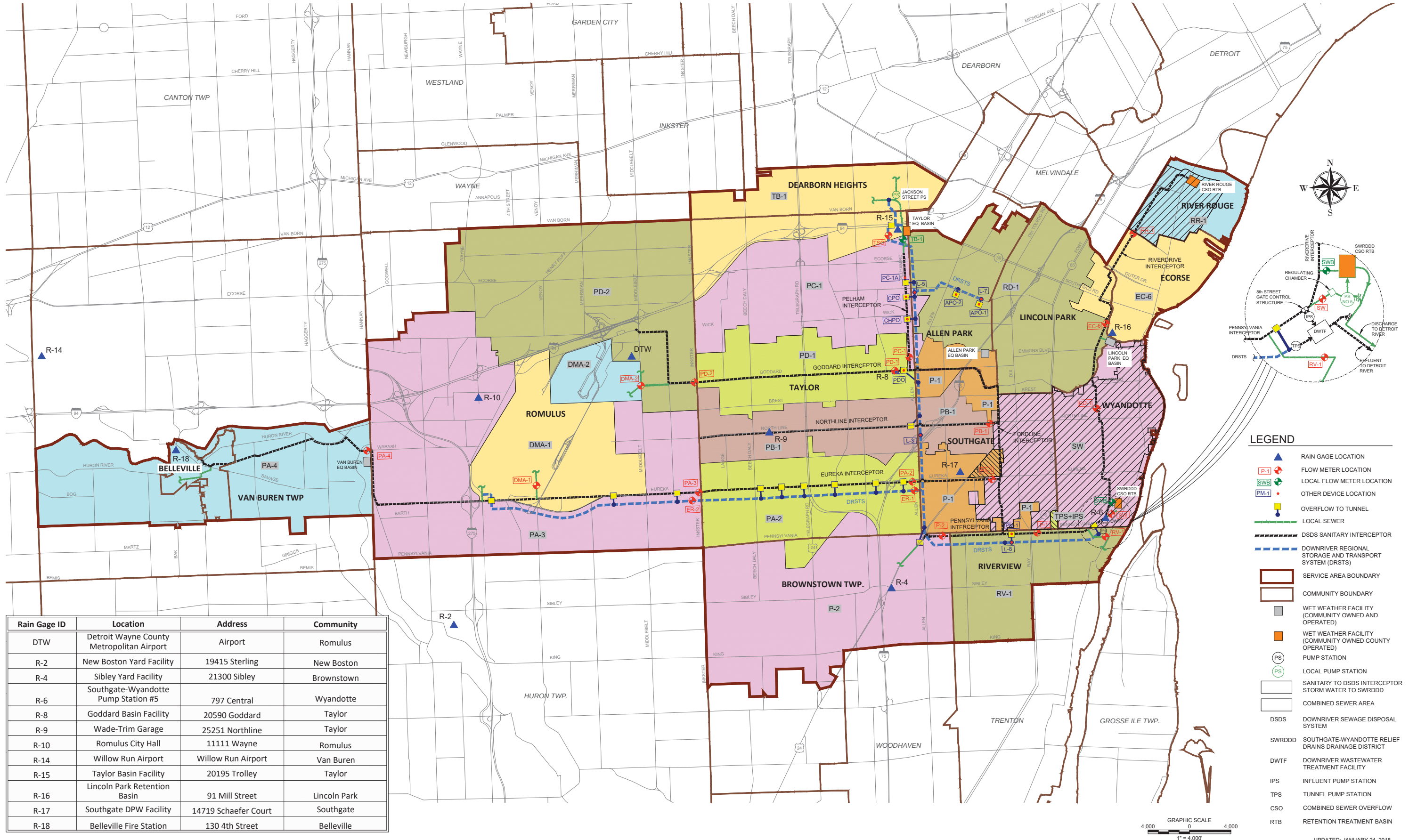
1. INTRODUCTION

This annual report provides a summary of the flow monitoring data for Wayne County's Downriver Sewage Disposal System (DSDS) for January through December 2017. This report supersedes and consolidates the information in the six (6) bi-monthly reports previously issued for 2017. It is intended to provide the best available estimate of flow rates for each meter district and community during the dry and wet weather conditions that occurred in 2017. For some meter districts and communities, the data have been revised from the bi-monthly reports.

Figure 1 is a map of the DSDS showing the flow meter and level sensor locations, incremental meter districts, the interceptors and Downriver Regional Storage and Transport System (DRSTS), and the location of rain gages that may be used to evaluate the wet weather monitoring data.

The 2017 DSDS flow monitoring data were reviewed, edited and filled-in to provide a complete data set. Missing or erroneous data have been estimated using fill-in techniques.

Jan 24, 2018 - 3:11pm
K:\Downriver\2015\1510\SDS System Monitoring Planning



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-14	Willow Run Airport	Willow Run Airport	Van Buren
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

DESIGN	D. WIEBE
DRAWING	D. HEROLD
CHECKED	D. WIEBE
APPROVED	K. RIDGWAY
ISSUE DATE	AUG 2017
DATE	
APRVD	
CHECKED	
DESCRIPTION	REVISIONS



DOWNRIVER SEWAGE DISPOSAL SYSTEM

PREPARED BY:
 **Applied Science, Inc.**
300 River Place, Suite 5400
Detroit, MI 48207
Phone: (313) 567-3990 Fax: (313) 567-3750

INCREMENTAL METER DISTRICTS & INTERCEPTOR & METER LOCATIONS & RAIN GAGES FOR 2017 SYSTEM MONITORING PLAN

SCALE:	1" = 4000'
JOB No.	ASI #1510
FILE No.	
FIGURE 1	

2. FINDINGS FROM 2017 DSDS SYSTEM MONITORING

The major findings from the DSDS 2017 system monitoring are presented below.

- a. Over the year, the flow meters and level sensors in the DSDS operated and provided useful data for 98.3% of the period.
- b. The total precipitation at the Detroit Metropolitan Wayne County Airport (DTW) for the year was 35.46 inches, which is 1.99 inches above normal. There were ten (10) significant storms in 2017. Significant storm events are defined as those with at least 0.5 inches of rainfall occurring on a single day with an event total of at least 1.0 inch of rainfall. Significant storm events are separated by at least 2 consecutive days without precipitation over 0.1 inches. This storm event definition is based on the arithmetic mean of the rainfall recorded by all rain gages used in the analysis for that storm. Of the significant storms, three (3) of the largest were also defined as major storms. 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). The average rainfall depths at DTW for the major storms are listed in Table 1.
- c. The controlled flow communities are tributary to the Riverdrive Interceptor and their peak flow rates into the interceptor are required to be regulated to maximum flow limits. The peak hourly flow rates for the controlled flow communities during significant/major storm events during 2017 are summarized in Table 2.
 - The Meter RR-1 district includes all of River Rouge. The flow rates estimated for the Meter RR-1 district for the significant storms during 2017 were below the maximum flow limit for all ten events. Flow from River Rouge is pumped into 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 Basin. This sometimes results in a slight exceedence of the maximum flow limit.
 - The MAFL for Lincoln Park was redistributed between Meter Districts EC-6 and RD-1. Lincoln Park's Applewood connection to the Riverdrive Interceptor in Meter District EC-6 has a Reg-U-Flo Vortex Valve installed which restricts the flow rate to about 3.00 cfs. Therefore, Lincoln Park's MAFL for Meter District EC-6 was increased from 1.90 cfs to 3.00 cfs. To balance Lincoln Park's total MAFL of 28.16 cfs, the MAFL for Meter District RD-1 was reduced from 26.26 cfs to 25.16 cfs.
 - The Meter EC-6 district includes all of the City of Ecorse and a section of Lincoln Park. The incremental flow rates estimated for the Meter EC-6 district for the significant

storms during 2017 were below the maximum flow limit for five of the ten events, slightly exceeded the maximum flow limit for three of the ten events and significantly exceeded the maximum flow limit for two of the ten events.

- The Meter RD-1 district includes most of Allen Park and most of Lincoln Park. The incremental flow rates estimated for the Meter RD-1 district for the significant storms during 2017 were below the maximum flow limit for two of the ten events, slightly exceeded the maximum flow limit for six of the ten events and significantly exceeded the maximum flow limit for two of the ten events.
 - The Meter SW district serves the Southgate-Wyandotte Relief Drains Drainage District (SWRDDD). The SWRDDD is a combined sewer area that includes part of Southgate and all of Wyandotte. Flow limit exceedences occurred primarily after the peak of the storm event during dewatering operations of the SWRDDD CSO retention treatment facility, which were coordinated with DWTF operations to minimize bypass operations at DWTF and discharges to Detroit River from SWRDDD.
- d. The non-controlled flow communities are tributary to both the Pennsylvania Interceptor system and the DRSTS and have allowable peak 96-hour volumes that were established for the 4.42 inch design storm. The estimated peak 96-hour total volumes for the 2017 major storm events are listed in Table 3. The City of Southgate (part) is estimated to have exceeded the allowable peak 96-hour total volumes during Significant Storm Events B and C. None of the other Downriver communities are estimated to have exceeded the allowable peak 96-hour total volumes during 2017. The DRSTS worked as intended for all of the storm events during 2017.
- e. In addition, the non-controlled flow communities have proposed maximum allowable average daily dry weather flow rate limits. Meter District P-1 in Southgate (part) and Allen Park and Meter District IPS+TPS in Southgate (part) were the only districts to exceed these limits during 2017. The portion of Meter District P-1 in Allen Park exceeded its proposed dry weather flow limit April, and the portion in Southgate (part) exceeded in April and May 2017. Meter District IPS+TPS exceeded in March, April and May 2017. The flow rate for Meter District IPS+TPS is estimated from the Meter District P-1 flow rate. Inclusive of all meter districts, no community exceeded the total proposed maximum allowable average daily dry weather flow rate limit for any month.
- f. A summary of relief structure discharges into the DRSTS during significant storm events for 2017 are listed in Table 4. At least one of the relief structures discharged into the DRSTS during nine of the ten significant storm events in 2017. The relief structure at Meter CHPO discharged most frequently.

- g. Table 5 lists the average annual flow rate and total annual flow volume for each community for year 2017. The total incoming flow rate to the DWTF is based on the interceptor system flow meters. The DWTF flow rate is based on the Interceptor Pump Station (IPS) and Tunnel Pump Station (TPS), and includes recycle flow rate.

Table 1
Downriver Sewage Disposal System
Rainfall Depths at DTW for Major Storms during 2017 in the DSDS Service Area

Major Storm Event	Significant Storm Event	Event Dates	Peak 24-hour Rainfall Depth (inches)	Total Rainfall Depth (inches)
A	1	2/7/2017	1.01	1.01
B	3	3/30-31/2017	1.91	1.91
C	5	5/4-5/2017	1.04	1.71

Table 2
Downriver Sewage Disposal System
Peak Hourly Flow Rates for Controlled Flow Communities
During 2017 Significant/Major Storm Events

Meter District =	RR-1	EC-6	RD-1	SW
Location =	River Rouge CSO Basin Outlet	Riverdrive Interceptor South of Southfield Road	Riverdrive Interceptor North of Northline Road	SWRDDD Connection
Incremental Flow Formula =	[RR-1]	[EC-6] - [RR-1r]	[RD-1] - [EC-6r]	[SW] + [SWB]
Communities Included in Incremental Flow =	River Rouge	Ecorse & Lincoln Park (part)	Lincoln Park (part) & Allen Park (part)	Southgate (part) & Wyandotte
Proposed Maximum Flow Limit ¹ =	11.26 cfs	12.20 cfs	42.36 cfs	31.73 cfs
Event 1 / Major Event A (2/7/2017)	10.30 cfs	13.86 cfs	43.94 cfs	29.43 cfs
Event 2 (2/28/2017 – 3/1/2017)	10.52 cfs	13.08 cfs	46.48 cfs	30.10 cfs
Event 3 / Major Event B (3/30-31/2017)	10.84 cfs	21.97 cfs	46.17 cfs	29.09 cfs
Event 4 (4/5-7/2017)	8.06 cfs	8.25 cfs	36.62 cfs	30.21 cfs
Event 5 / Major Event C (5/4-5/2017)	10.63 cfs	14.39 cfs	43.05 cfs	32.37 cfs
Event 6 (7/7/2017)	7.64 cfs	7.98 cfs	38.33 cfs	40.65 cfs
Event 7 (8/28-29/2017)	9.90 cfs	9.11 cfs	42.61 cfs	30.44 cfs
Event 8 (10/10-12/2017)	9.76 cfs	10.13 cfs	43.92 cfs	32.21 cfs
Event 9 (11/1-2/2017)	8.67 cfs	8.12 cfs	52.58 cfs	30.07 cfs
Event 10 (11/17-18/2017)	7.33 cfs	17.70 cfs	51.69 cfs	31.16 cfs

Notes:

1. The Maximum Wet Weather Flow Limits for Controlled Flow Communities are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits.
2. Exceedance of the proposed maximum flow limit occurred primarily after the peak of the storm event and is due to Wayne County dewatering operations at the SWRDDD facilities to minimize discharges to the Detroit River from the SWRDDD.

Legend:

XX.XX	Exceeds maximum flow limit by 0 to 20%
XX.XX	Exceeds maximum flow limit by > 20%

Table 3
Downriver Sewage Disposal System
Peak 96 Hour Total Volumes for Non-Controlled Flow Communities
During 2017 Major Storm Events

Community	Total Volume (MG)			
	4.42 inch Design Storm	Major Storm Event		
		Event A February 7, 2017 1.03 inches	Event B March 30-31, 2017 1.96 inches	Event C May 4-5, 2017 1.94 inches
Allen Park (part)	29.23	11.11	28.07	17.62
Belleville	4.86	3.25	4.41	3.99
Brownstown Twp.	20.90	7.98	10.87	10.17
Dearborn Heights	43.76	28.55	33.33	29.38
Riverview	28.30	12.73	19.51	19.63
Romulus	88.43	38.42	51.94	51.53
Southgate (part)	31.24	24.66	38.45	30.75
Taylor	164.45	58.48	76.34	69.01
Van Buren Twp.	7.04	4.66	6.32	5.71
Total	418.21	189.85	269.24	237.78

Legend:

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

Table 4
Downriver Sewage Disposal System
Downriver Regional Storage and Transport System Usage
during 2017 Significant Storm Events

Storm Event	Meter									
	TPS	TSO	CHPO	CPO	PDO	ER-2	ER-1	APO-2	APO-1	PM-1
Event 1 / Major Event A (2/7/2017)	✓	✓	✓	✓	×	✓	✓	✓	✓	×
Event 2 (2/28/2017 – 3/1/2017)	✓	×	✓	✓	×	✓	✓	✓	✓	×
Event 3 / Major Event B (3/30-31/2017)	✓	✓	✓	✓	×	✓	✓	✓	✓	×
Event 4 (4/5-7/2017)	✓	✓	✓	×	×	✓	✓	✓	✓	×
Event 5 / Major Event C (5/4-5/2017)	✓	✓	✓	✓	×	✓	✓	✓	✓	×
Event 6 (7/7/2017)	×	×	×	×	×	×	×	×	×	×
Event 7 (8/28-29/2017)	✓	✓	✓	✓	×	×	✓	×	×	×
Event 8 (10/10-12/2017)	✓	✓	✓	×	×	×	×	×	×	×
Event 9 (11/1-2/2017)	✓	×	✓	×	×	×	×	×	×	×
Event 10 (11/17-18/2017)	✓	✓	✓	✓	×	×	×	✓	✓	×
Number of Overflow Events	9/10	7/10	9/10	6/10	0/10	5/10	6/10	6/10	6/10	0/10

Legend:

✓	Discharge to DRSTS
×	No discharge to DRSTS

Table 5
Downriver Sewage Disposal System
Average Annual Flow Rate and Volume by Community for 2017

Community	Estimated Annual Average Flow Rate (cfs)	Estimated Annual Flow Volume	
		(MG)	(MCF)
Allen Park	5.66	1,335	178,406
Belleville	0.83	195	26,047
Brownstown Twp.	2.22	524	70,073
Dearborn Hts.	4.55	1,074	143,547
Ecorse	2.10	496	66,240
Lincoln Park	9.35	2,205	294,825
River Rouge	3.34	788	105,281
Riverview	2.33	550	73,589
Romulus	8.54	2,014	269,297
Southgate	9.91	2,337	312,360
Taylor	11.90	2,808	375,355
Van Buren Twp.	1.18	279	37,308
Wyandotte	11.72	2,765	369,647
Total Incoming Flow	73.63	17,370	2,321,975
DWTF Including Recycle (IPS + TPS)	80.28	18,939	2,531,783

Notes:

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

3. SUMMARY BY COMMUNITY

Table 6 presents the estimated average monthly flow rate for each community in the DSDS for each month in 2017. The average monthly flow rate includes all days – both dry and wet weather. Table 6 also shows the percentages for each community of the incoming flow rate to the DWTF; these percentages are also plotted on Figure 3.

The incoming flow rate to the DWTF is based on the interceptor system flow meters. Table 6 presents both the incoming flow rate and the average monthly influent pumping rate at the DWTF. The DWTF influent pumping rate includes recycle flow rates, whereas 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.

The average monthly flow rates are subtotaled for controlled flow communities and for non-controlled flow communities. Tables 7 and 8 provide the average monthly flow rates during 2017 for the controlled flow communities and non-controlled flow communities, respectively.

Table 9 shows the 2017 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 2010 residential population is given on Table 9 and it is used to estimate per-capita dry weather flow rates.

In addition, Table 9 shows the maximum dry weather flow limits for each community from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). For the controlled flow communities, maximum flow limits are specified in the existing service agreement and were adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The peak flow rates for these communities are required to be regulated to these maximum values.

For non-controlled communities, the existing service agreement does not contain dry weather flow limits for the non-controlled communities. The proposed maximum allowable average daily dry weather flow limits for the non-controlled flow communities shown in Table 9 are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). Values are shown for informational purposes only as agreement on the flow limits has not yet been reached and a new service agreement has not yet been executed.

Appendix A contains a set of tables that further support the results presented on Tables 6, 7, 8 and 9.

Table 6
Downriver Sewage Disposal System
Average Monthly Flow Rates by Community for 2017

Community	Flow Rate (cfs)												
	January	February	March	April	May	June	July	August	September	October	November	December	Annual Average
Allen Park	6.75	6.35	7.71	8.28	8.38	4.09	4.53	4.52	3.54	3.52	6.88	3.40	5.66
Belleville	1.00	1.05	1.12	1.31	1.07	0.71	0.65	0.57	0.55	0.58	0.68	0.66	0.83
Brownstown Twp.	2.39	2.29	2.53	2.52	2.44	1.75	1.96	2.05	1.98	2.02	2.54	2.18	2.22
Dearborn Hts.	6.02	5.79	5.98	8.64	6.77	3.12	2.82	2.69	2.38	2.67	4.67	3.21	4.55
Ecorse	2.30	2.09	2.44	2.70	2.91	2.03	2.13	1.65	1.48	1.58	2.17	1.73	2.10
Lincoln Park	11.34	10.22	11.53	13.46	13.73	7.17	8.12	7.97	6.11	5.98	11.09	5.58	9.35
River Rouge	3.98	4.26	4.00	4.54	4.98	3.32	3.12	3.00	2.10	1.88	3.06	1.90	3.34
Riverview	2.96	2.57	3.29	2.81	2.90	1.64	1.92	1.81	1.53	1.72	2.94	1.92	2.33
Romulus	10.06	10.78	11.45	15.66	11.16	6.07	5.57	5.17	5.12	5.12	9.30	7.30	8.54
Southgate	12.41	10.57	11.69	12.96	13.43	8.24	9.56	8.65	6.40	7.20	10.54	7.23	9.91
Taylor	15.43	14.21	15.31	15.87	15.67	9.19	8.83	8.50	7.98	8.46	13.49	10.07	11.90
Van Buren Twp.	1.43	1.50	1.60	1.88	1.53	1.02	0.93	0.82	0.79	0.82	0.97	0.94	1.18
Wyandotte	14.96	11.85	13.18	14.34	16.20	10.16	12.62	11.13	7.41	8.45	12.20	8.09	11.72
Subtotal Controlled Flow Communities	46.61	40.14	44.25	49.77	53.71	31.83	37.01	33.95	24.25	25.54	40.89	24.51	37.70
Subtotal Non-Controlled Flow Communities	44.40	43.38	47.59	55.22	47.48	26.68	25.73	24.57	23.12	24.45	39.64	29.73	35.94
Total Incoming Flow Rate	91.01	83.52	91.84	104.99	101.19	58.51	62.75	58.52	47.37	49.98	80.53	54.23	73.63
DWTF Including Recycle (IPS + TPS)	96.60	89.17	100.77	113.54	109.57	64.87	67.80	64.56	50.96	57.54	89.61	59.21	80.28
Total Precipitation DTW (inches)	2.83	1.90	4.26	3.55	4.39	2.02	2.44	3.91	0.91	2.84	4.93	1.48	35.46

Percentage of Total Incoming Flow Rate by Community for 2017

Community	January	February	March	April	May	June	July	August	September	October	November	December	Annual Average
Allen Park	7.4%	7.6%	8.4%	7.9%	8.3%	7.0%	7.2%	7.7%	7.5%	7.0%	8.5%	6.3%	7.6%
Belleville	1.1%	1.3%	1.2%	1.2%	1.1%	1.2%	1.0%	1.0%	1.2%	1.2%	0.8%	1.2%	1.1%
Brownstown Twp.	2.6%	2.7%	2.8%	2.4%	2.4%	3.0%	3.1%	3.5%	4.2%	4.0%	3.2%	4.0%	3.2%
Dearborn Hts.	6.6%	6.9%	6.5%	8.2%	6.7%	5.3%	4.5%	4.6%	5.0%	5.3%	5.8%	5.9%	5.9%
Ecorse	2.5%	2.5%	2.7%	2.6%	2.9%	3.5%	3.4%	2.8%	3.1%	3.2%	2.7%	3.2%	2.9%
Lincoln Park	12.5%	12.2%	12.6%	12.8%	13.6%	12.2%	12.9%	13.6%	12.9%	12.0%	13.8%	10.3%	12.6%
River Rouge	4.4%	5.1%	4.4%	4.3%	4.9%	5.7%	5.0%	5.1%	4.4%	3.8%	3.8%	3.5%	4.5%
Riverview	3.2%	3.1%	3.6%	2.7%	2.9%	2.8%	3.1%	3.1%	3.2%	3.4%	3.7%	3.5%	3.2%
Romulus	11.1%	12.9%	12.5%	14.9%	11.0%	10.4%	8.9%	8.8%	10.8%	10.2%	11.6%	13.5%	11.4%
Southgate	13.6%	12.7%	12.7%	12.3%	13.3%	14.1%	15.2%	14.8%	13.5%	14.4%	13.1%	13.3%	13.6%
Taylor	17.0%	17.0%	16.7%	15.1%	15.5%	15.7%	14.1%	14.5%	16.8%	16.9%	16.8%	18.6%	16.2%
Van Buren Twp.	1.6%	1.8%	1.7%	1.8%	1.5%	1.7%	1.5%	1.4%	1.7%	1.6%	1.2%	1.7%	1.6%
Wyandotte	16.4%	14.2%	14.4%	13.7%	16.0%	17.4%	20.1%	19.0%	15.6%	16.9%	15.2%	14.9%	16.2%
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
Downriver Sewage Disposal System
Percentage of Incoming Flow for 2017

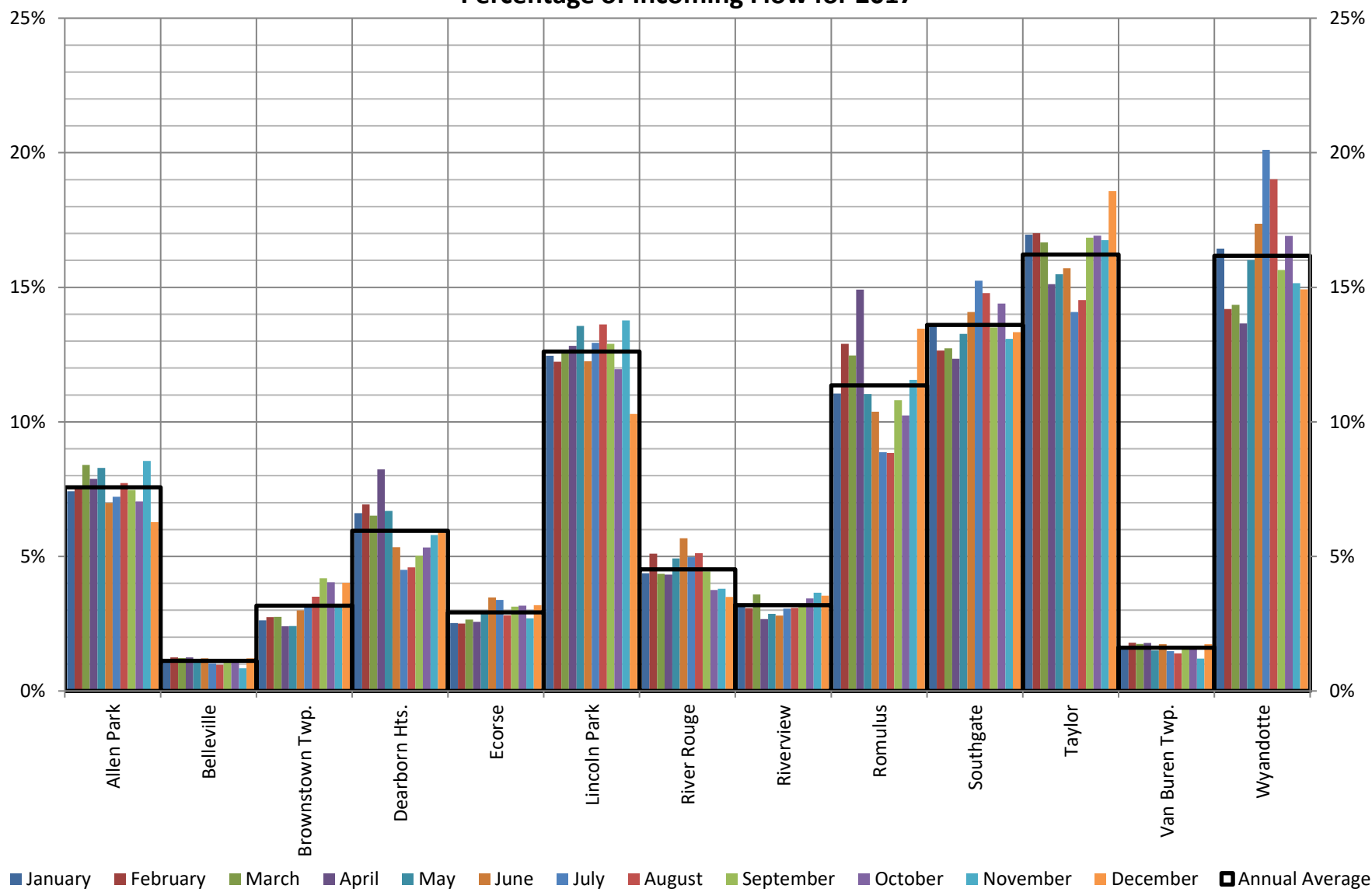


Table 7
Downriver Sewage Disposal System
Average Monthly Flow Rates for Controlled Flow Communities for 2017

Community	Flow Rate (cfs)												
	January	February	March	April	May	June	July	August	September	October	November	December	Annual Average
Allen Park (part)	5.52	4.97	5.59	6.56	6.65	3.36	3.85	3.87	2.92	2.83	5.41	2.59	4.50
Ecorse	2.30	2.09	2.44	2.70	2.91	2.03	2.13	1.65	1.48	1.58	2.17	1.73	2.10
Lincoln Park	11.34	10.22	11.53	13.46	13.73	7.17	8.12	7.97	6.11	5.98	11.09	5.58	9.35
River Rouge	3.98	4.26	4.00	4.54	4.98	3.32	3.12	3.00	2.10	1.88	3.06	1.90	3.34
Southgate - Wyandotte RDDD	23.48	18.61	20.69	22.51	25.43	15.95	19.81	17.47	11.63	13.27	19.16	12.70	18.40
Total	46.61	40.14	44.25	49.77	53.71	31.83	37.01	33.95	24.25	25.54	40.89	24.51	37.70
Total Precipitation DTW (inches)	2.83	1.90	4.26	3.55	4.39	2.02	2.44	3.91	0.91	2.84	4.93	1.48	35.46

Table 8
Downriver Sewage Disposal System
Average Monthly Flow Rates for Non-Controlled Flow Communities for 2017

Community	Flow Rate (cfs)												
	January	February	March	April	May	June	July	August	September	October	November	December	Annual Average
Allen Park (part)	1.24	1.38	2.13	1.72	1.73	0.72	0.68	0.65	0.62	0.69	1.47	0.81	1.15
Belleville	1.00	1.05	1.12	1.31	1.07	0.71	0.65	0.57	0.55	0.58	0.68	0.66	0.83
Brownstown Twp.	2.39	2.29	2.53	2.52	2.44	1.75	1.96	2.05	1.98	2.02	2.54	2.18	2.22
Dearborn Hts.	6.02	5.79	5.98	8.64	6.77	3.12	2.82	2.69	2.38	2.67	4.67	3.21	4.55
Riverview	2.96	2.57	3.29	2.81	2.90	1.64	1.92	1.81	1.53	1.72	2.94	1.92	2.33
Romulus	10.06	10.78	11.45	15.66	11.16	6.07	5.57	5.17	5.12	5.12	9.30	7.30	8.54
Southgate (part)	3.88	3.81	4.18	4.79	4.19	2.45	2.37	2.31	2.17	2.38	3.58	2.62	3.22
Taylor	15.43	14.21	15.31	15.87	15.67	9.19	8.83	8.50	7.98	8.46	13.49	10.07	11.90
Van Buren Twp.	1.43	1.50	1.60	1.88	1.53	1.02	0.93	0.82	0.79	0.82	0.97	0.94	1.18
Total	44.40	43.38	47.59	55.22	47.48	26.68	25.73	24.57	23.12	24.45	39.64	29.73	35.94
Total Precipitation DTW (inches)	2.83	1.90	4.26	3.55	4.39	2.02	2.44	3.91	0.91	2.84	4.93	1.48	35.46

Table 9
Downriver Sewage Disposal System
Monthly Incremental Flow Rates Summarized by Community

Community	Sewage Flow Meter Math	Meter District	Year 2010 Incremental Population	January 2017			February 2017			March 2017			April 2017			May 2017			June 2017			Proposed Maximum Allowable Dry Weather Flow Limits for Controlled Flow Communities ¹ (cfs)	Proposed Maximum Allowable Dry Weather Flow Limits for Non-Controlled Flow Communities ¹ (cfs)
				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)		
Allen Park	3.8%([PC-1]+[CPO]+[CHPO]-[TB-1]) + 23.9%([P-1]+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1]) + 34.6%([RD-1]-[EC-6]) + ([APO-1] + [APO-2])	PC-1	1,019	0.27	0.24	151	0.25	0.21	132	0.27	0.21	134	0.27	0.20	129	0.27	0.19	120	0.14	0.14	86	-	0.40
		P-1	3,332	0.96	0.88	170	0.95	0.84	162	1.03	0.84	164	1.22	0.94	183	1.04	0.80	155	0.58	0.58	112	-	1.47
		RD-1	18,179	5.52	4.07	145	4.97	3.54	126	5.59	3.87	138	6.56	3.43	122	6.65	3.46	123	3.36	2.87	102	17.20	-
		APO-1 + APO-2	0	0.00	0.00	-	0.19	0.00	-	0.83	0.00	-	0.23	0.00	-	0.42	0.00	-	0.00	0.00	-	-	-
		Total	22,531	6.75	5.18	149	6.35	4.58	131	7.71	4.93	141	8.28	4.58	131	8.38	4.44	127	4.09	3.59	103	-	1.87
Belleville	41.1%[PA-4]	PA-4	3,993	1.00	0.97	157	1.05	0.99	160	1.12	1.01	164	1.31	1.14	184	1.07	0.96	156	0.71	0.71	115	-	1.22
Brownstown Twp.	97.5%[P-2] + 1.8%([PA-2]+[ER-1]-[PA-3]-[ER-2])	P-2	10,397	2.34	2.19	136	2.25	2.10	131	2.48	2.15	134	2.48	2.09	130	2.40	2.08	130	1.73	1.73	107	-	3.65
		PA-2	248	0.05	0.04	114	0.04	0.04	97	0.05	0.04	96	0.05	0.03	82	0.05	0.03	89	0.02	0.02	64	-	0.06
		Total	10,645	2.39	2.23	136	2.29	2.14	130	2.53	2.19	133	2.52	2.12	129	2.44	2.12	129	1.75	1.75	106	-	3.71
Dearborn Hts.	78.2%([TB-1]+[TSO])	TB-1	19,152	6.02	5.14	173	5.79	4.68	158	5.98	4.62	156	8.64	5.79	195	6.77	4.54	153	3.12	3.05	103	-	7.66
Ecorse	71.5%([EC-6]-[RR-1])	EC-6	9,515	2.30	2.12	144	2.09	1.87	127	2.44	1.89	128	2.70	2.45	166	2.91	2.51	171	2.03	1.99	135	9.20	-
Lincoln Park	28.5%([EC-6]-[RR-1]) + 65.4%([RD-1]-[EC-6])	EC-6	3,795	0.92	0.84	144	0.83	0.75	127	0.97	0.75	128	1.08	0.98	166	1.16	1.00	171	0.81	0.80	135	3.00	-
		RD-1	34,347	10.42	7.68	145	9.39	6.68	126	10.56	7.31	138	12.39	6.49	122	12.57	6.53	123	6.36	5.43	102	25.16	-
		Total	38,142	11.34	8.53	144	10.22	7.43	126	11.53	8.07	137	13.46	7.47	127	13.73	7.53	128	7.17	6.22	105	28.16	-
River Rouge	[RR-1]	RR-1	7,903	3.98	3.48	284	4.26	3.75	306	4.00	3.16	258	4.54	3.22	263	4.98	3.52	288	3.32	3.01	246	11.26	-
Riverview	[RV-1]	RV-1	12,486	2.96	2.31	119	2.57	2.07	107	3.29	2.20	114	2.81	2.00	104	2.90	2.02	105	1.64	1.55	80	-	2.66
Romulus	[DMA-1] + ([PA-3]+[ER-2]-[PA-4]-[DMA-1] + [DMA-2] + ([PD-2] - [DMA-2])	DMA-1	0	0.67	0.67	-	0.68	0.68	-	0.77	0.77	-	0.80	0.79	-	0.82	0.81	-	0.84	0.83	-	-	5.96
		PA-3	11,371	4.50	4.25	242	4.77	4.31	245	5.18	4.48	255	6.15	5.00	284	4.99	4.25	242	3.12	3.14	178	-	
		DMA-2	0	1.43	1.33	-	1.78	1.82	-	1.64	1.69	-	3.68	3.47	-	1.71	1.41	-	0.15	0.15	-	-	8.42
		PD-2	9,532	3.46	3.23	219	3.55	3.15	213	3.87	3.21	218	5.03	4.07	276	3.64	2.95	200	1.96	1.94	131	-	
		Total	20,904	10.06	9.47	293	10.78	9.96	308	11.45	10.16	314	15.66	13.33	412	11.16	9.43	291	6.07	6.05	187	-	14.38
Southgate	76.1%([P-1]+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1]) + 40%[PB-1] + 36.3%([SW]+[SWB]) + 1.4%([P-1]+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1])	P-1	10,637	3.08	2.80	170	3.03	2.67	162	3.29	2.70	164	3.89	3.02	183	3.31	2.55	155	1.86	1.84	112	-	3.42
		PB-1	4,459	0.74	0.67	97	0.73	0.64	93	0.83	0.69	100	0.83	0.66	96	0.82	0.65	95	0.56	0.54	79	-	1.33
		SW	14,752	8.53	6.97	305	6.75	5.54	243	7.51	6.89	302	8.17	6.07	266	9.23	6.80	298	5.79	4.96	217	11.52	-
		TPS+IPS	199	0.06	0.05	170	0.06	0.05	162	0.06	0.05	164	0.07	0.06	183	0.06	0.05	155	0.03	0.03	112	-	0.06
		Total	30,047	12.41	10.49	226	10.57	8.91	192	11.69	10.33	222	12.96	9.81	211	13.43	10.05	216	8.24	7.38	159	-	4.81
Taylor	2.5%[P-2] + 98.2%([PA-2]+[ER-1]-[PA-3]-[ER-2]) + 60%[PB-1] + 21.8%([TB-1]+[TSO]) + 96.2%([PC-1]+[CPO]+[CHPO]-[TB-1]) + ([PD-1]-[PD-2])	P-2	262	0.06	0.06	136	0.06	0.05	131	0.06	0.05	134	0.06	0.05	130	0.06	0.05	130	0.04	0.04	107	-	0.08
		PA-2	13,270	2.59	2.34	114	2.29	1.98	97	2.56	1.97	96	2.57	1.69	82	2.46	1.83	89	1.31	1.31	64	-	2.24
		PB-1	6,462	1.12	1.01	101	1.09	0.97	97	1.24	1.03	103	1.24	0.99	100	1.23	0.98	98	0.83	0.81	81	-	2.01
		TB-1	5,339	1.68	1.43	173	1.61	1.31	158	1.67	1.29	156	2.41	1.61	195	1.89	1.27	153	0.87	0.85	103	-	2.14
		PC-1	25,700	6.85	5.99	151	6.18	5.26	132	6.76	5.34	134	6.86	5.13	129	6.83	4.77	120	3.55	3.44	86	-	10.29
		PD-1	12,100	3.14	3.00	160	2.97	2.80	150	3.01	2.69	144	2.73	2.22	119	3.20	2.69	144	2.58	2.59	139	-	3.74
		Total	63,131	15.43	13.82	141	14.21	12.37	127	15.31	12.38	127	15.87	11.70	120	15.67	11.59	119	9.19	9.05	93	-	20.50
Van Buren Twp.	58.9%[PA-4]	PA-4	5,719	1.43	1.39	157	1.50	1.41	160	1.60	1.45	164	1.88	1.63	184	1.53	1.38	156	1.02	1.02	115	-	2.21
Wyandotte	63.7%([SW]+[SWB])	SW	25,883	14.96	12.22	305	11.85	9.72	243	13.18	12.09	302	14.34	10.65	266	16.20	11.93	298	10.16	8.70	217	20.21	-
Subtotal Controlled Flow Communities			114,374	46.61	37.37	211	40.14	31.85	180	44.25	35.97	203	49.77	33.29	188	53.71	35.75	202	31.83	27.77	157	97.55	-
Subtotal Non-Controlled Flow Communities			155,677	44.40	39.97	166	43.20	38.03	158	46.76	38.51	160	54.99	42.60	177	47.05	36.28	151	26.68	26.32	109	-	59.02
Total Incoming Flow			270,052	91.01	77.34	185	83.52	69.88	167	91.84	74.48	178	104.99	75.89	182	101.19	72.03	172	58.51	54.08	129	-	-
DWTF Including Recycle (IPS + TPS)			270,052	96.60	81.30	195	89.17	73.50	176	100.77	80.41	192	113.54	81.19	194	109.57	77.49	185	64.87	60.39	145	-	-

Note:
1) Maximum flow limits from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These values are specified in the existing service agreement and were adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding.
2) Proposed maximum dry weather flow limits from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). Values are shown for informational purposes only as agreement on the flow limits has not yet been reached.
3) The maximum flow limit for each community component of Meter Distict SW is population weighted. Southgate and Wyandotte have maximum flow limits of 7.67 and 24.06 cfs, respectively. Therefore, the combined maximum flow limit is 31.73 cfs. The population weighted maximum flow limit for Southgate and Wyandotte are allocated to be 11.52 and 20.21 cfs, respectively.
4) The meter district flow rates are split into community components based on relative 2010 residential population.

Legend:	
XX.XX	Exceeds the maximum flow limit (for the controlled flow communities) or the maximum allowable average daily dry weather flow rate (for the non-controlled flow communities) by 0 to 20%
XX.XX	Exceeds the maximum flow limit (for the controlled flow communities) or the maximum allowable average daily dry weather flow rate (for the non-controlled flow communities) by greater than 20%

Table 9 continued
Downriver Sewage Disposal System
Monthly Incremental Flow Rates Summarized by Community

Community	Sewage Flow Meter Math	Meter District	Year 2010 Incremental Population	July 2017			August 2017			September 2017			October 2017			November 2017			December 2017			Proposed Maximum Allowable Dry Weather Flow Limits for Controlled Flow Communities ¹ (cfs)	Proposed Maximum Allowable Dry Weather Flow Limits for Non-Controlled Flow Communities ¹ (cfs)
				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)		
Allen Park	3.8%([PC-1]+[CPO]+[CHPO]-[TB-1]) + 23.9%([P-1]+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1]) + 34.6%([RD-1]-[EC-6]) + ([APO-1] + [APO-2])	PC-1	1,019	0.13	0.11	69	0.12	0.10	62	0.11	0.11	67	0.13	0.11	67	0.24	0.17	109	0.17	0.15	97	-	0.40
		P-1	3,332	0.55	0.51	99	0.53	0.47	92	0.50	0.49	94	0.56	0.49	94	0.89	0.70	136	0.65	0.62	121	-	1.47
		RD-1	18,179	3.85	3.03	108	3.87	2.67	95	2.92	2.80	99	2.83	2.16	77	5.41	2.38	85	2.59	2.17	77	17.20	-
		APO-1 + APO-2	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.34	0.00	-	0.00	0.00	-	-	-
		Total	22,531	4.53	3.65	105	4.52	3.24	93	3.54	3.39	97	3.52	2.75	79	6.88	3.25	93	3.40	2.94	84	-	1.87
Belleville	41.1%[PA-4]	PA-4	3,993	0.65	0.64	103	0.57	0.57	93	0.55	0.55	89	0.58	0.56	90	0.68	0.63	101	0.66	0.66	107	-	1.22
Brownstown Twp.	97.5%[P-2] + 1.8%([PA-2]+[ER-1]-[PA-3]-[ER-2])	P-2	10,397	1.93	1.88	117	2.02	1.89	117	1.96	1.93	120	1.99	1.93	120	2.49	2.21	137	2.15	2.11	131	-	3.65
		PA-2	248	0.03	0.03	68	0.03	0.03	67	0.03	0.03	69	0.03	0.03	70	0.04	0.04	91	0.03	0.03	84	-	0.06
		Total	10,645	1.96	1.91	116	2.05	1.91	116	1.98	1.96	119	2.02	1.96	119	2.54	2.24	136	2.18	2.14	130	-	3.71
Dearborn Hts.	78.2%([TB-1]+[TSO])	TB-1	19,152	2.82	2.44	82	2.69	2.17	73	2.38	2.27	77	2.67	2.31	78	4.67	3.24	109	3.21	2.96	100	-	7.66
Ecorse	71.5%([EC-6]-[RR-1])	EC-6	9,515	2.13	2.08	141	1.65	1.54	105	1.48	1.45	99	1.58	1.50	102	2.17	1.74	118	1.73	1.67	114	9.20	-
Lincoln Park	28.5%([EC-6]-[RR-1]) + 65.4%([RD-1]-[EC-6])	EC-6	3,795	0.85	0.83	141	0.66	0.61	105	0.59	0.58	99	0.63	0.60	102	0.87	0.69	118	0.69	0.67	114	3.00	-
		RD-1	34,347	7.27	5.73	108	7.31	5.04	95	5.52	5.28	99	5.34	4.08	77	10.22	4.49	85	4.89	4.09	77	25.16	-
		Total	38,142	8.12	6.56	111	7.97	5.66	96	6.11	5.86	99	5.98	4.68	79	11.09	5.18	88	5.58	4.76	81	28.16	-
River Rouge	[RR-1]	RR-1	7,903	3.12	2.78	227	3.00	2.41	197	2.10	1.98	162	1.88	1.52	125	3.06	2.08	170	1.90	1.82	149	11.26	-
Riverview	[RV-1]	RV-1	12,486	1.92	1.69	87	1.81	1.58	82	1.53	1.48	77	1.72	1.57	81	2.94	1.78	92	1.92	1.80	93	-	2.66
Romulus	[DMA-1] + ([PA-3]+[ER-2]-[PA-4]-[DMA-1] + [DMA-2] + ([PD-2] - [DMA-2])	DMA-1	0	0.86	0.84	-	0.87	0.85	-	0.78	0.78	-	0.78	0.77	-	0.70	0.72	-	0.72	0.70	-	-	5.96
		PA-3	11,371	2.66	2.52	143	2.38	2.23	127	2.48	2.43	138	2.40	2.36	134	3.31	2.97	169	3.15	3.06	174	-	
		DMA-2	0	0.16	0.15	-	0.15	0.15	-	0.15	0.15	-	0.15	0.15	-	2.48	3.11	-	1.32	1.49	-	-	8.42
		PD-2	9,532	1.89	1.78	121	1.77	1.64	111	1.70	1.67	113	1.78	1.69	115	2.82	2.61	177	2.11	2.10	142	-	
		Total	20,904	5.57	5.30	164	5.17	4.86	150	5.12	5.03	155	5.12	4.97	154	9.30	9.41	291	7.30	7.34	227	-	14.38
Southgate	76.1%([P-1]+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1]) + 40%[PB-1] + 36.3%([SW]+[SWB]) + 1.4%([P-1]+[PM-1]-[P-2]-[PA-2]-[PB-1]-[PD-1]-[PC-1])	P-1	10,637	1.77	1.63	99	1.69	1.51	92	1.60	1.55	94	1.80	1.55	94	2.85	2.25	136	2.07	1.99	121	-	3.42
		PB-1	4,459	0.57	0.53	77	0.59	0.52	76	0.54	0.53	76	0.54	0.53	77	0.68	0.52	75	0.52	0.49	71	-	1.33
		SW	14,752	7.19	5.14	225	6.34	4.87	214	4.22	3.67	161	4.82	3.96	173	6.95	4.56	200	4.61	4.10	179	11.52	-
		TPS+IPS	199	0.03	0.03	99	0.03	0.03	92	0.03	0.03	94	0.03	0.03	94	0.05	0.04	136	0.04	0.04	121	-	0.06
		Total	30,047	9.56	7.33	158	8.65	6.93	149	6.40	5.78	124	7.20	6.07	131	10.54	7.37	158	7.23	6.62	142	-	4.81
Taylor	2.5%[P-2] + 98.2%([PA-2]+[ER-1]-[PA-3]-[ER-2]) + 60%[PB-1] + 21.8%([TB-1]+[TSO]) + 96.2%([PC-1]+[CPO]+[CHPO]-[TB-1]) + ([PD-1]-[PD-2])	P-2	262	0.05	0.05	117	0.05	0.05	117	0.05	0.05	120	0.05	0.05	120	0.06	0.06	137	0.05	0.05	131	-	0.08
		PA-2	13,270	1.52	1.40	68	1.54	1.37	67	1.47	1.43	69	1.50	1.43	70	2.35	1.88	91	1.80	1.73	84	-	2.24
		PB-1	6,462	0.86	0.80	80	0.88	0.79	79	0.81	0.79	79	0.81	0.80	80	1.02	0.77	77	0.77	0.74	74	-	2.01
		TB-1	5,339	0.79	0.68	82	0.75	0.61	73	0.66	0.63	77	0.74	0.64	78	1.30	0.90	109	0.90	0.82	100	-	2.14
		PC-1	25,700	3.20	2.73	69	3.08	2.45	62	2.86	2.66	67	3.23	2.67	67	6.15	4.33	109	4.19	3.85	97	-	10.29
		PD-1	12,100	2.41	2.31	123	2.20	2.07	111	2.13	2.08	111	2.12	2.02	108	2.61	2.20	117	2.36	2.31	124	-	3.74
		Total	63,131	8.83	7.96	82	8.50	7.33	75	7.98	7.63	78	8.46	7.61	78	13.49	10.13	104	10.07	9.52	97	-	20.50
Van Buren Twp.	58.9%[PA-4]	PA-4	5,719	0.93	0.91	103	0.82	0.82	93	0.79	0.79	89	0.82	0.80	90	0.97	0.90	101	0.94	0.94	107	-	2.21
Wyandotte	63.7%([SW]+[SWB])	SW	25,883	12.62	9.02	225	11.13	8.55	214	7.41	6.45	161	8.45	6.94	173	12.20	8.01	200	8.09	7.19	179	20.21	-
Subtotal Controlled Flow Communities			114,374	37.01	28.63	162	33.95	25.71	145	24.25	22.20	125	25.54	20.77	117	40.89	23.95	135	24.51	21.69	123	97.55	-
Subtotal Non-Controlled Flow Communities			155,677	25.73	23.66	98	24.57	21.88	91	23.12	22.40	93	24.45	22.48	93	39.30	32.01	133	29.73	28.65	119	-	59.02
Total Incoming Flow			270,052	62.75	52.28	125	58.52	47.58	114	47.37	44.61	107	49.98	43.25	104	80.53	55.96	134	54.23	50.35	120	-	-
DWTF Including Recycle (IPS + TPS)			270,052	67.80	56.58	135	64.56	52.66	126	50.96	47.70	114	57.54	48.55	116	89.61	60.34	144	59.21	55.08	132	-	-

Note:
1) Maximum flow limits from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These values are specified in the existing service agreement and were adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding.
2) Proposed maximum dry weather flow limits from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). Values are shown for informational purposes only as agreement on the flow limits has not yet been reached.
3) The maximum flow limit for each community component of Meter Distict SW is population weighted. Southgate and Wyandotte have maximum flow limits of 7.67 and 24.06 cfs, respectively. Therefore, the combined maximum flow limit is 31.73 cfs. The population weighted maximum flow limit for Southgate and Wyandotte are allocated to be 11.52 and 20.21 cfs, respectively.
4) The meter district flow rates are split into community components based on relative 2010 residential population.

Legend:	
XX.XX	Exceeds the maximum flow limit (for the controlled flow communities) or the maximum allowable average daily dry weather flow rate (for the non-controlled flow communities) by 0 to 20%
XX.XX	Exceeds the maximum flow limit (for the controlled flow communities) or the maximum allowable average daily dry weather flow rate (for the non-controlled flow communities) by greater than 20%

4. 2017 DSDS SYSTEM MONITORING PLAN UPDATES

The DSDS System Monitoring Plan was updated in April 2015, and is available online at <http://www.waynecounty.com/doe/dps-fmd-reference-library.htm>. Modifications to the DSDS System Monitoring Plan which occurred in 2017 are summarized below.

Appendix B presents detailed 2017 flow monitoring data for each meter in the DSDS system monitoring plan and other related information.

Meter System Changes

No new flow meters were installed in 2017.

Dye-Dilution Tests

Dye-dilution tests are used to verify meter accuracy and estimate meter bias. The dye test results were used to adjust the flow meter data to provide more reasonable estimates of flow rates for the meters, meter districts, and communities. Some of the dye tests which occurred from 2013 through 2017 were used to adjust the data for 2017. The results of these dye tests and meter adjustment factors are shown in Table 10.

Table 10
Downriver Sewage Disposal System
Dye-Dilution Test Summary

Meter	Date	Adjustment Factor	Period Adjustment Factor
DMA-2	9/24/2014	0.86	0.86
EC-6	2/18/2014	0.70	0.70
P-1	9/16/2013	0.99	0.99
P-2	9/18/2017	1.01	1.01
PA-1	11/6/2013	0.93	0.93
PA-2	11/4/2013	0.86	0.90
	9/18/2017	0.94	
PA-3	11/5/2013	1.00	1.00
PA-4	8/18/2015	0.81	0.81
PB-1	9/18/2014	0.86	0.86
PC-1	9/25/2014	0.93	0.93
PD-1	8/18/2015	0.76	0.76
PD-2	11/26/2013	0.97	0.97
RD-1	9/17/2009	1.14 ¹	1.05
	12/14/2009	1.05	
	7/24/2013	1.05	
	9/23/2014	0.96 ²	
RR-1	2/19/2014	0.97	0.97
SW	11/12/2013	1.00 (with sludge accounted for)	1.00
TB-1	11/10/2014	1.05	1.05

Notes:

1. Meter data had a significant clock error and could not be confidently aligned with the dye-dilution test data.
2. Meter data included discrepancies between redundant depth sensors that creates uncertainty in the meter flow rates.

5. 2017 PRECIPITATION DATA

Table 11 lists the monthly precipitation at DTW, the departure from normal, and the number of wet/dry days included for each month.

Table 11
Downriver Sewage Disposal System
Dry/Wet Weather Day Count by Month and Monthly Precipitation at DTW for 2017

Month	Number of Dry Weather Days	Number of Wet Weather Days	Monthly Total Precipitation (in)	
			DTW ¹	Departure From Normal ²
January	18	13	2.83	+0.87
February	18	10	1.90	-0.12
March	17	14	4.26	+1.98
April	10	20	3.55	+0.65
May	10	21	4.39	+1.01
June	24	6	2.02	-1.50
July	19	12	2.44	-0.93
August	17	14	3.91	+0.91
September	23	7	0.91	-2.36
October	16	15	2.84	+0.32
November	9	21	4.93	+2.14
December	26	5	1.48	-0.98
Total	207	158	35.46	+1.99

Notes:

1. Detroit Metropolitan Wayne County Airport (DTW)
2. Normal is a period mean computed by the National Climatic Data Center (NCDC) for a National Weather Service (NWS) observing station from a period comprising three consecutive 10-year decadal periods (for example, 1981-2010)

Significant storm events are defined as those with at least 0.5 inches of rainfall occurring on a single day with an event total of at least 1.0 inch of rainfall. Significant storm events are separated by at least 2 consecutive days without precipitation over 0.1 inches. This storm event definition is based on the arithmetic mean of the rainfall recorded by all rain gages used in the analysis for that storm. 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 ten significant storm events in 2017. Of these ten events, three were also considered major storm events. The precipitation data for the significant/major storm events are further summarized in Appendix C. 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 Wayne County rain gage data was performed and involved a review of the maintenance logs and a comparison of the recorded precipitation to other nearby rain gages. The maintenance logs identified rain gage issues which were detected during site visits. In almost all cases these issues were resolved during the site visit. In general, when a rain gage had an issue, it recorded zero precipitation. All rain gage data with documented maintenance log issues were flagged.

For the DSDS rain gages, the minimum, average, and maximum recorded annual precipitation for 2017 were 33.93, 35.94, and 37.73 inches, respectively. The annual total precipitation for rain gages R-02, R-06, R-08, R-10, R-15 and R-18 were omitted from this summary because they were missing data for some period in 2017. The precipitation data are further summarized in Appendix C.

6. SUMMARY OF 2017 DSDS DRY WEATHER FLOWS

A single set of dry days was used to estimate the dry weather flow rates for all of the meters. The dry weather days were determined by analyzing the daily flow rate traces for meters near the downstream end of the interceptor system. The meters used for this analysis include: [P-1], [PA-2], [PC-1], [EC-6], and [RD-1]. 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. Two methods were used for screening out dry and wet weather days using average daily flow rates.

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

The second method was designed to flag additional wet weather days that were typically found during large, multiple day events that elevated the metered flow rates for a few days. When this happens, the days in the middle of the event are not flagged by the first method because there is no change in the already elevated flow rate. For this method, the average daily flow rate on dry days was constrained to remain below two standard deviations of the two month average flow rate. Any day with a daily average above this was flagged as a wet day. The monitoring period data was analyzed for dry weather days in two month increments: January-February, March-April, May-June, July-August, September-October, and November-December.

7. SUMMARY OF 2017 DSDS WET WEATHER FLOWS

Appendix D contains detailed summary tables and figures for the three major storm events which occurred in 2017. Peak hourly flow rates, peak 96-hour volumes, and peak hydraulic gradelines are tabulated for each meter. For the controlled flow communities, the incremental peak hourly flow rates are summarized by meter district. For the non-controlled flow communities, the peak 96-hour volumes are summarized for each meter district and for each community. In addition, the total 96-hour volumes versus precipitation for both major storm events are compared to the 4.42 inch design event for the non-controlled flow communities.

Controlled Flow Communities

The Riverdrive Interceptor surcharged during all three major storm events. The surcharging at Meters RR-1, EC-6 and RD-1 highlight the exceedence and capacity issues along the Riverdrive Interceptor. Surcharging at Meter SW normally occurs, and is due to backwater from the Influent Pump Station at the DWTF.

There was no reverse flow from the DSDS into the SWRDDD system during any of the Major Storm Events. Reverse flow occurs as hydraulically necessary for emergency operating conditions and/or storms greater than the design storm.

Incremental peak hourly flow rates for Meter EC-6 were determined by routing Meter RR-1 flow rates through the Riverdrive Interceptor to the location of Meter EC-6 using the SWMM5 mini-model. The routed RR-1 flow rates were subtracted from the EC-6 flow rates to get the incremental EC-6 flow rates. RD-1 incremental peak hourly flow rates were determined in the same manner as EC-6 incremental flow rates, using the routed EC-6 flow rates and RD-1 flow rates.

The maximum flow limit for the Southgate-Wyandotte meter district is 31.73 cfs. The total flow rate for the district is the sum of Meters SW and SWB. Meter SW is located on the connection between the Drainage District Number 5 pump station and IPS and carries dry weather flow. Meter SWB is located on the dewatering line from the Southgate-Wyandotte CSO Retention Basin and operates intermittently. The flow rate at Meter SW is typically throttled to a maximum of about 31.73 cfs by a gate at an upstream regulating chamber. This gate uses the raw flow rate data from Meter SW to control the throttling. However, the raw flow rate data from Meter SW does not account for sludge deposits in the pipe. Therefore, the actual flow rate is controlled to about 26 cfs.

Non-Controlled Flow Communities

Surcharging was recorded for all three of the major storm events. For Event A, surcharging was recorded at Meters P-1 and RV-1 along the Pennsylvania Interceptor. For Event B, surcharging was recorded at Meters P-1 and RV-1 along the Pennsylvania Interceptor, and Meter PC-1 along the Pelham Interceptor. For Event C, surcharging was recorded at Meter RV-1 along the Pennsylvania Interceptor.

The peak 96-hour wet weather volumes for the non-controlled flow communities during the significant storm events that occurred in 2017 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 DRSTS. The City of Southgate (part) is estimated to have exceeded the allowable peak 96-hour total volumes during Significant Storm Events B and C. None of the other Downriver communities are estimated to have exceeded the allowable peak 96-hour total volumes during the major storm events for this 2017 reporting period.

Appendix A

Additional Monthly Summary Tables, 2017 DSDS System Monitoring Plan

Table A-1
Downriver Sewage Disposal System
Incremental Flow Rates Summarized by Meter District with Community Components

Meter District	Community	Year 2010 Incremental Population	Meter District Percentage	January 2017			February 2017			March 2017			April 2017			May 2017			June 2017		
				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	19,152	78.2%	6.02	5.14	173	5.79	4.68	158	5.98	4.62	156	8.64	5.79	195	6.77	4.54	153	3.12	3.05	103
	Taylor	5,339	21.8%	1.68	1.43		1.61	1.31		1.67	1.29		2.41	1.61		1.89	1.27		0.87	0.85	
	Total	24,491	100.0%	7.69	6.57		7.40	5.99		7.65	5.91		11.05	7.40		8.66	5.81		4.00	3.90	
PC-1	Allen Park	1,019	3.8%	0.27	0.24	151	0.25	0.21	132	0.27	0.21	134	0.27	0.20	129	0.27	0.19	120	0.14	0.14	86
	Taylor	25,700	96.2%	6.85	5.99		6.18	5.26		6.76	5.34		6.86	5.13		6.83	4.77		3.55	3.44	
	Total	26,719	100.0%	7.12	6.22		6.43	5.47		7.03	5.55		7.13	5.34		7.10	4.96		3.69	3.58	
DMA-2	Romulus	0	100.0%	1.43	1.33	--	1.78	1.82	--	1.64	1.69	--	3.68	3.47	--	1.71	1.41	--	0.15	0.15	--
PD-2	Romulus	9,532	100.0%	3.46	3.23	219	3.55	3.15	213	3.87	3.21	218	5.03	4.07	276	3.64	2.95	200	1.96	1.94	131
PD-1	Taylor	12,100	100.0%	3.14	3.00	160	2.97	2.80	150	3.01	2.69	144	2.73	2.22	119	3.20	2.69	144	2.58	2.59	139
PB-1 ¹	Taylor	6,462	60.0%	1.12	1.01	101	1.09	0.97	97	1.24	1.03	103	1.24	0.99	100	1.23	0.98	98	0.83	0.81	81
	Southgate	4,459	40.0%	0.74	0.67	97	0.73	0.64	93	0.83	0.69	100	0.83	0.66	96	0.82	0.65	95	0.56	0.54	79
	Total	10,921	100.0%	1.86	1.68	100	1.81	1.61	95	2.07	1.72	102	2.07	1.66	98	2.05	1.63	97	1.39	1.36	80
PA-4	Belleville	3,993	41.1%	1.00	0.97	157	1.05	0.99	160	1.12	1.01	164	1.31	1.14	184	1.07	0.96	156	0.71	0.71	115
	Van Buren Twp	5,719	58.9%	1.43	1.39		1.50	1.41		1.60	1.45		1.88	1.63		1.53	1.38		1.02	1.02	
	Total	9,712	100.0%	2.43	2.36		2.55	2.40		2.73	2.47		3.19	2.77		2.60	2.35		1.73	1.74	
DMA-1	Romulus (Airport)	0	100.0%	0.67	0.67	--	0.68	0.68	--	0.77	0.77	--	0.80	0.79	--	0.82	0.81	--	0.84	0.83	--
PA-3	Romulus	11,371	100.0%	4.50	4.25	242	4.77	4.31	245	5.18	4.48	255	6.15	5.00	284	4.99	4.25	242	3.12	3.14	178
PA-2	Taylor	13,270	98.2%	2.59	2.34	114	2.29	1.98	97	2.56	1.97	96	2.57	1.69	82	2.46	1.83	89	1.31	1.31	64
	Brownstown Twp	248	1.8%	0.05	0.04		0.04	0.04		0.05	0.04		0.05	0.03		0.05	0.03		0.02	0.02	
	Total	13,517	100.0%	2.64	2.38		2.34	2.02		2.61	2.01		2.62	1.72		2.51	1.86		1.33	1.34	
P-2	Brownstown Twp	10,397	97.5%	2.34	2.19	136	2.25	2.10	131	2.48	2.15	134	2.48	2.09	130	2.40	2.08	130	1.73	1.73	107
	Taylor	262	2.5%	0.06	0.06		0.06	0.05		0.06	0.05		0.06	0.05		0.06	0.05		0.04	0.04	
	Total	10,659	100.0%	2.40	2.24		2.31	2.15		2.54	2.21		2.54	2.14		2.46	2.14		1.77	1.77	
P-1	Allen Park	3,332	23.9%	0.96	0.88	170	0.95	0.84	162	1.03	0.84	164	1.22	0.94	183	1.04	0.80	155	0.58	0.58	112
	Southgate	10,637	76.1%	3.08	2.80		3.03	2.67		3.29	2.70		3.89	3.02		3.31	2.55		1.86	1.84	
	Total	13,969	100.0%	4.04	3.67		3.98	3.51		4.32	3.54		5.11	3.96		4.35	3.34		2.44	2.42	
RV-1	Riverview	12,486	100.0%	2.96	2.31	119	2.57	2.07	107	3.29	2.20	114	2.81	2.00	104	2.90	2.02	105	1.64	1.55	80
RR-1	River Rouge	7,903	100.0%	3.98	3.48	284	4.26	3.75	306	4.00	3.16	258	4.54	3.22	263	4.98	3.52	288	3.32	3.01	246
EC-6	Ecorse	9,515	71.5%	2.30	2.12	144	2.09	1.87	127	2.44	1.89	128	2.70	2.45	166	2.91	2.51	171	2.03	1.99	135
	Lincoln Park	3,795	28.5%	0.92	0.84		0.83	0.75		0.97	0.75		1.08	0.98		1.16	1.00		0.81	0.80	
	Total	13,310	100.0%	3.21	2.96		2.92	2.62		3.41	2.64		3.77	3.42		4.07	3.52		2.84	2.79	
RD-1	Allen Park	18,179	34.6%	5.52	4.07	145	4.97	3.54	126	5.59	3.87	138	6.56	3.43	122	6.65	3.46	123	3.36	2.87	102
	Lincoln Park	34,347	65.4%	10.42	7.68		9.39	6.68		10.56	7.31		12.39	6.49		12.57	6.53		6.36	5.43	
	Total	52,526	100.0%	15.94	11.75		14.35	10.22		16.15	11.18		18.95	9.92		19.22	9.99		9.72	8.30	
SW + SWB	Southgate	14,752	36.3%	8.53	6.97	305	6.75	5.54	243	7.51	6.89	302	8.17	6.07	266	9.23	6.80	298	5.79	4.96	217
	Wyandotte	25,883	63.7%	14.96	12.22		11.85	9.72		13.18	12.09		14.34	10.65		16.20	11.93		10.16	8.70	
	Total	40,635	100.0%	23.48	19.19		18.61	15.26		20.69	18.98		22.51	16.72		25.43	18.72		15.95	13.67	
APO-1 + APO-2	Allen Park	0	100.0%	0.00	0.00	--	0.19	0.00	--	0.83	0.00	--	0.23	0.00	--	0.42	0.00	--	0.00	0.00	--
TPS+IPS	Southgate	199	100.0%	0.06	0.05	170	0.06	0.05	162	0.06	0.05	164	0.07	0.06	183	0.06	0.05	155	0.03	0.03	112
Subtotal Controlled Flow Communities		114,374	42.4%	46.61	37.37	211	40.14	31.85	180	44.25	35.97	203	49.77	33.29	188	53.71	35.75	202	31.83	27.77	157
Subtotal Non-Controlled Flow Communities		155,677	57.6%	44.40	39.97	166	43.38	38.03	158	47.59	38.51	160	55.22	42.60	177	47.48	36.28	151	26.68	26.32	109
Total Incoming Flow		270,052	100.0%	91.01	77.34	185	83.52	69.88	167	91.84	74.48	178	104.99	75.89	182	101.19	72.03	172	58.51	54.08	129
DWTf Including Recycle (IPS + TPS)		270,052	100.0%	96.60	81.30	195	89.17	73.50	176	100.77	80.41	192	113.54	81.19	194	109.57	77.49	185	64.87	60.39	145

Notes:

1) PB-1 flow rates were estimated to be 60% Taylor and 40% Southgate of the total Meter PB-1 flow rates.

Table A-1 continued
Downriver Sewage Disposal System
Incremental Flow Rates Summarized by Meter District with Community Components

Meter District	Community	Year 2010 Incremental Population	Meter District Percentage	July 2017			August 2017			September 2017			October 2017			November 2017			December 2017		
				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	19,152	78.2%	2.82	2.44	82	2.69	2.17	73	2.38	2.27	77	2.67	2.31	78	4.67	3.24	109	3.21	2.96	100
	Taylor	5,339	21.8%	0.79	0.68		0.75	0.61		0.66	0.63		0.74	0.64		1.30	0.90		0.90	0.82	
	Total	24,491	100.0%	3.61	3.12		3.43	2.78		3.04	2.90		3.41	2.95		5.97	4.14		4.11	3.78	
PC-1	Allen Park	1,019	3.8%	0.13	0.11	69	0.12	0.10	62	0.11	0.11	67	0.13	0.11	67	0.24	0.17	109	0.17	0.15	97
	Taylor	25,700	96.2%	3.20	2.73		3.08	2.45		2.86	2.66		3.23	2.67		6.15	4.33		4.19	3.85	
	Total	26,719	100.0%	3.33	2.84		3.20	2.55		2.97	2.76		3.36	2.78		6.39	4.50		4.36	4.01	
DMA-2	Romulus	0	100.0%	0.16	0.15	--	0.15	0.15	--	0.15	0.15	--	0.15	0.15	--	2.48	3.11	--	1.32	1.49	--
PD-2	Romulus	9,532	100.0%	1.89	1.78	121	1.77	1.64	111	1.70	1.67	113	1.78	1.69	115	2.82	2.61	177	2.11	2.10	142
PD-1	Taylor	12,100	100.0%	2.41	2.31	123	2.20	2.07	111	2.13	2.08	111	2.12	2.02	108	2.61	2.20	117	2.36	2.31	124
PB-1 ¹	Taylor	6,462	60.0%	0.86	0.80	80	0.88	0.79	79	0.81	0.79	79	0.81	0.80	80	1.02	0.77	77	0.77	0.74	74
	Southgate	4,459	40.0%	0.57	0.53	77	0.59	0.52	76	0.54	0.53	76	0.54	0.53	77	0.68	0.52	75	0.52	0.49	71
	Total	10,921	100.0%	1.43	1.33	78	1.47	1.31	77	1.35	1.31	78	1.36	1.33	79	1.70	1.29	76	1.29	1.23	73
PA-4	Belleville	3,993	41.1%	0.65	0.64	103	0.57	0.57	93	0.55	0.55	89	0.58	0.56	90	0.68	0.63	101	0.66	0.66	107
	Van Buren Twp	5,719	58.9%	0.93	0.91		0.82	0.82		0.79	0.79		0.82	0.80		0.97	0.90		0.94	0.94	
	Total	9,712	100.0%	1.57	1.55		1.39	1.39		1.34	1.34		1.40	1.35		1.64	1.52		1.60	1.60	
DMA-1	Romulus (Airport)	0	100.0%	0.86	0.84	--	0.87	0.85	--	0.78	0.78	--	0.78	0.77	--	0.70	0.72	--	0.72	0.70	--
PA-3	Romulus	11,371	100.0%	2.66	2.52	143	2.38	2.23	127	2.48	2.43	138	2.40	2.36	134	3.31	2.97	169	3.15	3.06	174
PA-2	Taylor	13,270	98.2%	1.52	1.40	68	1.54	1.37	67	1.47	1.43	69	1.50	1.43	70	2.35	1.88	91	1.80	1.73	84
	Brownstown Twp	248	1.8%	0.03	0.03		0.03	0.03		0.03	0.03		0.03	0.03		0.04	0.04		0.03	0.03	
	Total	13,517	100.0%	1.55	1.43		1.56	1.39		1.49	1.45		1.53	1.46		2.39	1.91		1.83	1.76	
P-2	Brownstown Twp	10,397	97.5%	1.93	1.88	117	2.02	1.89	117	1.96	1.93	120	1.99	1.93	120	2.49	2.21	137	2.15	2.11	131
	Taylor	262	2.5%	0.05	0.05		0.05	0.05		0.05	0.05		0.05	0.05		0.06	0.06		0.05	0.05	
	Total	10,659	100.0%	1.98	1.93		2.07	1.93		2.01	1.98		2.04	1.98		2.56	2.26		2.20	2.16	
P-1	Allen Park	3,332	23.9%	0.55	0.51	99	0.53	0.47	92	0.50	0.49	94	0.56	0.49	94	0.89	0.70	136	0.65	0.62	121
	Southgate	10,637	76.1%	1.77	1.63		1.69	1.51		1.60	1.55		1.80	1.55		2.85	2.25		2.07	1.99	
	Total	13,969	100.0%	2.32	2.14		2.22	1.98		2.11	2.04		2.37	2.04		3.74	2.95		2.71	2.62	
RV-1	Riverview	12,486	100.0%	1.92	1.69	87	1.81	1.58	82	1.53	1.48	77	1.72	1.57	81	2.94	1.78	92	1.92	1.80	93
RR-1	River Rouge	7,903	100.0%	3.12	2.78	227	3.00	2.41	197	2.10	1.98	162	1.88	1.52	125	3.06	2.08	170	1.90	1.82	149
EC-6	Ecorse	9,515	71.5%	2.13	2.08	141	1.65	1.54	105	1.48	1.45	99	1.58	1.50	102	2.17	1.74	118	1.73	1.67	114
	Lincoln Park	3,795	28.5%	0.85	0.83		0.66	0.61		0.59	0.58		0.63	0.60		0.87	0.69		0.69	0.67	
	Total	13,310	100.0%	2.97	2.91		2.30	2.16		2.07	2.03		2.22	2.10		3.04	2.43		2.42	2.34	
RD-1	Allen Park	18,179	34.6%	3.85	3.03	108	3.87	2.67	95	2.92	2.80	99	2.83	2.16	77	5.41	2.38	85	2.59	2.17	77
	Lincoln Park	34,347	65.4%	7.27	5.73		7.31	5.04		5.52	5.28		5.34	4.08		10.22	4.49		4.89	4.09	
	Total	52,526	100.0%	11.11	8.77		11.18	7.71		8.44	8.08		8.17	6.24		15.63	6.87		7.48	6.26	
SW + SWB	Southgate	14,752	36.3%	7.19	5.14	225	6.34	4.87	214	4.22	3.67	161	4.82	3.96	173	6.95	4.56	200	4.61	4.10	179
	Wyandotte	25,883	63.7%	12.62	9.02		11.13	8.55		7.41	6.45		8.45	6.94		12.20	8.01		8.09	7.19	
	Total	40,635	100.0%	19.81	14.17		17.47	13.43		11.63	10.12		13.27	10.90		19.16	12.57		12.70	11.28	
APO-1 + APO-2	Allen Park	0	100.0%	0.00	0.00	--	0.00	0.00	--	0.00	0.00	--	0.00	0.00	--	0.34	0.00	--	0.00	0.00	--
TPS+IPS	Southgate	199	100.0%	0.03	0.03	99	0.03	0.03	92	0.03	0.03	94	0.03	0.03	94	0.05	0.04	136	0.04	0.04	121

Subtotal Controlled Flow Communities	114,374	42.4%	37.01	28.63	162	33.95	25.71	145	24.25	22.20	125	25.54	20.77	117	40.89	23.95	135	24.51	21.69	123
Subtotal Non-Controlled Flow Communities	155,677	57.6%	25.73	23.66	98	24.57	21.88	91	23.12	22.40	93	24.45	22.48	93	39.64	32.01	133	29.73	28.65	119
Total Incoming Flow	270,052	100.0%	62.75	52.28	125	58.52	47.58	114	47.37	44.61	107	49.98	43.25	104	80.53	55.96	134	54.23	50.35	120
DWTF Including Recycle (IPS + TPS)	270,052	100.0%	67.80	56.58	135	64.56	52.66	126	50.96	47.70	114	57.54	48.55	116	89.61	60.34	144	59.21	55.08	132

Notes:

1) PB-1 flow rates were estimated to be 60% Taylor and 40% Southgate of the total Meter PB-1 flow rates.

Table A-2
Downriver Sewage Disposal System
Incremental Flow Rates by Meter District

Meter District	Incremental Meter District Formula	Year 2010 Incremental Population	January 2017			February 2017			March 2017			April 2017			May 2017			June 2017		
			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]	24,491	7.69	6.57	173	7.40	5.99	158	7.65	5.91	156	11.05	7.40	195	8.66	5.81	153	4.00	3.90	103
PC-1	[PC-1]+[CPO] +[CHPO]-[TB-1]	26,719	7.12	6.22	151	6.43	5.47	132	7.03	5.55	134	7.13	5.34	129	7.10	4.96	120	3.69	3.58	86
DMA-2	[DMA-2]	0	1.43	1.33	-	1.78	1.82	-	1.64	1.69	-	3.68	3.47	-	1.71	1.41	-	0.15	0.15	-
PD-2	[PD-2] - [DMA-2]	9,532	3.46	3.23	219	3.55	3.15	213	3.87	3.21	218	5.03	4.07	276	3.64	2.95	200	1.96	1.94	131
PD-1	[PD-1]-[PD-2]+[PDO]	12,100	3.14	3.00	160	2.97	2.80	150	3.01	2.69	144	2.73	2.22	119	3.20	2.69	144	2.58	2.59	139
PB-1	[PB-1]	10,921	1.86	1.68	100	1.81	1.61	95	2.07	1.72	102	2.07	1.66	98	2.05	1.63	97	1.39	1.36	80
PA-4	[PA-4]	9,712	2.43	2.36	157	2.55	2.40	160	2.73	2.47	164	3.19	2.77	184	2.60	2.35	156	1.73	1.74	115
DMA-1	[DMA-1]	0	0.67	0.67	-	0.68	0.68	-	0.77	0.77	-	0.80	0.79	-	0.82	0.81	-	0.84	0.83	-
PA-3	[PA-3]+[ER-2] -[PA-4]-[DMA-1]	11,371	4.50	4.25	242	4.77	4.31	245	5.18	4.48	255	6.15	5.00	284	4.99	4.25	242	3.12	3.14	178
PA-2	[PA-2]+[ER-1] -[PA-3]-[ER-2]	13,517	2.64	2.38	114	2.34	2.02	97	2.61	2.01	96	2.62	1.72	82	2.51	1.86	89	1.33	1.34	64
P-2	[P-2]	10,659	2.40	2.24	136	2.31	2.15	131	2.54	2.21	134	2.54	2.14	130	2.46	2.14	130	1.77	1.77	107
P-1	[P-1]+[PM-1]-[P-2] -[PA-2]-[PB-1]-[PD-1]-[PC-1]	13,969	4.04	3.67	170	3.98	3.51	162	4.32	3.54	164	5.11	3.96	183	4.35	3.34	155	2.44	2.42	112
RV-1	[RV-1]	12,486	2.96	2.31	119	2.57	2.07	107	3.29	2.20	114	2.81	2.00	104	2.90	2.02	105	1.64	1.55	80
RR-1	[RR-1]	7,903	3.98	3.48	284	4.26	3.75	306	4.00	3.16	258	4.54	3.22	263	4.98	3.52	288	3.32	3.01	246
EC-6	[EC-6]-[RR-1]	13,310	3.21	2.96	144	2.92	2.62	127	3.41	2.64	128	3.77	3.42	166	4.07	3.52	171	2.84	2.79	135
RD-1	[RD-1]-[EC-6]	52,526	15.94	11.75	145	14.35	10.22	126	16.15	11.18	138	18.95	9.92	122	19.22	9.99	123	9.72	8.30	102
APO-1 + APO-2	[APO-1]+[APO-2]	0	0.00	0.00	-	0.19	0.00	-	0.83	0.00	-	0.23	0.00	-	0.42	0.00	-	0.00	0.00	-
SW+SWB	[SW]+[SWB]	40,635	23.48	19.19	305	18.61	15.26	243	20.69	18.98	302	22.51	16.72	266	25.43	18.72	298	15.95	13.67	217
TPS+IPS ¹	Population Ratio of Meter District P-1	199	0.06	0.05	170	0.06	0.05	162	0.06	0.05	164	0.07	0.06	183	0.06	0.05	155	0.03	0.03	112

Notes:

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

Table A-2 continued
Downriver Sewage Disposal System
Incremental Flow Rates by Meter District

Meter District	Incremental Meter District Formula	Year 2010 Incremental Population	July 2017			August 2017			September 2017			October 2017			November 2017			December 2017		
			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]	24,491	3.61	3.12	82	3.43	2.78	73	3.04	2.90	77	3.41	2.95	78	5.97	4.14	109	4.11	3.78	100
PC-1	[PC-1]+[CPO] +[CHPO]-[TB-1]	26,719	3.33	2.84	69	3.20	2.55	62	2.97	2.76	67	3.36	2.78	67	6.39	4.50	109	4.36	4.01	97
DMA-2	[DMA-2]	0	0.16	0.15	-	0.15	0.15	-	0.15	0.15	-	0.15	0.15	-	2.48	3.11	-	1.32	1.49	-
PD-2	[PD-2] - [DMA-2]	9,532	1.89	1.78	121	1.77	1.64	111	1.70	1.67	113	1.78	1.69	115	2.82	2.61	177	2.11	2.10	142
PD-1	[PD-1]-[PD-2]+[PDO]	12,100	2.41	2.31	123	2.20	2.07	111	2.13	2.08	111	2.12	2.02	108	2.61	2.20	117	2.36	2.31	124
PB-1	[PB-1]	10,921	1.43	1.33	78	1.47	1.31	77	1.35	1.31	78	1.36	1.33	79	1.70	1.29	76	1.29	1.23	73
PA-4	[PA-4]	9,712	1.57	1.55	103	1.39	1.39	93	1.34	1.34	89	1.40	1.35	90	1.64	1.52	101	1.60	1.60	107
DMA-1	[DMA-1]	0	0.86	0.84	-	0.87	0.85	-	0.78	0.78	-	0.78	0.77	-	0.70	0.72	-	0.72	0.70	-
PA-3	[PA-3]+[ER-2] -[PA-4]-[DMA-1]	11,371	2.66	2.52	143	2.38	2.23	127	2.48	2.43	138	2.40	2.36	134	3.31	2.97	169	3.15	3.06	174
PA-2	[PA-2]+[ER-1] -[PA-3]-[ER-2]	13,517	1.55	1.43	68	1.56	1.39	67	1.49	1.45	69	1.53	1.46	70	2.39	1.91	91	1.83	1.76	84
P-2	[P-2]	10,659	1.98	1.93	117	2.07	1.93	117	2.01	1.98	120	2.04	1.98	120	2.56	2.26	137	2.20	2.16	131
P-1	[P-1]+[PM-1]-[P-2] -[PA-2]-[PB-1]-[PD-1]-[PC-1]	13,969	2.32	2.14	99	2.22	1.98	92	2.11	2.04	94	2.37	2.04	94	3.74	2.95	136	2.71	2.62	121
RV-1	[RV-1]	12,486	1.92	1.69	87	1.81	1.58	82	1.53	1.48	77	1.72	1.57	81	2.94	1.78	92	1.92	1.80	93
RR-1	[RR-1]	7,903	3.12	2.78	227	3.00	2.41	197	2.10	1.98	162	1.88	1.52	125	3.06	2.08	170	1.90	1.82	149
EC-6	[EC-6]-[RR-1]	13,310	2.97	2.91	141	2.30	2.16	105	2.07	2.03	99	2.22	2.10	102	3.04	2.43	118	2.42	2.34	114
RD-1	[RD-1]-[EC-6]	52,526	11.11	8.77	108	11.18	7.71	95	8.44	8.08	99	8.17	6.24	77	15.63	6.87	85	7.48	6.26	77
APO-1 + APO-2	[APO-1]+[APO-2]	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.34	0.00	-	0.00	0.00	-
SW+SWB	[SW]+[SWB]	40,635	19.81	14.17	225	17.47	13.43	214	11.63	10.12	161	13.27	10.90	173	19.16	12.57	200	12.70	11.28	179
TPS+IPS ¹	Population Ratio of Meter District P-1	199	0.03	0.03	99	0.03	0.03	92	0.03	0.03	94	0.03	0.03	94	0.05	0.04	136	0.04	0.04	121

Notes:

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

Table A-3
Downriver Sewage Disposal System
Monthly Flow Rates by Meter for 2017

System	Meter	Location	Year 2010 Cumulative Population	Average Flow Rates (cfs)												
				January	February	March	April	May	June	July	August	September	October	November	December	Annual Average.
Tunnel (Non-Controlled)	TB-1	Taylor Basin	24,491	7.69	7.40	7.36	11.01	8.60	4.00	3.61	3.43	3.04	3.41	5.96	4.11	5.79
	PC-1	Pelham Interceptor North of Goddard Road	51,210	14.77	13.65	13.86	17.82	15.40	7.68	6.94	6.60	6.01	6.75	12.11	8.46	10.82
	DTW Pond 3 West	Detroit Metro Airport	0	1.72	2.14	1.90	4.49	1.98	0.00	0.00	0.00	0.00	0.00	3.14	1.23	1.37
	DMA-2	Detroit Metro Airport	0	1.43	1.78	1.64	3.68	1.71	0.15	0.16	0.15	0.15	0.15	2.48	1.32	1.23
	PD-2	Goddard Interceptor West of Inkster Road	9,532	4.89	5.33	5.50	8.71	5.36	2.11	2.05	1.92	1.86	1.94	5.30	3.43	4.02
	PD-1	Goddard Interceptor West of Allen Road	21,632	8.03	8.30	8.52	11.44	8.56	4.69	4.47	4.13	3.99	4.06	7.91	5.80	6.64
	PB-1	Northline Interceptor West of Fordline Road	10,921	1.86	1.81	2.07	2.07	2.05	1.39	1.43	1.47	1.35	1.36	1.70	1.29	1.65
	PA-4	Eureka Interceptor near Hannan Road	9,712	2.43	2.55	2.73	3.19	2.60	1.73	1.57	1.39	1.34	1.40	1.64	1.60	2.01
	DMA-1	Detroit Metro Airport Connection to the Eureka Interceptor	0	0.67	0.68	0.77	0.80	0.82	0.84	0.86	0.87	0.78	0.78	0.70	0.72	0.77
	PA-3	Eureka Interceptor at Inkster Road	21,084	7.59	7.98	8.55	9.90	8.32	5.69	5.09	4.64	4.60	4.58	5.65	5.47	6.49
	PA-2	Eureka Interceptor at Allen Road	34,601	10.23	10.29	11.04	12.19	10.72	7.02	6.64	6.20	6.09	6.10	8.04	7.30	8.48
	PA-1	Eureka Interceptor West of Fordline Road	38,730	12.49	12.68	13.68	14.57	12.45	7.46	7.12	6.77	6.45	6.44	9.00	7.64	9.71
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	10,659	2.40	2.31	2.54	2.54	2.46	1.77	1.98	2.07	2.01	2.04	2.56	2.20	2.24
	P-1	Pennsylvania Interceptor East of Fort Street	142,992	41.34	40.34	42.35	51.17	43.54	25.01	23.78	22.70	21.55	22.52	35.88	27.76	33.10
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	12,486	2.96	2.57	3.29	2.81	2.90	1.64	1.92	1.81	1.53	1.72	2.94	1.92	2.33
Riverdrive (Controlled)	RR-1	River Rouge CSO Basin Outlet	7,903	3.98	4.26	4.00	4.54	4.98	3.32	3.12	3.00	2.10	1.88	3.06	1.90	3.34
	EC-6	Riverdrive Interceptor South of Southfield Road	21,213	7.19	7.18	7.41	8.32	9.06	6.16	6.09	5.30	4.18	4.09	6.10	4.32	6.28
	RD-1	Riverdrive Interceptor North of Northline Road	73,739	23.13	21.54	23.55	27.26	28.28	15.88	17.21	16.48	12.62	12.26	21.73	11.80	19.29
	SW	On Southgate-Wyandotte Connection	40,635	21.35	17.54	19.21	20.91	22.26	15.34	17.75	14.68	10.97	12.58	18.67	12.55	16.99
	SWB	Southgate-Wyandotte Basin	0	2.13	1.06	1.49	1.59	3.17	0.60	2.06	2.78	0.67	0.69	0.48	0.15	1.42
Tunnel Connection Meters	TSO	Connection to Tunnel at Pelham Basin	0	0.01	0.00	0.29	0.05	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	APO-1	Allen Park Connection to Tunnel at Belmont and Rosedale Road	0	0.00	0.04	0.21	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.03
	APO-2	Allen Park Connection to Tunnel at Belmont and Quandt Road	0	0.00	0.14	0.62	0.23	0.34	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.13
	CHPO	Pelham Interceptor Connection to Tunnel North of Haskell Road	0	0.04	0.15	0.40	0.32	0.29	0.00	0.00	0.03	0.00	0.01	0.20	0.00	0.12
	CPO	Pelham Interceptor Connection to Tunnel South of R.R.	0	0.00	0.03	0.13	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.02
	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	0.02	0.13	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	ER-1	Eureka Relief Sewer Connection to Tunnel at Allen Road	0	0.01	0.04	0.24	0.57	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
	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	0.17	0.18	0.00	0.03
D WTF	P-1+RD-1+RV-1+SW+SWB +Tunnel Connections	End of Interceptor System Meters	269,853	90.96	83.47	91.78	104.92	101.13	58.47	62.71	58.48	47.34	49.95	80.47	54.19	73.58
	IPS+TPS	D WTF	270,052	96.60	89.17	100.77	113.54	109.57	64.87	67.80	64.56	50.96	57.54	89.61	59.21	80.28

Table A-4
Downriver Sewage Disposal System
Average Flow Rates by Meter

System	Meter	Year 2010 Cumulative Population	January 2017			February 2017			March 2017			April 2017			May 2017			June 2017		
			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	24,491	7.69	6.57	173	7.40	5.99	158	7.36	5.91	156	11.01	7.40	195	8.60	5.81	153	4.00	3.90	103
	PC-1	51,210	14.77	12.79	161	13.65	11.45	145	13.86	11.46	145	17.82	12.74	161	15.40	10.77	136	7.68	7.47	94
	DTW Pond 3 West	0	1.72	1.62	-	2.14	2.19	-	1.90	2.00	-	4.49	4.30	-	1.98	1.52	-	0.00	0.00	-
	DMA-2	0	1.43	1.33	-	1.78	1.82	-	1.64	1.69	-	3.68	3.47	-	1.71	1.41	-	0.15	0.15	-
	PD-2	9,532	4.89	4.55	309	5.33	4.97	337	5.50	4.91	333	8.71	7.54	511	5.36	4.36	296	2.11	2.09	141
	PD-1	21,632	8.03	7.55	226	8.30	7.77	232	8.52	7.60	227	11.44	9.76	292	8.56	7.05	211	4.69	4.68	140
	PB-1	10,921	1.86	1.68	100	1.81	1.61	95	2.07	1.72	102	2.07	1.66	98	2.05	1.63	97	1.39	1.36	80
	PA-4	9,712	2.43	2.36	157	2.55	2.40	160	2.73	2.47	164	3.19	2.77	184	2.60	2.35	156	1.73	1.74	115
	DMA-1	0	0.67	0.67	-	0.68	0.68	-	0.77	0.77	-	0.80	0.79	-	0.82	0.81	-	0.84	0.83	-
	PA-3	21,084	7.59	7.28	223	7.98	7.39	227	8.55	7.72	237	9.90	8.56	262	8.32	7.41	227	5.69	5.70	175
	PA-2	34,601	10.23	9.66	180	10.29	9.41	176	11.04	9.73	182	12.19	10.28	192	10.72	9.25	173	7.02	7.04	132
	PA-1	38,730	12.49	11.77	196	12.68	11.57	193	13.68	11.86	198	14.57	12.05	201	12.45	10.13	169	7.46	7.44	124
	P-2	10,659	2.40	2.24	136	2.31	2.15	131	2.54	2.21	134	2.54	2.14	130	2.46	2.14	130	1.77	1.77	107
	P-1 ¹	142,992	41.34	37.61	170	40.34	35.91	162	42.35	36.25	164	51.17	40.54	183	43.54	34.18	155	25.01	24.73	112
	RV-1	12,486	2.96	2.31	119	2.57	2.07	107	3.29	2.20	114	2.81	2.00	104	2.90	2.02	105	1.64	1.55	80
Riverdrive (Controlled)	RR-1	7,903	3.98	3.48	284	4.26	3.75	306	4.00	3.16	258	4.54	3.22	263	4.98	3.52	288	3.32	3.01	246
	EC-6	21,213	7.19	6.44	196	7.18	6.37	194	7.41	5.80	177	8.32	6.64	202	9.06	7.04	215	6.16	5.80	177
	RD-1	73,739	23.13	18.19	159	21.54	16.59	145	23.55	16.99	149	27.26	16.56	145	28.28	17.03	149	15.88	14.10	124
	SW (with sludge depth)	40,635	21.35	18.15	289	17.54	15.07	240	19.21	16.59	264	20.91	15.96	254	22.26	16.24	258	15.34	13.56	216
	SWB	0	2.13	1.03	-	1.06	0.19	-	1.49	2.39	-	1.59	0.76	-	3.17	2.49	-	0.60	0.10	-
Tunnel Connection Meters	TSO	0	0.01	0.00	-	0.00	0.00	-	0.29	0.00	-	0.05	0.00	-	0.06	0.02	-	0.00	0.00	-
	APO-1	0	0.00	0.00	-	0.04	0.00	-	0.21	0.00	-	0.01	0.00	-	0.09	0.00	-	0.00	0.00	-
	APO-2	0	0.00	0.00	-	0.14	0.00	-	0.62	0.00	-	0.23	0.00	-	0.34	0.00	-	0.00	0.00	-
	CHPO	0	0.04	0.00	-	0.15	0.00	-	0.40	0.00	-	0.32	0.00	-	0.29	0.00	-	0.00	0.00	-
	CPO	0	0.00	0.00	-	0.03	0.00	-	0.13	0.00	-	0.00	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	-	0.02	0.00	-	0.13	0.00	-	0.24	0.00	-	0.08	0.00	-	0.00	0.00	-
	ER-1	0	0.01	0.00	-	0.04	0.00	-	0.24	0.00	-	0.57	0.01	-	0.19	0.03	-	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	0.05	0.00	-	0.41	0.00	-	1.89	0.00	-	1.17	0.01	-	0.97	0.05	-	0.00	0.00	-
DWTF	P-1+RV-1+RD-1+SW+SWB +Tunnel Connections	269,853	90.96	77.29	185	83.47	69.83	167	91.78	74.43	178	104.92	75.84	182	101.13	72.00	172	58.47	54.05	129
	IPS+TPS	270,052	96.60	81.30	195	89.17	73.50	176	100.77	80.41	192	113.54	81.19	194	109.57	77.49	185	64.87	60.39	145

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])

Table A-4 continued
Downriver Sewage Disposal System
Average Flow Rates by Meter

System	Meter	Year 2010 Cumulative Population	July 2017			August 2017			September 2017			October 2017			November 2017			December 2017		
			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	24,491	3.61	3.12	82	3.43	2.78	73	3.04	2.90	77	3.41	2.95	78	5.96	4.14	109	4.11	3.78	100
	PC-1	51,210	6.94	5.96	75	6.60	5.33	67	6.01	5.67	72	6.75	5.73	72	12.11	8.64	109	8.46	7.79	98
	DTW Pond 3 West	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	3.14	3.87	-	1.23	1.46	-
	DMA-2	0	0.16	0.15	-	0.15	0.15	-	0.15	0.15	-	0.15	0.15	-	2.48	3.11	-	1.32	1.49	-
	PD-2	9,532	2.05	1.94	131	1.92	1.79	121	1.86	1.82	124	1.94	1.84	125	5.30	5.73	388	3.43	3.58	243
	PD-1	21,632	4.47	4.25	127	4.13	3.86	115	3.99	3.90	117	4.06	3.86	115	7.91	7.92	237	5.80	5.90	176
	PB-1	10,921	1.43	1.33	78	1.47	1.31	77	1.35	1.31	78	1.36	1.33	79	1.70	1.29	76	1.29	1.23	73
	PA-4	9,712	1.57	1.55	103	1.39	1.39	93	1.34	1.34	89	1.40	1.35	90	1.64	1.52	101	1.60	1.60	107
	DMA-1	0	0.86	0.84	-	0.87	0.85	-	0.78	0.78	-	0.78	0.77	-	0.70	0.72	-	0.72	0.70	-
	PA-3	21,084	5.09	4.91	150	4.64	4.46	137	4.60	4.54	139	4.58	4.48	137	5.65	5.21	160	5.47	5.36	164
	PA-2	34,601	6.64	6.34	118	6.20	5.86	109	6.09	5.99	112	6.10	5.94	111	8.04	7.12	133	7.30	7.12	133
	PA-1	38,730	7.12	6.69	112	6.77	6.19	103	6.45	6.32	105	6.44	6.18	103	9.00	7.55	126	7.64	7.41	124
	P-2	10,659	1.98	1.93	117	2.07	1.93	117	2.01	1.98	120	2.04	1.98	120	2.56	2.26	137	2.20	2.16	131
	P-1 ¹	142,992	23.78	21.94	99	22.70	20.26	92	21.55	20.89	94	22.52	20.88	94	35.88	30.18	136	27.76	26.82	121
	RV-1	12,486	1.92	1.69	87	1.81	1.58	82	1.53	1.48	77	1.72	1.57	81	2.94	1.78	92	1.92	1.80	93
Riverdrive (Controlled)	RR-1	7,903	3.12	2.78	227	3.00	2.41	197	2.10	1.98	162	1.88	1.52	125	3.06	2.08	170	1.90	1.82	149
	EC-6	21,213	6.09	5.69	173	5.30	4.57	139	4.18	4.01	122	4.09	3.63	110	6.10	4.51	137	4.32	4.16	127
	RD-1	73,739	17.21	14.46	127	16.48	12.28	108	12.62	12.09	106	12.26	9.87	87	21.73	11.38	100	11.80	10.41	91
	SW (with sludge depth)	40,635	17.75	14.12	225	14.68	11.90	189	10.97	10.06	160	12.58	10.83	172	18.67	12.57	200	12.55	11.27	179
	SWB	0	2.06	0.05	-	2.78	1.53	-	0.67	0.06	-	0.69	0.07	-	0.48	0.00	-	0.15	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	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.06	0.00	-	0.00	0.00	-
	APO-2	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.27	0.00	-	0.00	0.00	-
	CHPO	0	0.00	0.00	-	0.03	0.00	-	0.00	0.00	-	0.01	0.00	-	0.20	0.00	-	0.00	0.00	-
	CPO	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.05	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	0.00	-
	ER-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	-
	PM-1	0	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.17	0.00	-	0.18	0.00	-	0.00	0.00	-
	Total	0	0.00	0.00	-	0.03	0.00	-	0.00	0.00	-	0.18	0.00	-	0.77	0.00	-	0.00	0.00	-
DWTF	P-1+RV-1+RD-1+SW+SWB +Tunnel Connections	269,853	62.71	52.25	125	58.48	47.55	114	47.34	44.58	107	49.95	43.22	104	80.47	55.92	134	54.19	50.31	120
	IPS+TPS	270,052	67.80	56.58	135	64.56	52.66	126	50.96	47.70	114	57.54	48.55	116	89.61	60.34	144	59.21	55.08	132

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])

Appendix B

Data Summaries for 2017 DSDS Meters

METER DATA SUMMARY

This appendix summarizes the DSDS flow monitoring data for 2017, provides average daily flow rate plots for each meter, and includes charts detailing data and meter maintenance issues that occurred during 2017. The flow monitoring data were reviewed and edited as summarized on Table B-1.

Data for each DSDS meter was carried through the analysis with the following exceptions:

- Meter RD-1 pressure depth started to drift slightly around September 2017. The pressure sensor was found to be under reporting depth by about 6-inches during the September 21, 2017 service visit. The pressure sensor was recalibrated to report the correct depth during this service visit. The pressure sensor was again found to be under reporting depth by about 3-inches during the December 13, 2017 service visit. As a result, the ultra-sonic depth was set as the primary depth during the December 13, 2017 service visit. The pressure sensor was replaced on March 29, 2018

Between September 1, 2017 to September 21, 2017 and November 9, 2017 to December 13, 2017 the pressure depth was adjusted by linearly increasing from 0 to 6 inches and 0 to 3 inches, respectively, to account for sensor drift. This adjustment will have a slight impact on estimated monthly average flow rates but will not affect peak wet weather flow rates as the Riverdrive Interceptor is often surcharged under wet weather conditions and the flow rate calculation is uses the full pipe area.

- 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.

Figure B-1
Downriver Sewage Disposal System
2017 Data Flags

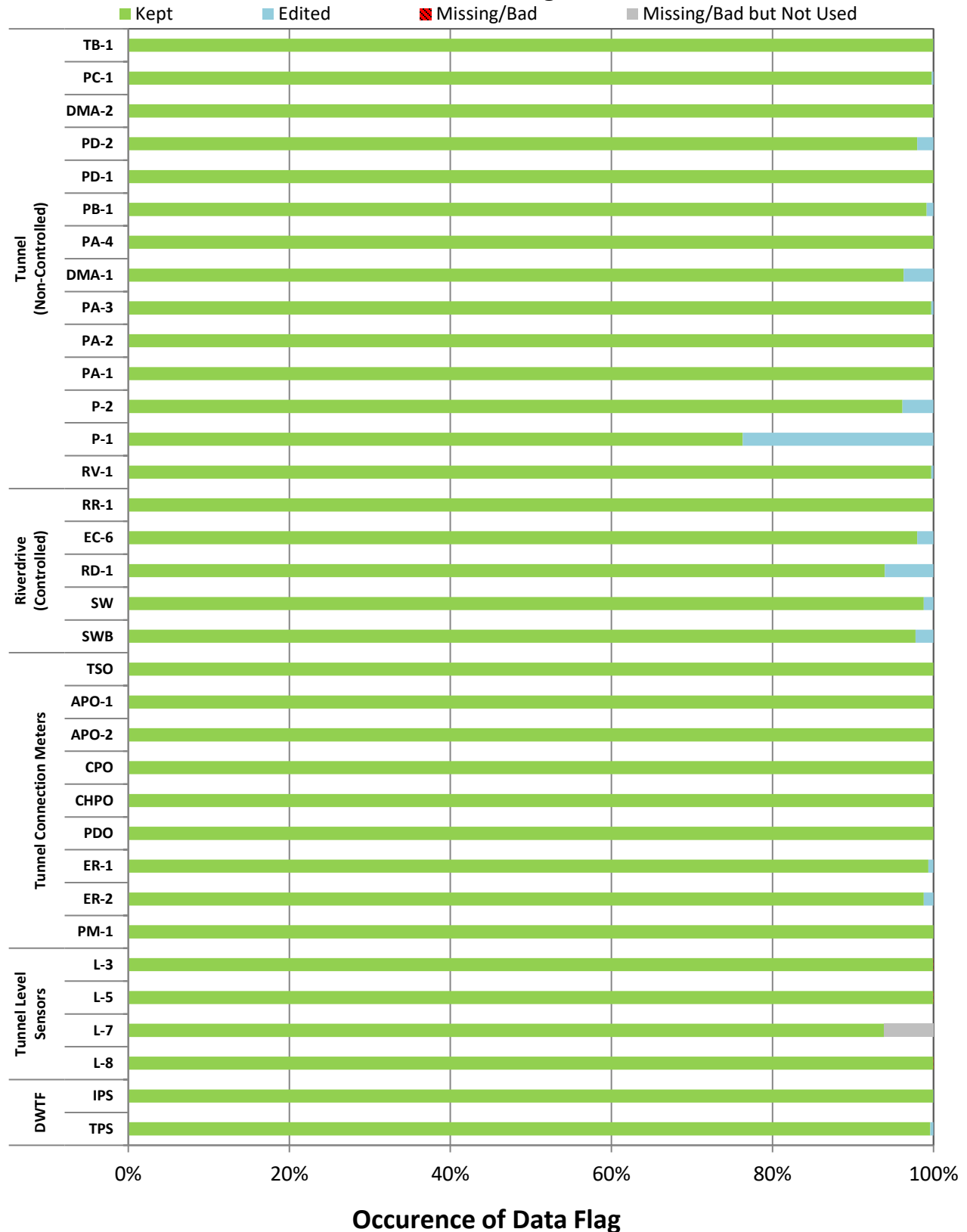


Table B-1
Downriver Sewage Disposal System
Meter Data Review and Fixes for 2017

Meter	Start	Stop	Description of the Problem	Dry Period	Wet Period	Fix
DMA-1	5/2/2017	5/12/2017	Critically low battery prevented meter from storing data	X	X	Diurnal pattern
	5/28/2017	5/31/2017	Debris on sensors	X	X	Diurnal pattern
EC-6	7/19/2017	7/26/2017	Meter locked up and prevented meter from storing data	X	X	Diurnal pattern
ER-2	1/4/2017	1/8/2017	Meter locked up preventing data storage	X	X	Meter was replaced Flow rate assumed to be zero
L-7	1/27/2017	2/17/2017	Meter failed	X	X	Pulled the electronics Replaced electronics and ultrasonic sensor
P-1	1/18/2017	1/25/2017	Velocity path 1 had erratic readings	X	X	Rating curve to depth
	2/11/2017	2/28/2017		X	X	
	3/2/2017	3/3/2017		X		
	3/7/2017	3/8/2017		X		
	3/14/2017	3/20/2017		X	X	
	3/23/2017	3/26/2017		X	X	
	4/1/2017	4/30/2017		X	X	
	5/1/2017	5/21/2017		X	X	
P-2	6/13/2017	6/19/2017	Meter locked up and prevented meter from storing data	X	X	Meter was replaced Diurnal pattern
	7/6/2017	7/13/2017	Data unavailable due to the band being blown out from debris	X	X	The band and sensors were reinstalled Correlation to Meter PB-1
PB-1	10/21/2017	10/23/2017	Fuse malfunctioned	X		Diurnal pattern
	10/26/2017	10/27/2017	Fuse malfunctioned	X		Diurnal pattern
RD-1	11/8/2017	11/18/2017	No velocity or flow rate data available due to low wastewater depths below velocity path 1 height	X	X	Rating curve to depth for periods of low flow
	11/23/2017	12/4/2017		X	X	
SWB	11/21/2017	11/29/2017	Data recorder failed	X	X	Data recorder replaced Flow rate assumed to be zero

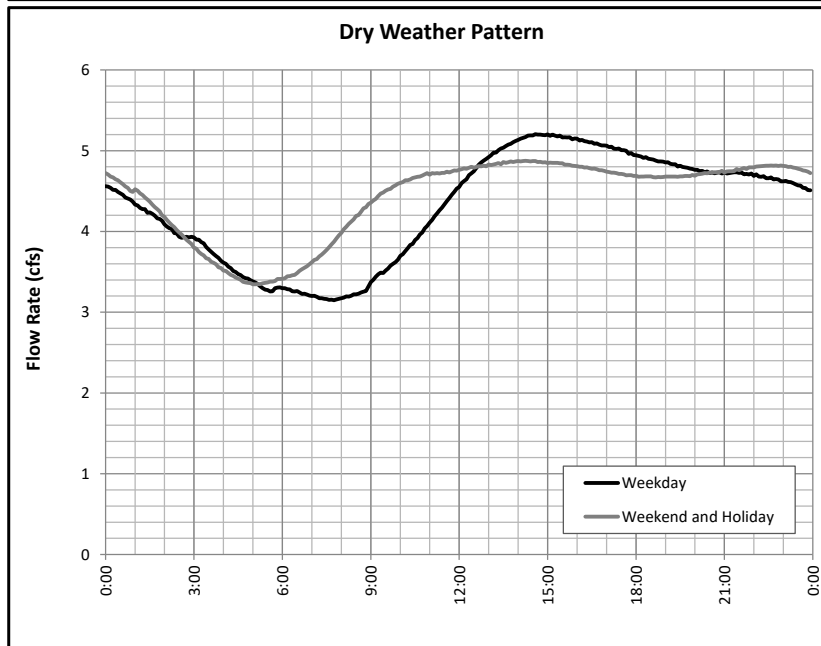
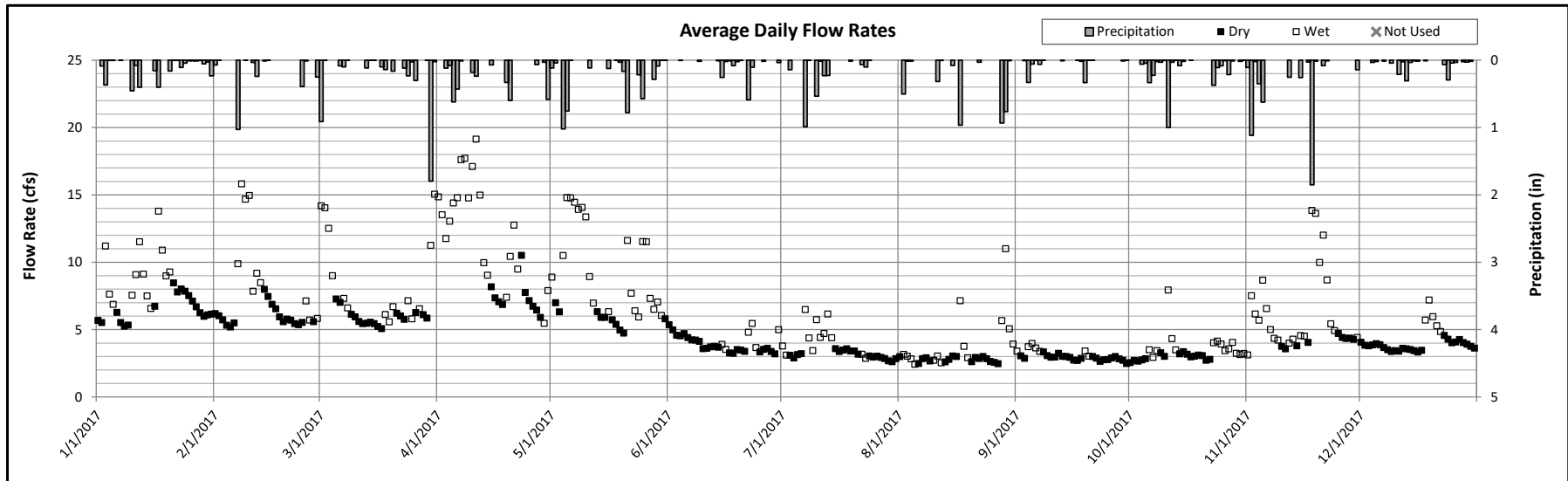
Downriver Sewage Disposal System

Meter Report

Meter: TB-1
Type: Magmeter

Location: Taylor Basin
System Meter Type: Interceptor Flow Meter

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	7.7	154.0	6.6	131.7	18	13
Feb-17	7.4	134.0	6.0	108.3	18	10
Mar-17	7.4	147.5	5.9	118.3	17	14
Apr-17	11.0	213.4	7.4	143.5	10	20
May-17	8.6	172.4	5.8	116.3	10	21
Jun-17	4.0	77.5	3.9	75.5	24	6
Jul-17	3.6	72.4	3.1	62.5	19	12
Aug-17	3.4	68.8	2.8	55.7	17	14
Sep-17	3.0	59.0	2.9	56.3	23	7
Oct-17	3.4	68.3	3.0	59.2	16	15
Nov-17	6.0	115.6	4.1	80.3	9	21
Dec-17	4.1	82.3	3.8	75.7	26	5

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
A	1.03	2/7/2017	2/8/2017	15.0	2/7/2017 13:45	-	-
B	1.96	3/30/2017	3/31/2017	15.4	3/31/2017 5:15	-	-
C	1.94	5/4/2017	5/5/2017	15.0	5/4/2017 16:40	-	-
-	-	-	-	-	-	-	-

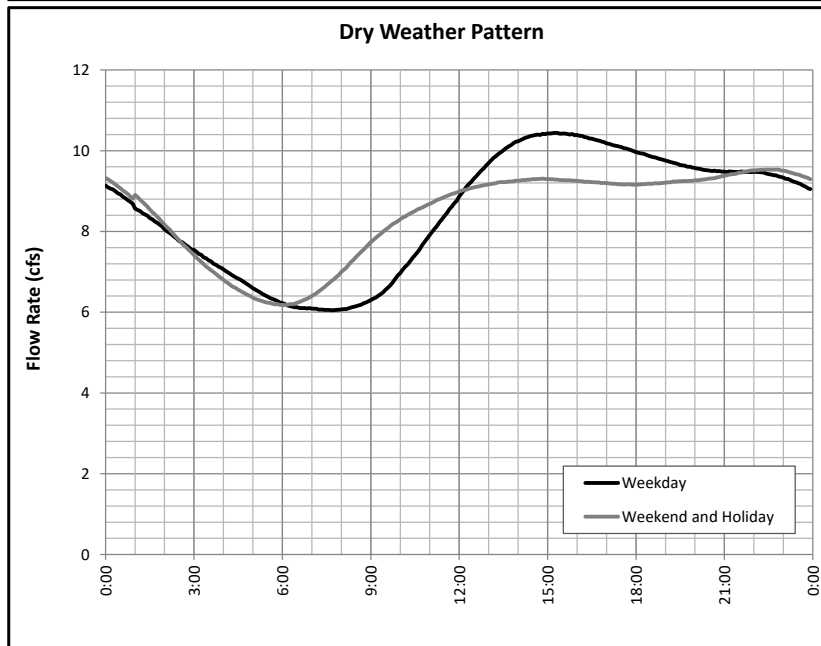
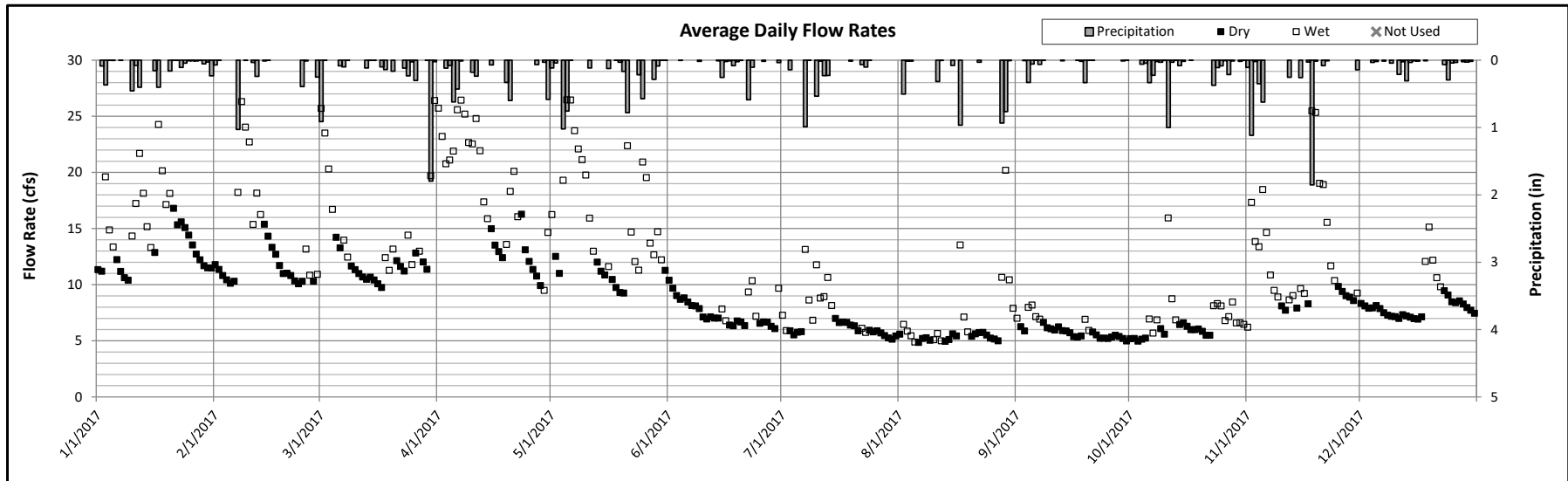
Downriver Sewage Disposal System

Meter Report

Meter: PC-1
Type: Accusonic 7510

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	14.8	295.8	12.8	256.3	18	13
Feb-17	13.7	247.0	11.5	207.3	18	10
Mar-17	13.9	277.7	11.5	229.6	17	14
Apr-17	17.8	345.6	12.7	247.0	10	20
May-17	15.4	308.6	10.8	215.7	10	21
Jun-17	7.7	149.0	7.5	144.9	24	6
Jul-17	6.9	139.1	6.0	119.4	19	12
Aug-17	6.6	132.3	5.3	106.8	17	14
Sep-17	6.0	116.6	5.7	109.9	23	7
Oct-17	6.8	135.3	5.7	114.8	16	15
Nov-17	12.1	234.7	8.6	167.6	9	21
Dec-17	8.5	169.5	7.8	156.0	26	5

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
A	1.03	2/7/2017	2/8/2017	28.1	2/7/2017 13:25	4.1	2/7/2017 20:15
B	1.96	3/30/2017	3/31/2017	28.9	3/30/2017 10:20	4.9	3/30/2017 21:40
C	1.94	5/4/2017	5/5/2017	28.0	5/4/2017 16:55	4.3	5/5/2017 18:25
-	-	-	-	-	-	-	-

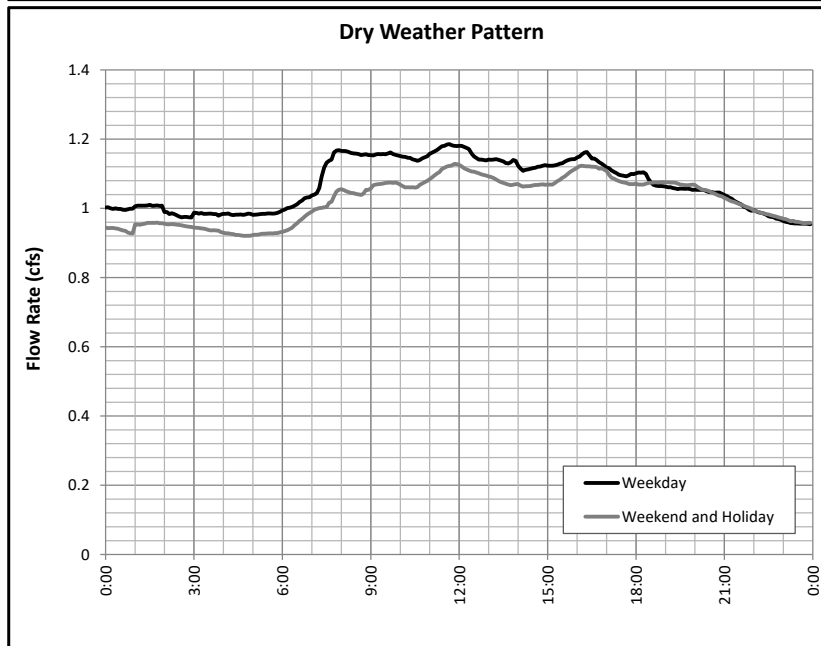
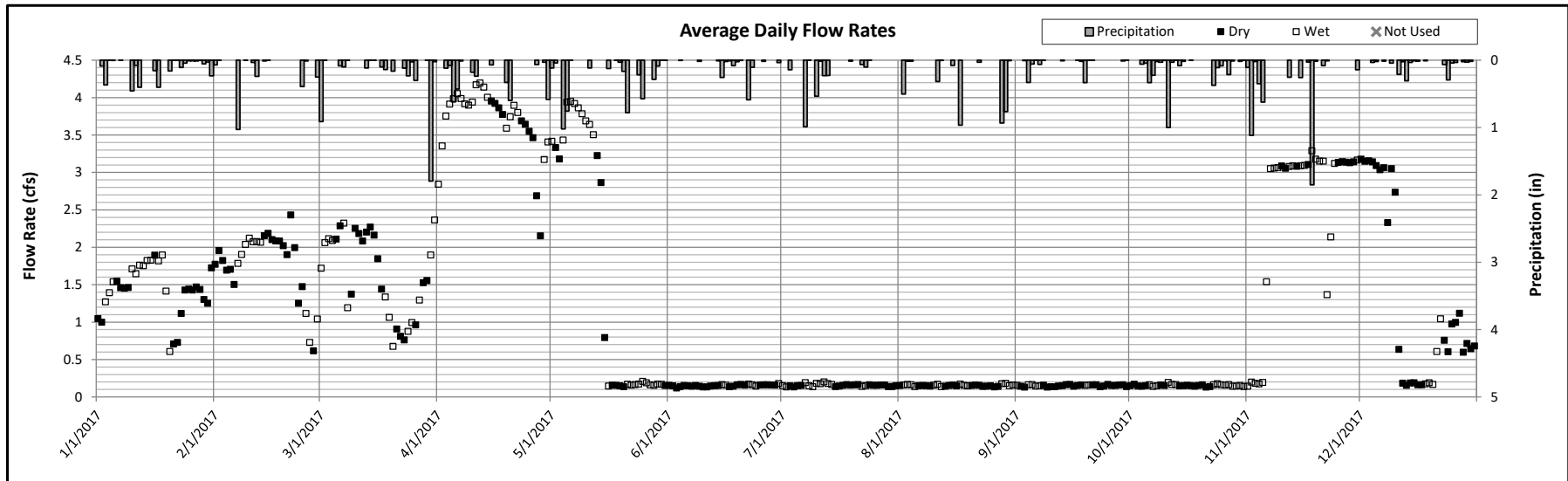
Downriver Sewage Disposal System

Meter Report

Meter: DMA-2
Type: ADS Triton

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	1.4	28.7	1.3	26.6	18	13
Feb-17	1.8	32.1	1.8	32.9	18	10
Mar-17	1.6	32.8	1.7	33.9	17	14
Apr-17	3.7	71.4	3.5	67.3	10	20
May-17	1.7	34.4	1.4	28.3	10	21
Jun-17	0.2	3.0	0.1	2.9	24	6
Jul-17	0.2	3.1	0.2	3.1	19	12
Aug-17	0.2	3.1	0.1	3.0	17	14
Sep-17	0.2	2.9	0.2	2.9	23	7
Oct-17	0.2	3.1	0.2	3.0	16	15
Nov-17	2.5	48.2	3.1	60.4	9	21
Dec-17	1.3	26.4	1.5	29.8	26	5

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
A	1.03	2/7/2017	2/8/2017	2.1	2/7/2017 17:40	0.9	2/7/2017 18:00
B	1.96	3/30/2017	3/31/2017	3.0	4/1/2017 11:50	1.2	3/31/2017 11:05
C	1.94	5/4/2017	5/5/2017	4.3	5/5/2017 16:20	1.3	5/5/2017 18:35
-	-	-	-	-	-	-	-

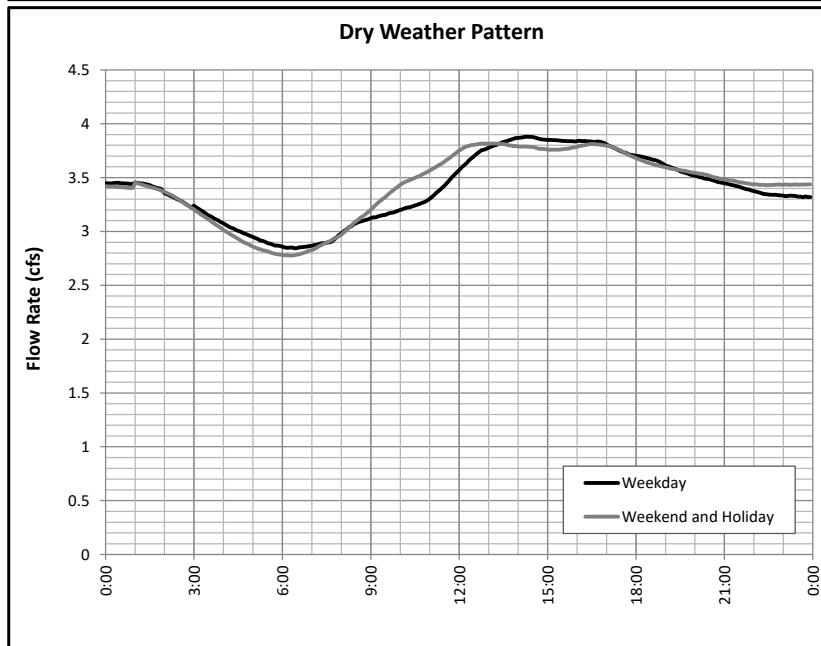
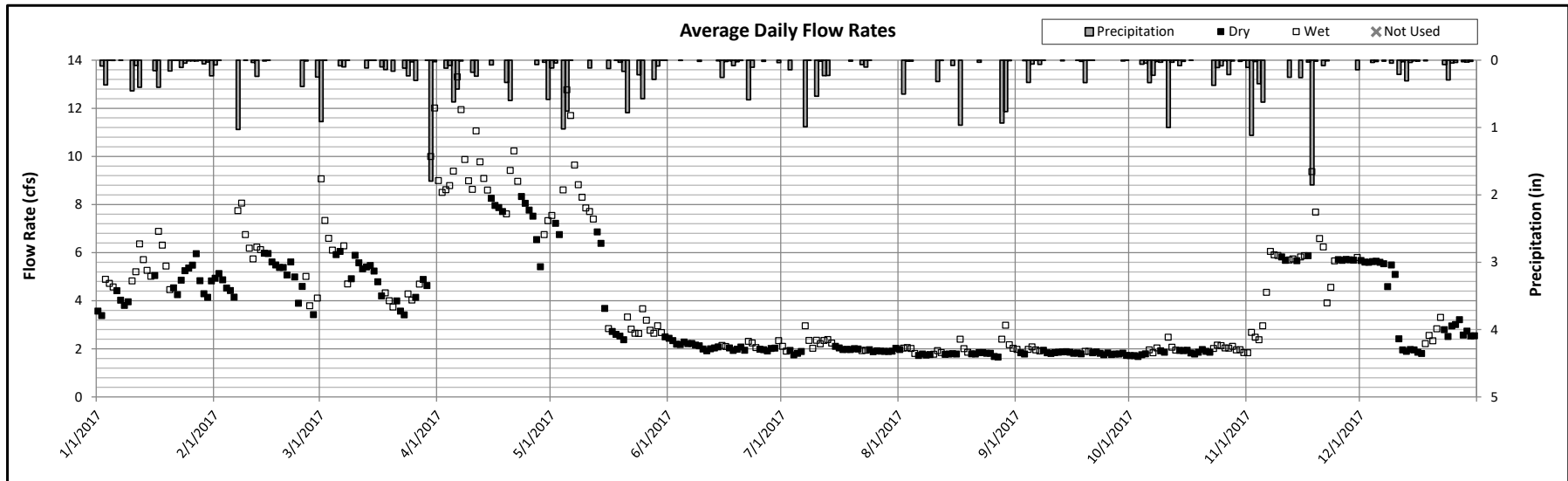
Downriver Sewage Disposal System

Meter Report

Meter: PD-2
Type: Accusonic 7510

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.9	98.0	4.6	91.2	18	13
Feb-17	5.3	96.4	5.0	89.9	18	10
Mar-17	5.5	110.2	4.9	98.3	17	14
Apr-17	8.7	168.9	7.5	146.2	10	20
May-17	5.4	107.4	4.4	87.4	10	21
Jun-17	2.1	40.9	2.1	40.5	24	6
Jul-17	2.1	41.1	1.9	38.8	19	12
Aug-17	1.9	38.6	1.8	35.8	17	14
Sep-17	1.9	36.0	1.8	35.4	23	7
Oct-17	1.9	38.8	1.8	36.9	16	15
Nov-17	5.3	102.8	5.7	111.0	9	21
Dec-17	3.4	68.8	3.6	71.8	26	5

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
A	1.03	2/7/2017	2/8/2017	16.3	2/7/2017 18:15	1.9	2/7/2017 18:35
B	1.96	3/30/2017	3/31/2017	18.4	3/30/2017 22:20	2.1	3/30/2017 22:40
C	1.94	5/4/2017	5/5/2017	17.0	5/5/2017 18:50	1.9	5/5/2017 19:30
-	-	-	-	-	-	-	-

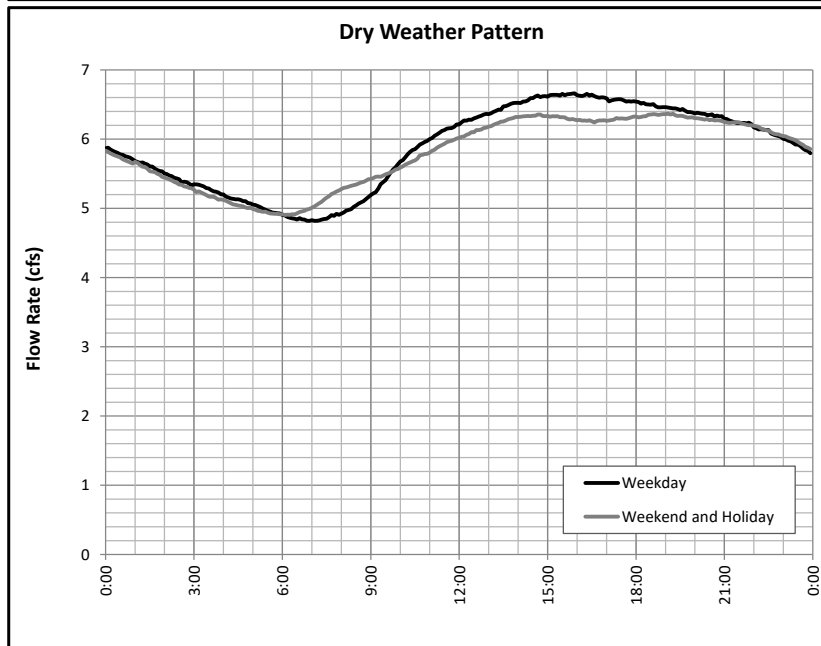
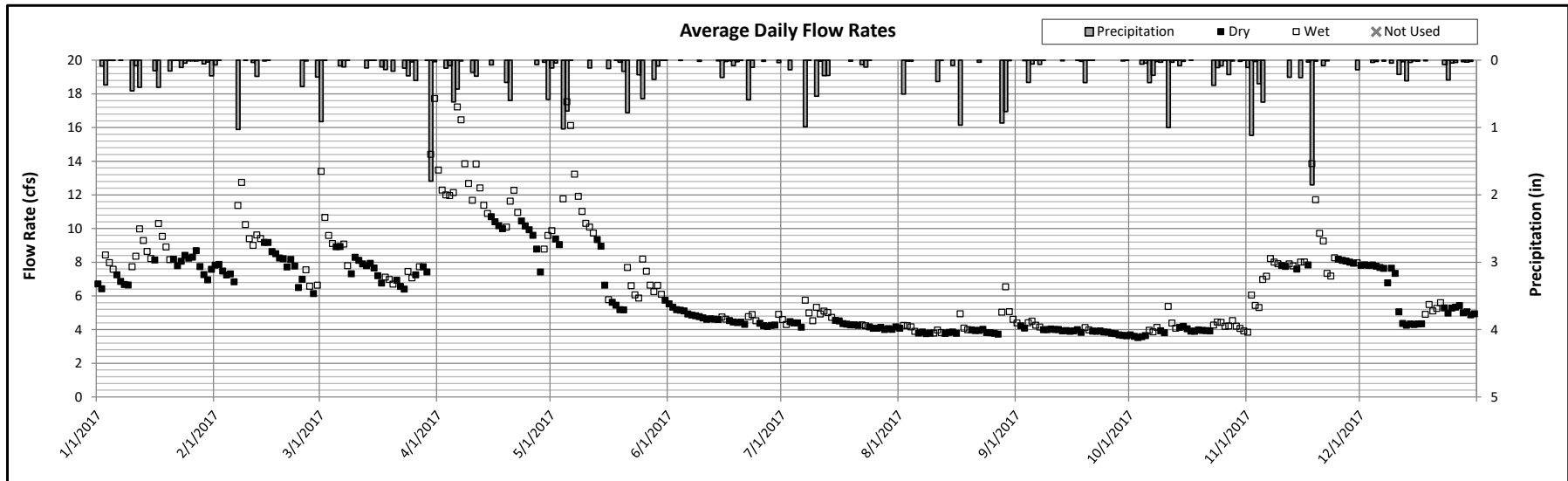
Downriver Sewage Disposal System

Meter Report

Meter: PD-1
Type: ADS Triton+

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	8.0	161.0	7.6	151.3	18	13
Feb-17	8.3	150.2	7.8	140.6	18	10
Mar-17	8.5	170.6	7.6	152.2	17	14
Apr-17	11.4	221.8	9.8	189.2	10	20
May-17	8.6	171.5	7.1	141.3	10	21
Jun-17	4.7	91.0	4.7	90.7	24	6
Jul-17	4.5	89.5	4.2	85.1	19	12
Aug-17	4.1	82.7	3.9	77.2	17	14
Sep-17	4.0	77.3	3.9	75.7	23	7
Oct-17	4.1	81.3	3.9	77.3	16	15
Nov-17	7.9	153.3	7.9	153.6	9	21
Dec-17	5.8	116.1	5.9	118.2	26	5

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
A	1.03	2/7/2017	2/8/2017	20.4	2/7/2017 19:35	2.1	2/7/2017 20:15
B	1.96	3/30/2017	3/31/2017	24.5	3/30/2017 23:15	2.4	3/30/2017 21:10
C	1.94	5/4/2017	5/5/2017	22.4	5/5/2017 19:05	2.2	5/5/2017 18:35
-	-	-	-	-	-	-	-

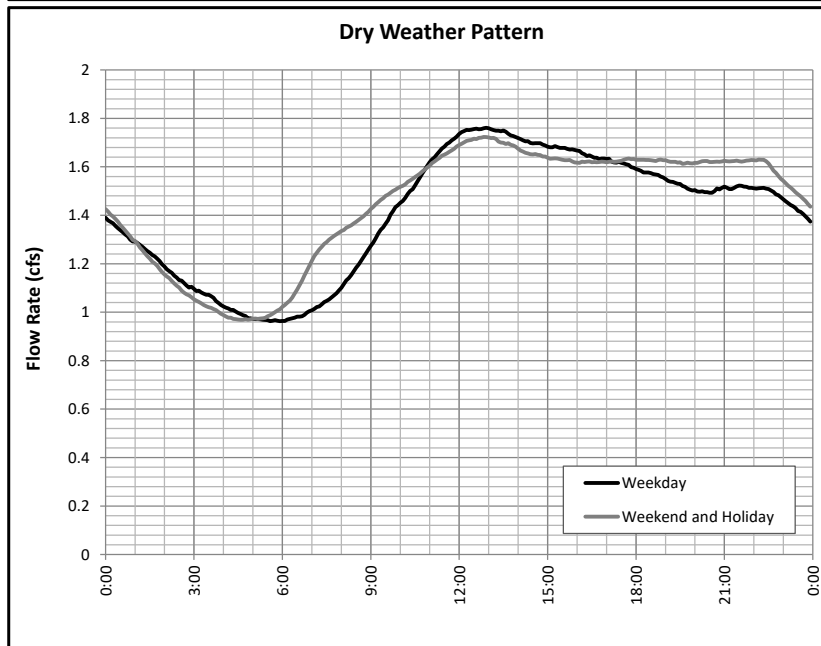
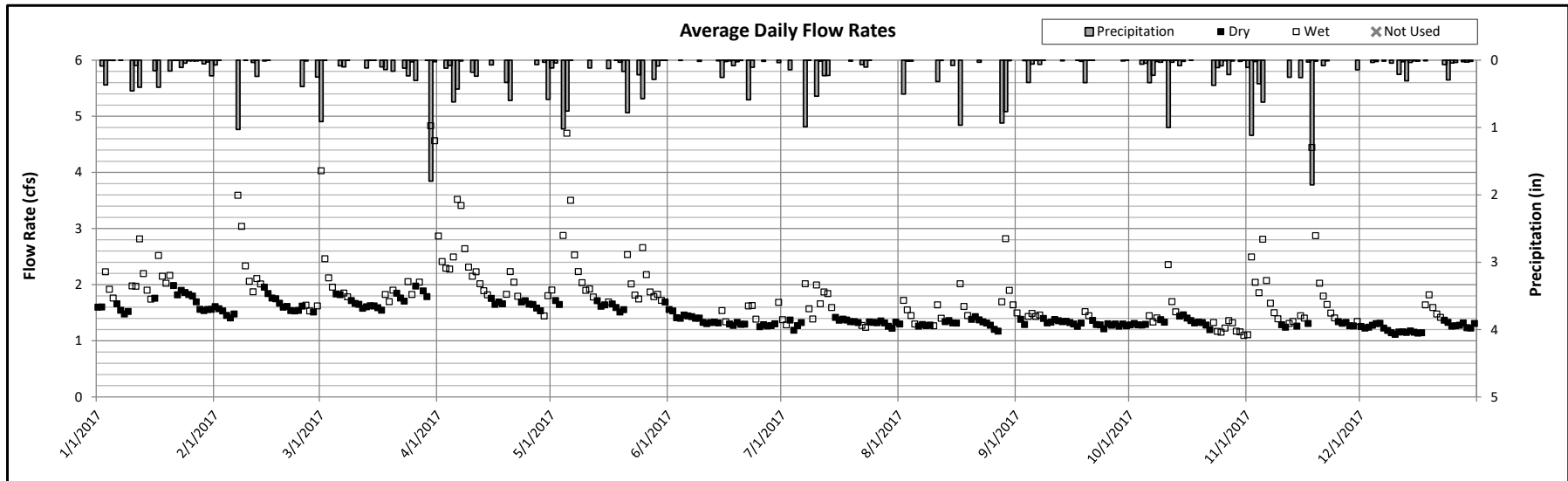
Downriver Sewage Disposal System

Meter Report

Meter: PB-1
Type: ADS Triton

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	1.9	37.3	1.7	33.7	18	13
Feb-17	1.8	32.8	1.6	29.1	18	10
Mar-17	2.1	41.5	1.7	34.5	17	14
Apr-17	2.1	40.1	1.7	32.2	10	20
May-17	2.1	41.1	1.6	32.7	10	21
Jun-17	1.4	27.0	1.4	26.3	24	6
Jul-17	1.4	28.6	1.3	26.5	19	12
Aug-17	1.5	29.5	1.3	26.2	17	14
Sep-17	1.3	26.2	1.3	25.5	23	7
Oct-17	1.4	27.2	1.3	26.7	16	15
Nov-17	1.7	33.0	1.3	25.0	9	21
Dec-17	1.3	25.8	1.2	24.6	26	5

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
A	1.03	2/7/2017	2/8/2017	8.0	2/7/2017 17:20	1.6	2/7/2017 17:45
B	1.96	3/30/2017	3/31/2017	9.7	3/30/2017 20:45	1.7	3/30/2017 21:05
C	1.94	5/4/2017	5/5/2017	7.0	5/5/2017 17:50	1.4	5/5/2017 18:30
-	-	-	-	-	-	-	-

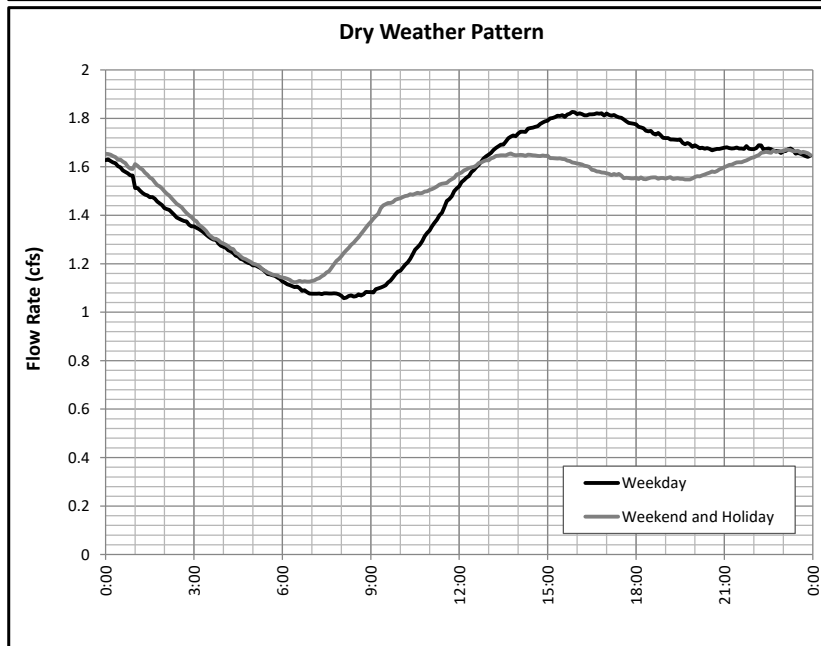
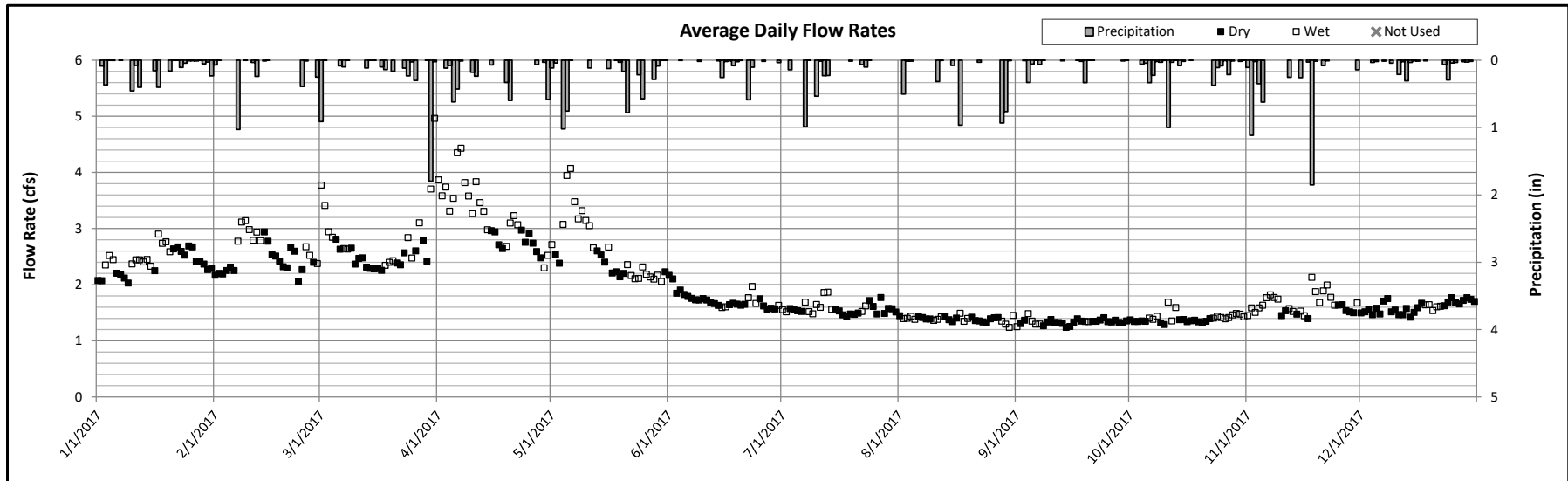
Downriver Sewage Disposal System

Meter Report

Meter: PA-4
Type: ADS Triton+

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	2.4	48.6	2.4	47.3	18	13
Feb-17	2.5	46.1	2.4	43.4	18	10
Mar-17	2.7	54.6	2.5	49.5	17	14
Apr-17	3.2	61.8	2.8	53.7	10	20
May-17	2.6	52.0	2.3	47.0	10	21
Jun-17	1.7	33.5	1.7	33.6	24	6
Jul-17	1.6	31.5	1.5	31.0	19	12
Aug-17	1.4	27.8	1.4	27.9	17	14
Sep-17	1.3	25.9	1.3	25.9	23	7
Oct-17	1.4	28.0	1.4	27.1	16	15
Nov-17	1.6	31.9	1.5	29.5	9	21
Dec-17	1.6	32.1	1.6	32.1	26	5

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
A	1.03	2/7/2017	2/8/2017	3.7	2/7/2017 19:35	1.1	2/7/2017 19:50
B	1.96	3/30/2017	3/31/2017	6.3	3/30/2017 23:25	1.4	3/30/2017 23:25
C	1.94	5/4/2017	5/5/2017	4.8	5/5/2017 22:35	1.2	5/5/2017 20:25
-	-	-	-	-	-	-	-

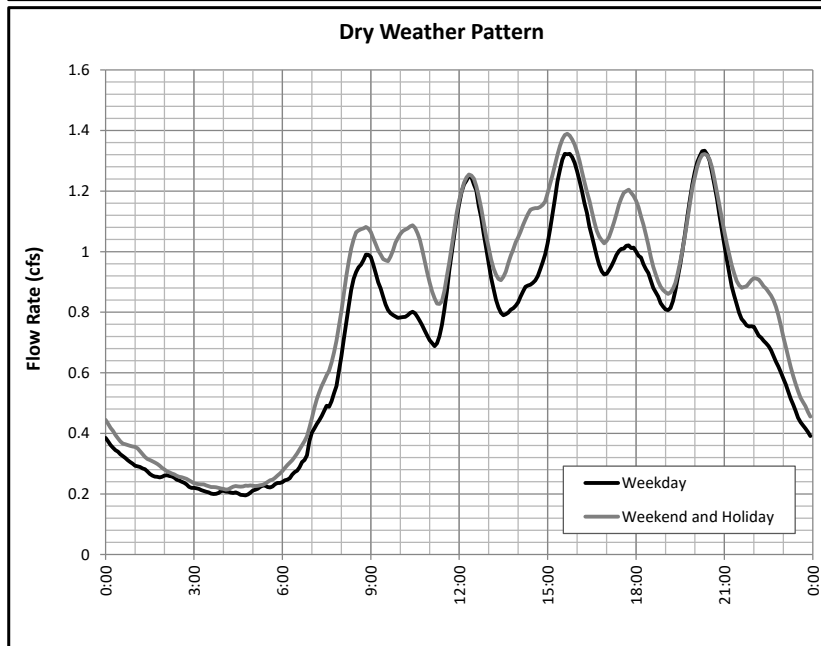
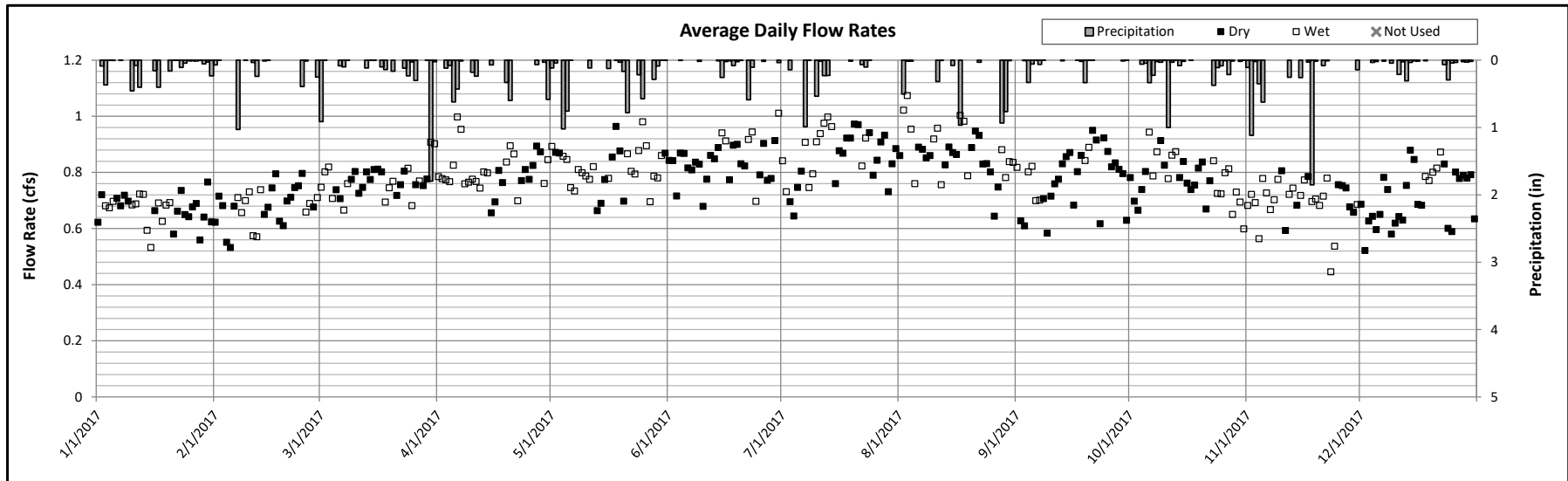
Downriver Sewage Disposal System

Meter Report

Meter: DMA-1
Type: ADS Triton+

Location: Detroit Metro Airport outlet at Eureka
System Meter Type: Interceptor Flow Meter

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	0.7	13.4	0.7	13.4	18	13
Feb-17	0.7	12.3	0.7	12.3	18	10
Mar-17	0.8	15.4	0.8	15.4	17	14
Apr-17	0.8	15.6	0.8	15.3	10	20
May-17	0.8	16.4	0.8	16.3	10	21
Jun-17	0.8	16.3	0.8	16.1	24	6
Jul-17	0.9	17.2	0.8	16.9	19	12
Aug-17	0.9	17.4	0.8	17.0	17	14
Sep-17	0.8	15.1	0.8	15.1	23	7
Oct-17	0.8	15.6	0.8	15.5	16	15
Nov-17	0.7	13.6	0.7	13.9	9	21
Dec-17	0.7	14.4	0.7	14.0	26	5

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
A	1.03	2/7/2017	2/8/2017	1.2	2/7/2017 14:40	0.7	2/7/2017 20:15
B	1.96	3/30/2017	3/31/2017	1.6	4/1/2017 18:50	0.8	3/30/2017 19:50
C	1.94	5/4/2017	5/5/2017	1.4	5/4/2017 13:10	0.6	5/4/2017 12:15
-	-	-	-	-	-	-	-

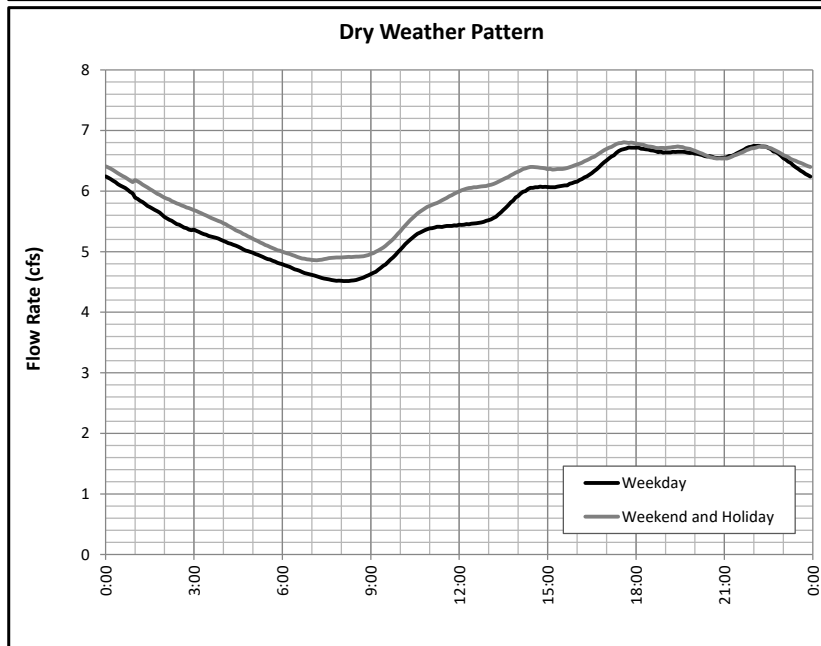
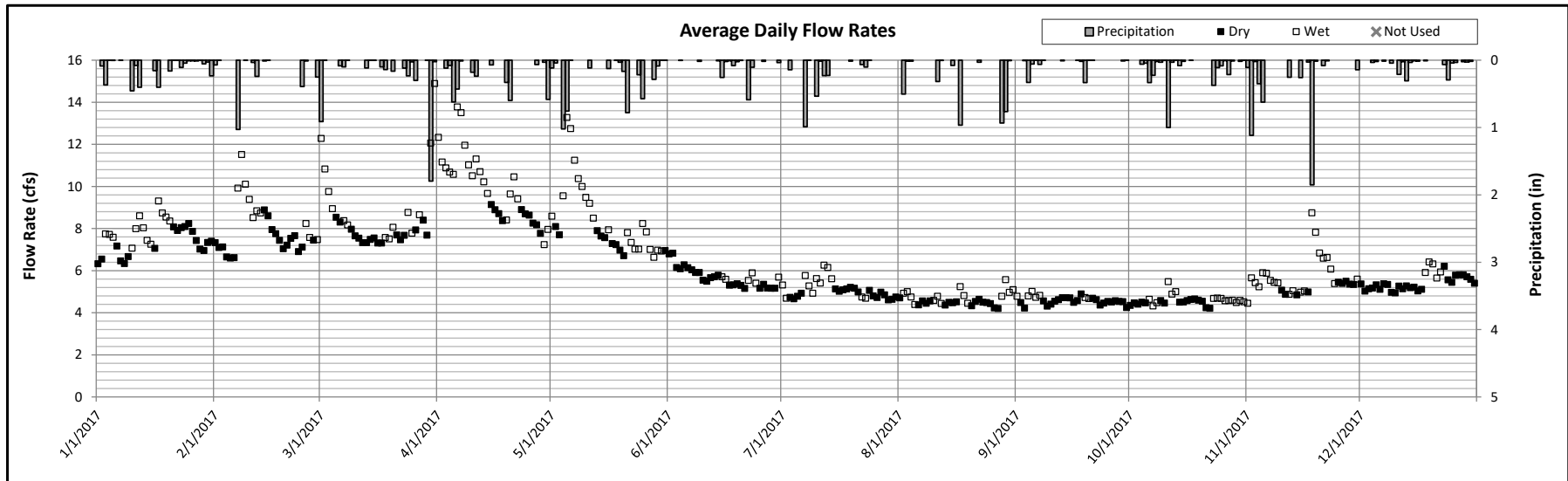
Downriver Sewage Disposal System

Meter Report

Meter: PA-3
Type: Accusonic 7510

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	7.6	152.1	7.3	145.8	18	13
Feb-17	8.0	144.4	7.4	133.7	18	10
Mar-17	8.5	171.2	7.7	154.7	17	14
Apr-17	9.9	192.0	8.6	165.9	10	20
May-17	8.3	166.7	7.4	148.4	10	21
Jun-17	5.7	110.3	5.7	110.6	24	6
Jul-17	5.1	102.0	4.9	98.3	19	12
Aug-17	4.6	92.9	4.5	89.5	17	14
Sep-17	4.6	89.1	4.5	88.0	23	7
Oct-17	4.6	91.7	4.5	89.8	16	15
Nov-17	5.6	109.5	5.2	100.9	9	21
Dec-17	5.5	109.6	5.4	107.4	26	5

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
A	1.03	2/7/2017	2/8/2017	16.5	2/7/2017 18:10	2.1	2/7/2017 18:25
B	1.96	3/30/2017	3/31/2017	18.7	3/30/2017 21:25	2.3	3/30/2017 21:25
C	1.94	5/4/2017	5/5/2017	16.5	5/5/2017 18:15	2.1	5/5/2017 18:35
-	-	-	-	-	-	-	-

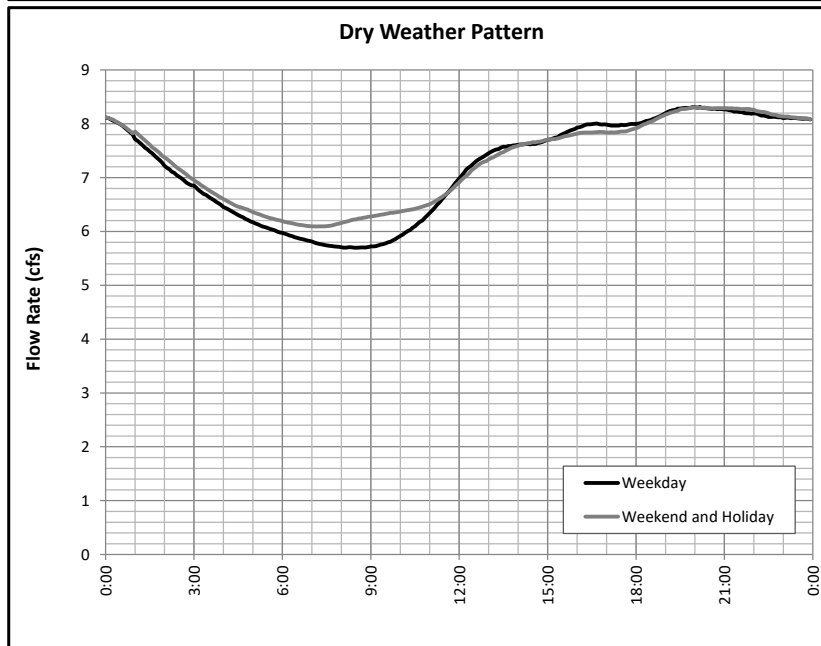
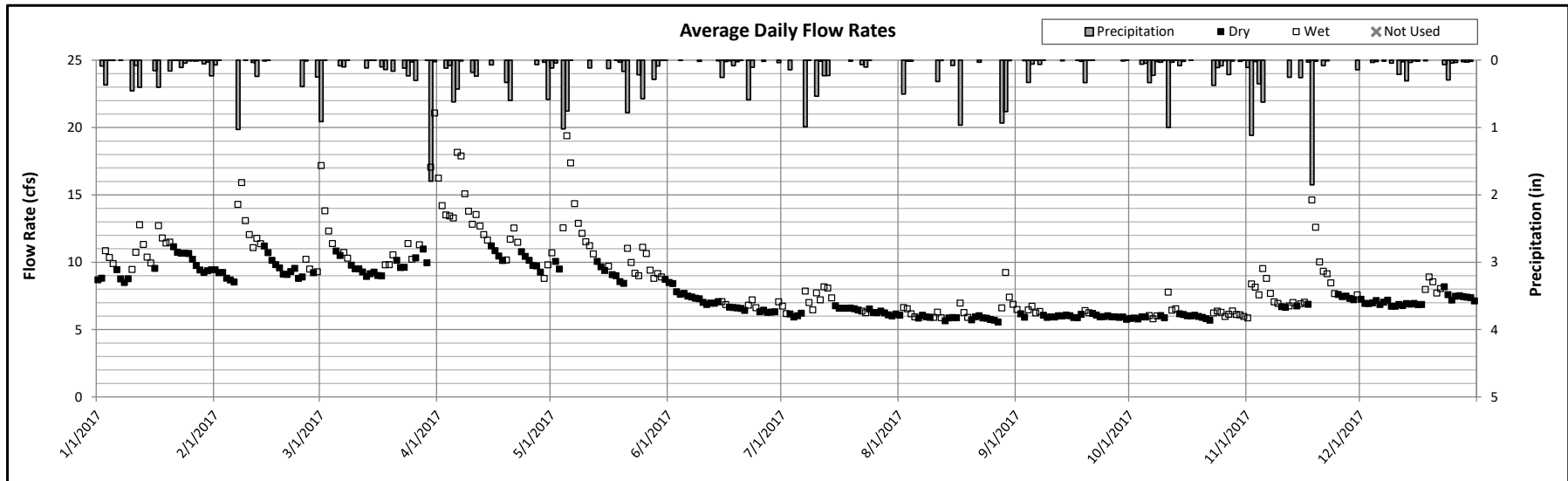
Downriver Sewage Disposal System

Meter Report

Meter: PA-2
Type: ADS Triton+

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	10.2	204.9	9.7	193.6	18	13
Feb-17	10.3	186.1	9.4	170.3	18	10
Mar-17	11.0	221.3	9.7	195.0	17	14
Apr-17	12.2	236.3	10.3	199.2	10	20
May-17	10.7	214.7	9.2	185.3	10	21
Jun-17	7.0	136.1	7.0	136.5	24	6
Jul-17	6.6	133.0	6.3	127.0	19	12
Aug-17	6.2	124.2	5.9	117.3	17	14
Sep-17	6.1	118.1	6.0	116.1	23	7
Oct-17	6.1	122.3	5.9	119.0	16	15
Nov-17	8.0	155.9	7.1	138.0	9	21
Dec-17	7.3	146.3	7.1	142.7	26	5

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
A	1.03	2/7/2017	2/8/2017	25.1	2/7/2017 18:30	3.0	2/7/2017 18:50
B	1.96	3/30/2017	3/31/2017	27.8	3/30/2017 20:35	3.6	3/30/2017 21:35
C	1.94	5/4/2017	5/5/2017	25.4	5/5/2017 18:50	2.8	5/5/2017 19:25
-	-	-	-	-	-	-	-

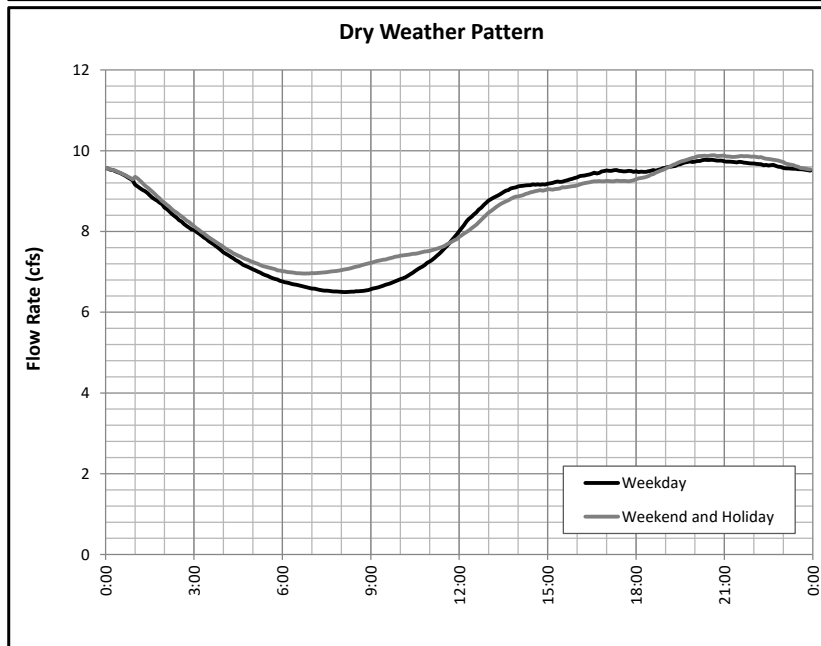
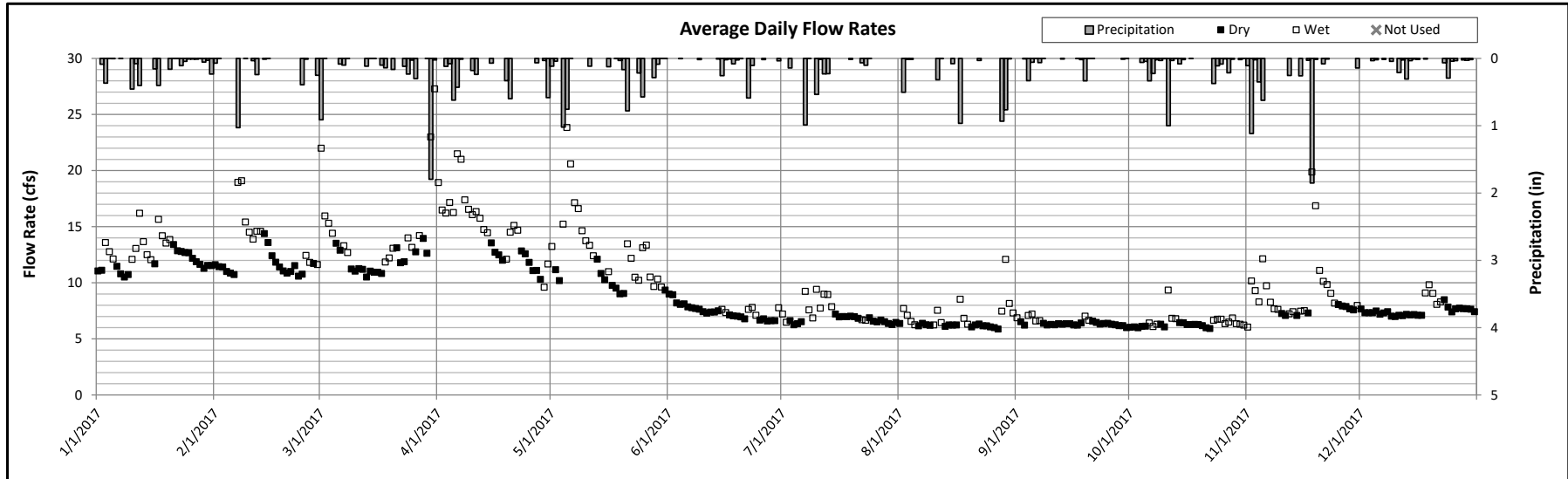
Downriver Sewage Disposal System

Meter Report

Meter: PA-1
Type: ADS Triton+

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	12.5	250.3	11.8	235.9	18	13
Feb-17	12.7	229.5	11.6	209.3	18	10
Mar-17	13.7	274.1	11.9	237.6	17	14
Apr-17	14.6	282.5	12.1	233.6	10	20
May-17	12.5	249.5	10.1	202.9	10	21
Jun-17	7.5	144.7	7.4	144.3	24	6
Jul-17	7.1	142.7	6.7	134.0	19	12
Aug-17	6.8	135.6	6.2	124.0	17	14
Sep-17	6.4	125.0	6.3	122.5	23	7
Oct-17	6.4	128.9	6.2	123.8	16	15
Nov-17	9.0	174.4	7.5	146.3	9	21
Dec-17	7.6	153.1	7.4	148.4	26	5

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
A	1.03	2/7/2017	2/8/2017	33.8	2/7/2017 18:30	2.6	2/7/2017 18:40
B	1.96	3/30/2017	3/31/2017	40.6	3/30/2017 21:05	2.9	3/30/2017 21:15
C	1.94	5/4/2017	5/5/2017	31.9	5/5/2017 18:45	2.5	5/5/2017 19:20
-	-	-	-	-	-	-	-

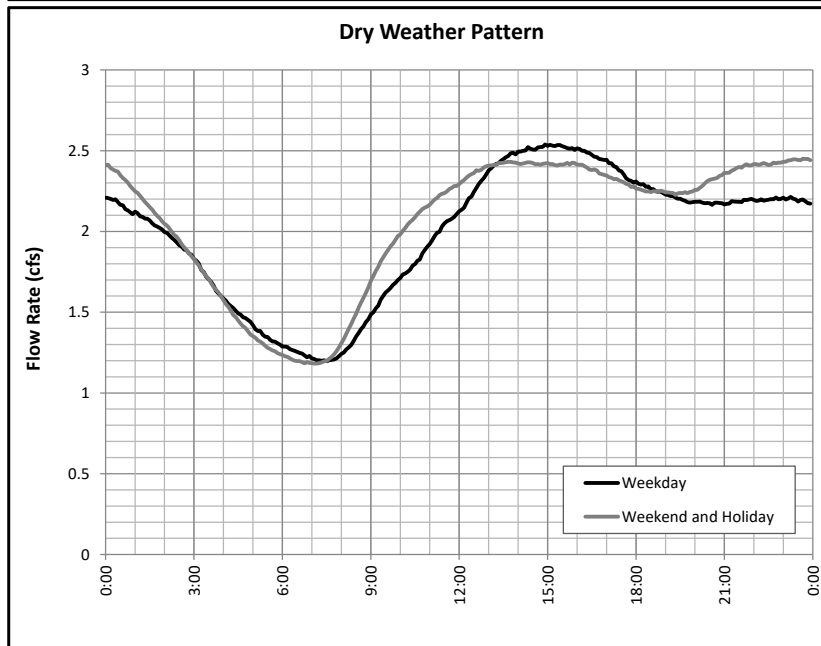
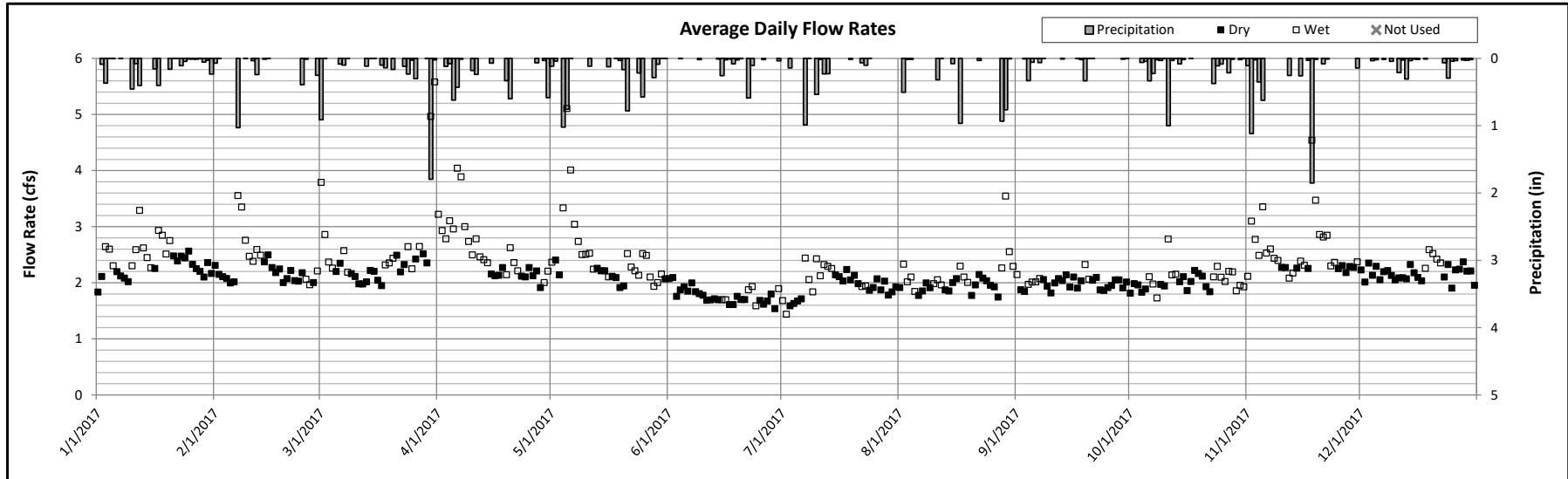
Downriver Sewage Disposal System

Meter Report

Meter: P-2
Type: ADS Triton+

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	2.4	48.2	2.2	45.0	18	13
Feb-17	2.3	41.8	2.2	39.0	18	10
Mar-17	2.5	50.9	2.2	44.2	17	14
Apr-17	2.5	49.2	2.1	41.6	10	20
May-17	2.5	49.3	2.1	42.8	10	21
Jun-17	1.8	34.4	1.8	34.3	24	6
Jul-17	2.0	39.7	1.9	38.6	19	12
Aug-17	2.1	41.5	1.9	38.8	17	14
Sep-17	2.0	38.9	2.0	38.4	23	7
Oct-17	2.0	40.9	2.0	39.7	16	15
Nov-17	2.6	49.6	2.3	43.9	9	21
Dec-17	2.2	44.1	2.2	43.2	26	5

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
A	1.03	2/7/2017	2/8/2017	6.7	2/7/2017 17:30	1.3	2/7/2017 18:00
B	1.96	3/30/2017	3/31/2017	10.7	3/30/2017 21:40	1.7	3/30/2017 22:05
C	1.94	5/4/2017	5/5/2017	8.0	5/5/2017 18:30	1.4	5/5/2017 19:25
-	-	-	-	-	-	-	-

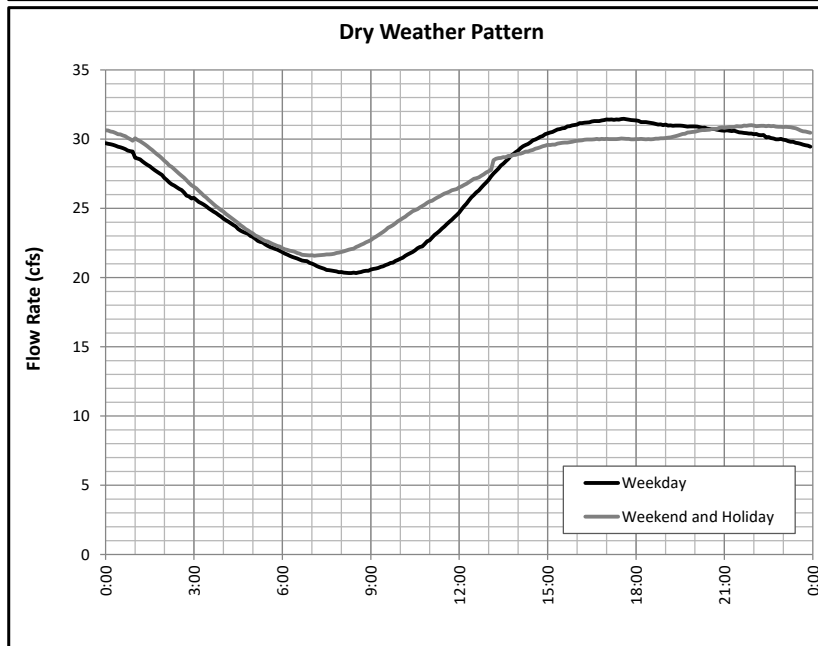
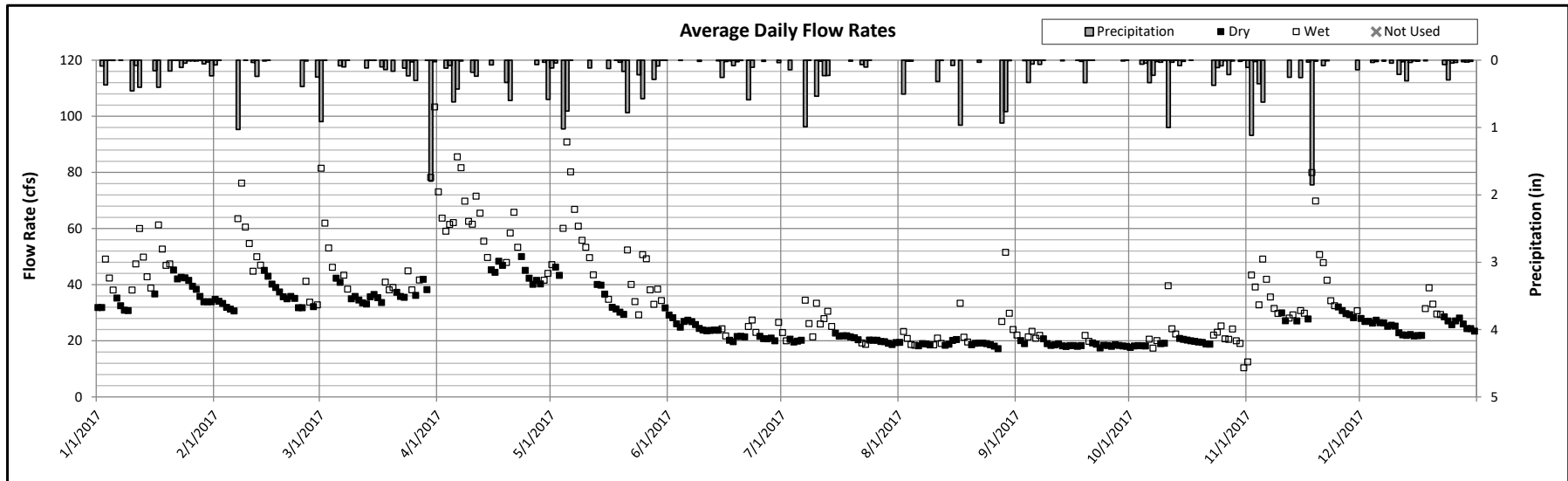
Downriver Sewage Disposal System

Meter Report

Meter: P-1
Type: Accusonic 7510

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	41.1	823.4	36.6	733.6	18	13
Feb-17	40.8	738.4	35.4	641.5	18	10
Mar-17	44.2	885.7	36.5	732.3	17	14
Apr-17	55.9	1084.8	44.4	861.6	10	20
May-17	45.3	907.1	36.1	722.8	10	21
Jun-17	23.8	462.1	23.6	458.0	24	6
Jul-17	22.4	448.8	20.4	409.6	19	12
Aug-17	21.5	431.3	18.9	378.4	17	14
Sep-17	19.3	373.9	18.6	360.1	23	7
Oct-17	20.5	411.4	19.2	384.2	16	15
Nov-17	36.1	700.3	29.1	564.5	9	21
Dec-17	26.3	527.4	25.1	503.7	26	5

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
A	1.03	2/7/2017	2/8/2017	125.4	2/7/2017 18:30	7.1	2/7/2017 18:20
B	1.96	3/30/2017	3/31/2017	136.9	3/30/2017 22:15	7.1	3/30/2017 23:30
C	1.94	5/4/2017	5/5/2017	116.3	5/5/2017 19:50	5.5	5/5/2017 20:35
-	-	-	-	-	-	-	-

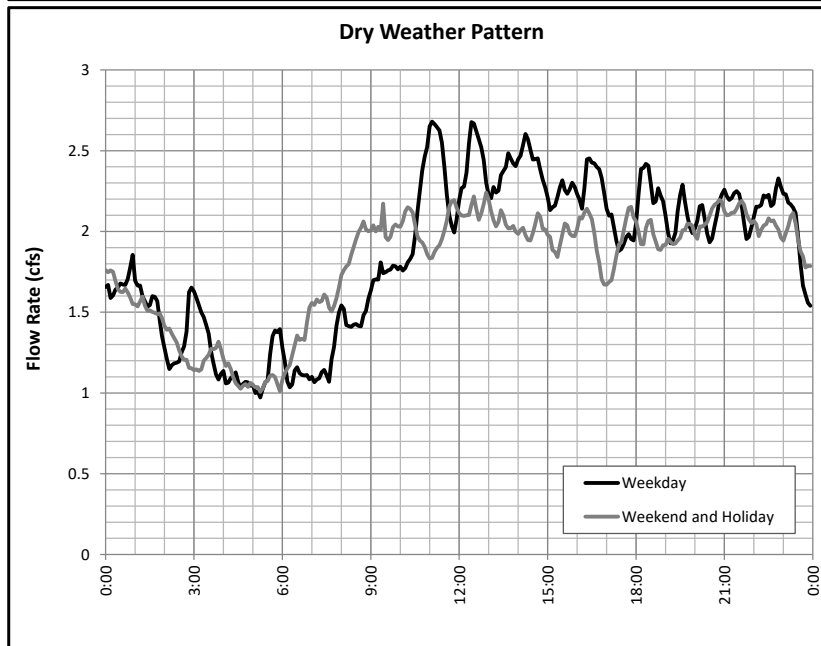
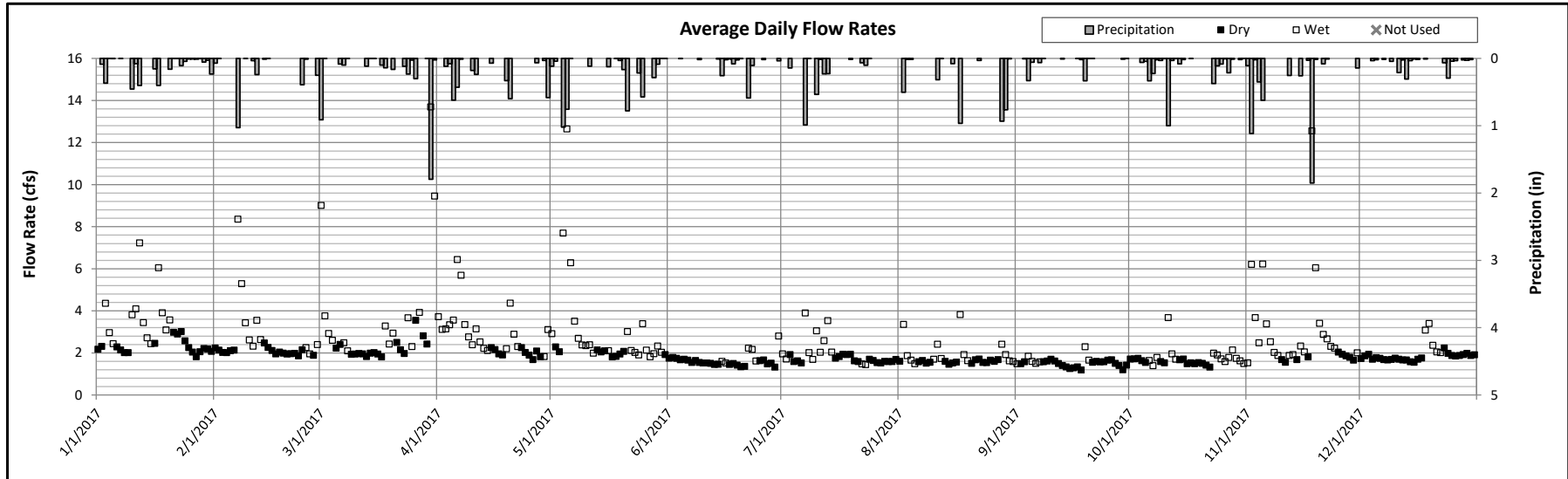
Downriver Sewage Disposal System

Meter Report

Meter: RV-1
Type: Accusonic 7510

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	3.0	59.2	2.3	46.2	18	13
Feb-17	2.6	46.6	2.1	37.4	18	10
Mar-17	3.3	65.9	2.2	44.1	17	14
Apr-17	2.8	54.5	2.0	38.9	10	20
May-17	2.9	58.1	2.0	40.5	10	21
Jun-17	1.6	31.7	1.5	30.0	24	6
Jul-17	1.9	38.5	1.7	33.8	19	12
Aug-17	1.8	36.2	1.6	31.7	17	14
Sep-17	1.5	29.7	1.5	28.7	23	7
Oct-17	1.7	34.4	1.6	31.5	16	15
Nov-17	2.9	57.0	1.8	34.5	9	21
Dec-17	1.9	38.5	1.8	36.0	26	5

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
A	1.03	2/7/2017	2/8/2017	19.0	2/7/2017 14:55	5.8	2/7/2017 18:20
B	1.96	3/30/2017	3/31/2017	32.4	3/30/2017 20:35	4.2	3/30/2017 21:05
C	1.94	5/4/2017	5/5/2017	21.0	5/5/2017 18:35	3.7	5/5/2017 20:35
-	-	-	-	-	-	-	-

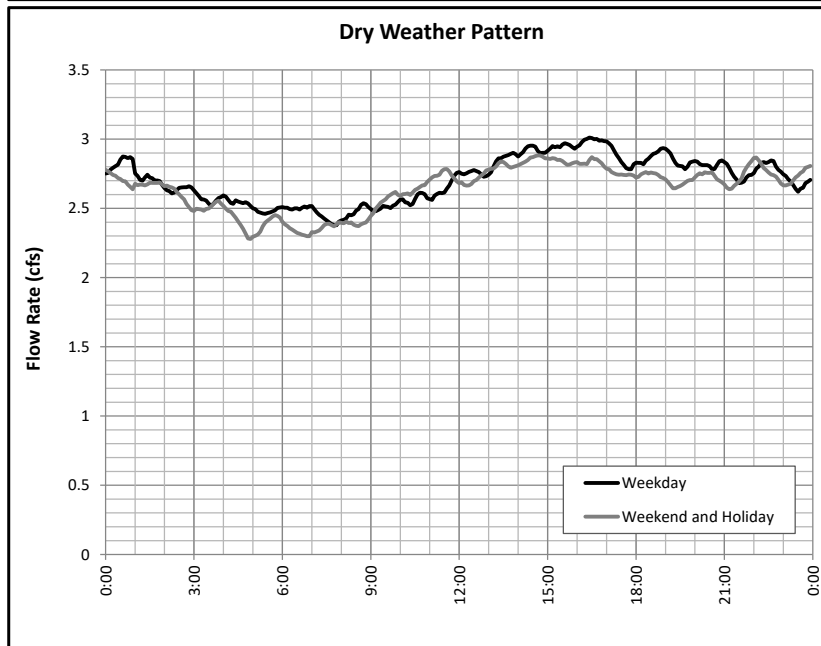
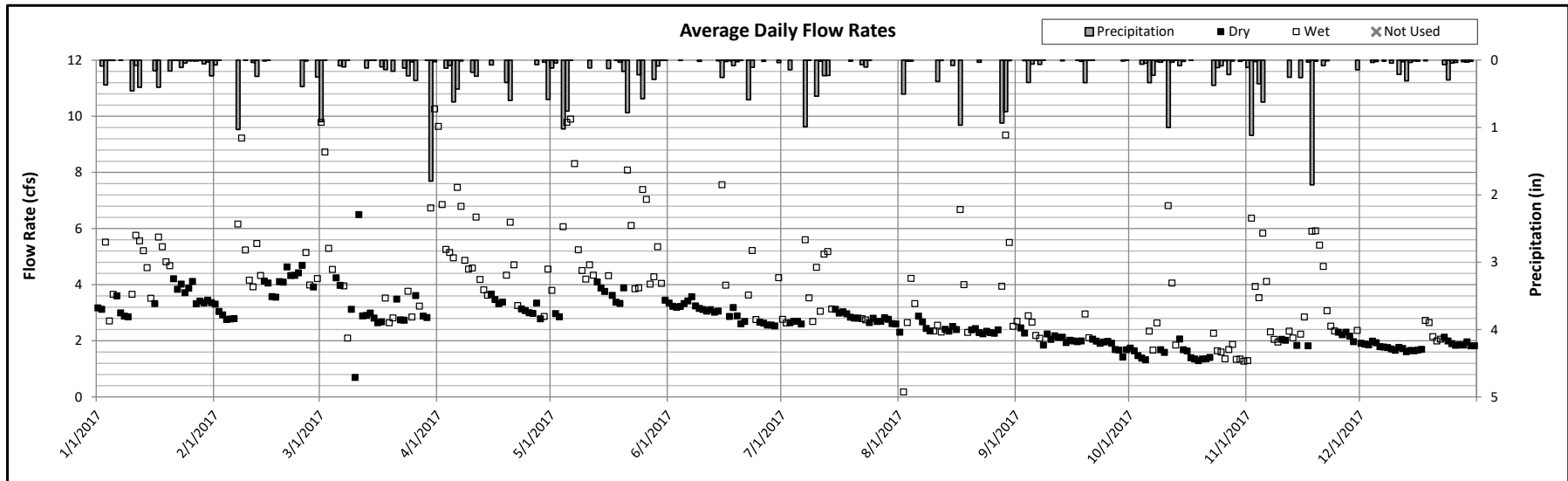
Downriver Sewage Disposal System

Meter Report

Meter: RR-1
Type: ADS Triton

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	4.0	79.7	3.5	69.7	18	13
Feb-17	4.3	77.1	3.7	67.8	18	10
Mar-17	4.0	80.1	3.2	63.3	17	14
Apr-17	4.5	88.1	3.2	62.4	10	20
May-17	5.0	99.8	3.5	70.6	10	21
Jun-17	3.3	64.4	3.0	58.4	24	6
Jul-17	3.1	62.5	2.8	55.7	19	12
Aug-17	3.0	60.0	2.4	48.3	17	14
Sep-17	2.1	40.8	2.0	38.4	23	7
Oct-17	1.9	37.6	1.5	30.5	16	15
Nov-17	3.1	59.4	2.1	40.3	9	21
Dec-17	1.9	38.0	1.8	36.4	26	5

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
A	1.03	2/7/2017	2/8/2017	10.3	2/7/2017 21:35	2.7	2/7/2017 19:45
B	1.96	3/30/2017	3/31/2017	10.8	3/31/2017 15:35	7.5	3/30/2017 23:25
C	1.94	5/4/2017	5/5/2017	10.6	5/5/2017 19:20	3.5	5/5/2017 19:45
-	-	-	-	-	-	-	-

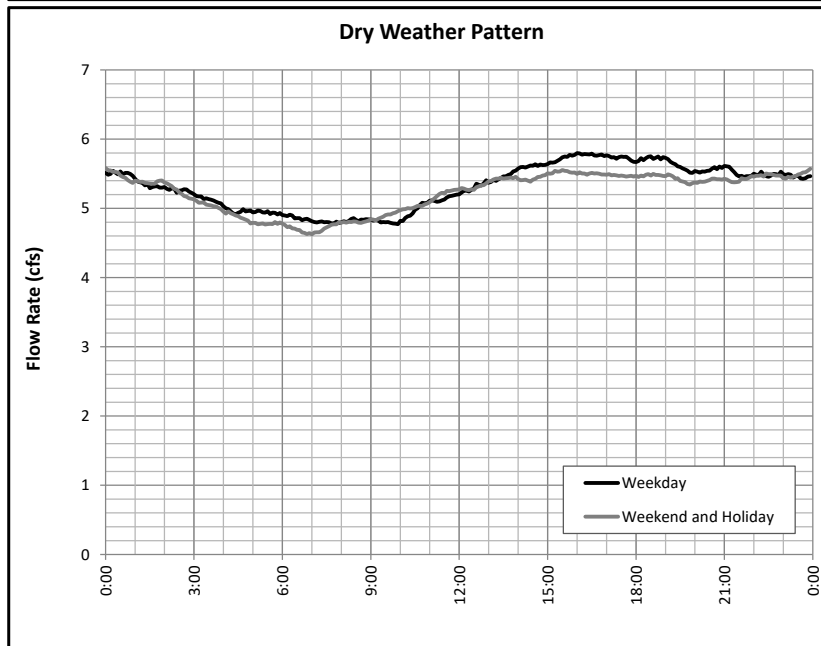
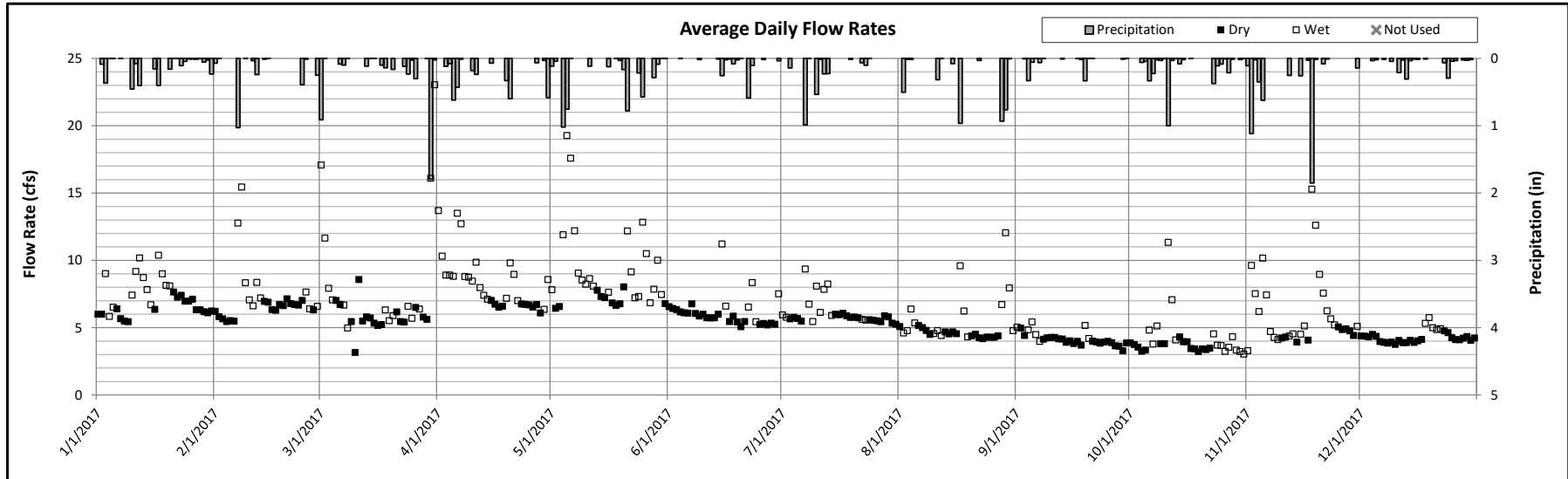
Downriver Sewage Disposal System

Meter Report

Meter: EC-6
Type: ADS Triton

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	7.2	144.1	6.4	129.0	18	13
Feb-17	7.2	130.0	6.4	115.3	18	10
Mar-17	7.4	148.4	5.8	116.2	17	14
Apr-17	8.3	161.3	6.6	128.7	10	20
May-17	9.1	181.5	7.0	141.1	10	21
Jun-17	6.2	119.5	5.8	112.5	24	6
Jul-17	6.1	122.0	5.7	114.1	19	12
Aug-17	5.3	106.1	4.6	91.5	17	14
Sep-17	4.2	81.0	4.0	77.7	23	7
Oct-17	4.1	82.0	3.6	72.6	16	15
Nov-17	6.1	118.3	4.5	87.4	9	21
Dec-17	4.3	86.5	4.2	83.3	26	5

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
A	1.03	2/7/2017	2/8/2017	23.3	2/7/2017 19:10	8.3	2/7/2017 18:25
B	1.96	3/30/2017	3/31/2017	28.6	3/30/2017 22:35	10.7	3/30/2017 21:10
C	1.94	5/4/2017	5/5/2017	24.6	5/5/2017 17:15	7.6	5/5/2017 19:25
-	-	-	-	-	-	-	-

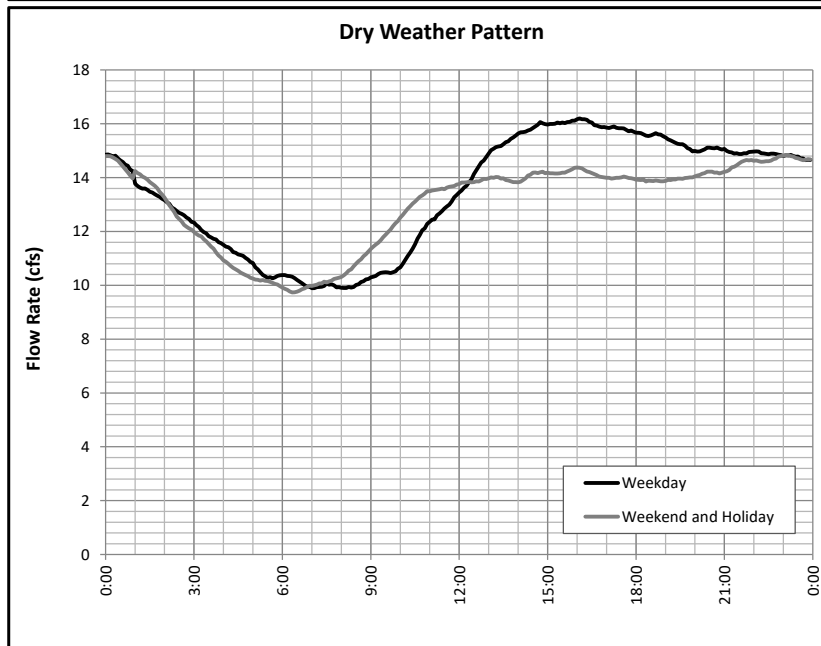
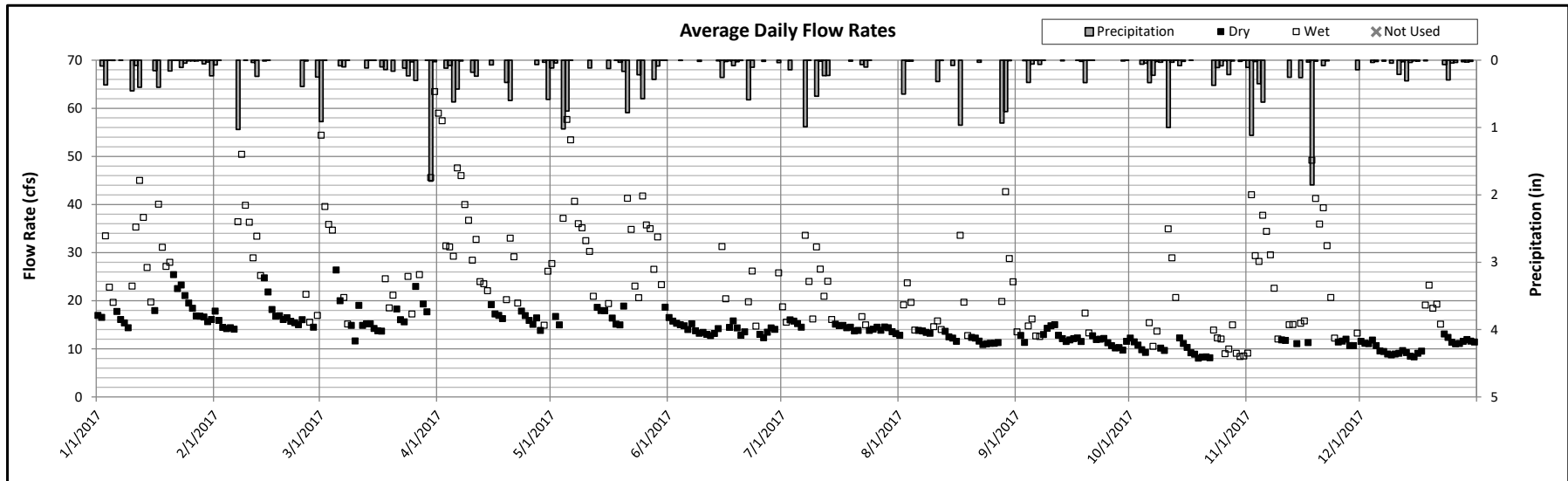
Downriver Sewage Disposal System

Meter Report

Meter: RD-1
Type: Accusonic 7510

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	23.1	463.4	18.2	364.4	18	13
Feb-17	21.5	389.7	16.6	300.2	18	10
Mar-17	23.6	471.9	17.0	340.3	17	14
Apr-17	27.3	528.6	16.6	321.2	10	20
May-17	28.3	566.6	17.0	341.2	10	21
Jun-17	15.9	308.0	14.1	273.4	24	6
Jul-17	17.2	344.7	14.5	289.8	19	12
Aug-17	16.5	330.2	12.3	246.0	17	14
Sep-17	12.6	244.6	12.1	234.3	23	7
Oct-17	12.3	245.7	9.9	197.7	16	15
Nov-17	21.7	421.3	11.4	220.6	9	21
Dec-17	11.8	236.5	10.4	208.6	26	5

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
A	1.03	2/7/2017	2/8/2017	65.5	2/7/2017 20:05	7.5	2/7/2017 18:25
B	1.96	3/30/2017	3/31/2017	69.5	3/30/2017 20:35	8.1	3/30/2017 21:50
C	1.94	5/4/2017	5/5/2017	65.9	5/5/2017 21:15	6.1	5/5/2017 20:45
-	-	-	-	-	-	-	-

Downriver Sewage Disposal System

Meter Report

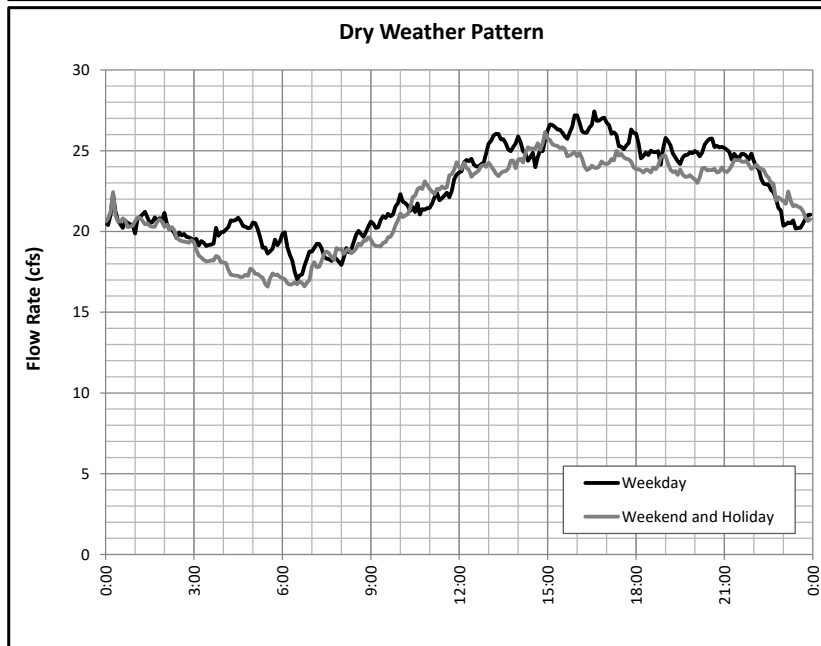
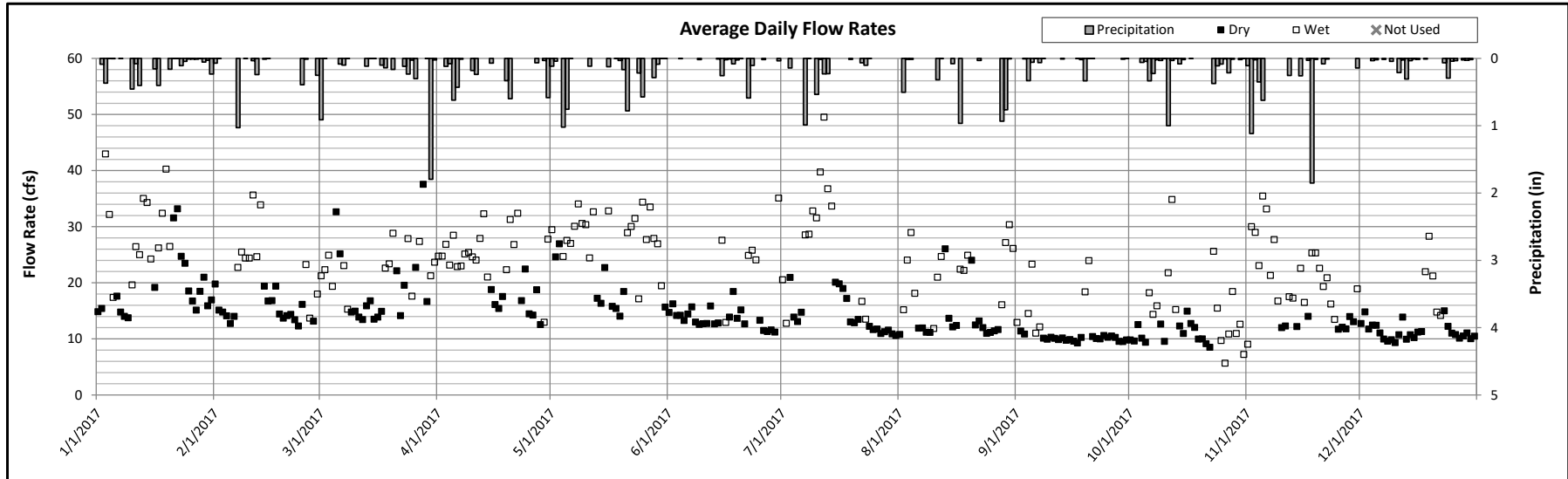
Meter: [SW] + [SWB]

Location: Southgate / Wyandotte

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

Type: Accusonic 7510 (SW) & Telog 3314 (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-17	23.5	470.5	19.2	384.4	18	13
Feb-17	18.6	336.7	15.3	276.2	18	10
Mar-17	20.7	414.6	19.0	380.3	17	14
Apr-17	22.5	436.4	16.7	324.2	10	20
May-17	25.4	509.6	18.7	375.1	10	21
Jun-17	15.9	309.2	13.7	265.0	24	6
Jul-17	19.8	396.8	14.2	283.8	19	12
Aug-17	17.5	350.0	13.4	269.0	17	14
Sep-17	11.6	225.6	10.1	196.2	23	7
Oct-17	13.3	265.9	10.9	218.4	16	15
Nov-17	19.2	371.4	12.6	243.8	9	21
Dec-17	12.7	254.5	11.3	226.0	26	5

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
A	1.03	2/7/2017	2/8/2017	41.6	2/7/2017 9:30	12.4	2/7/2017 18:20
B	1.96	3/30/2017	3/31/2017	29.1	3/30/2017 7:45	10.6	3/30/2017 18:50
C	1.94	5/4/2017	5/5/2017	33.4	5/4/2017 7:50	10.3	5/5/2017 20:35
-	-	-	-	-	-	-	-

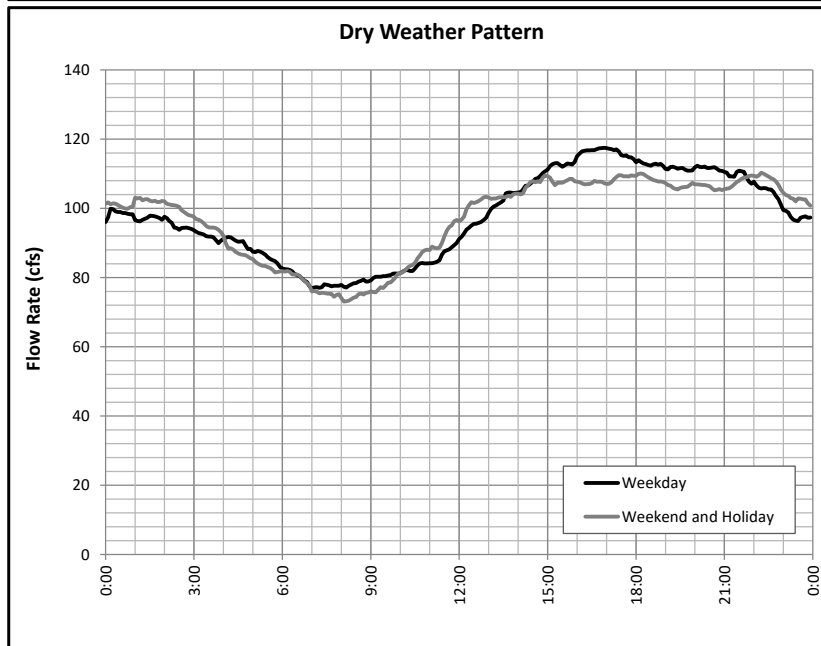
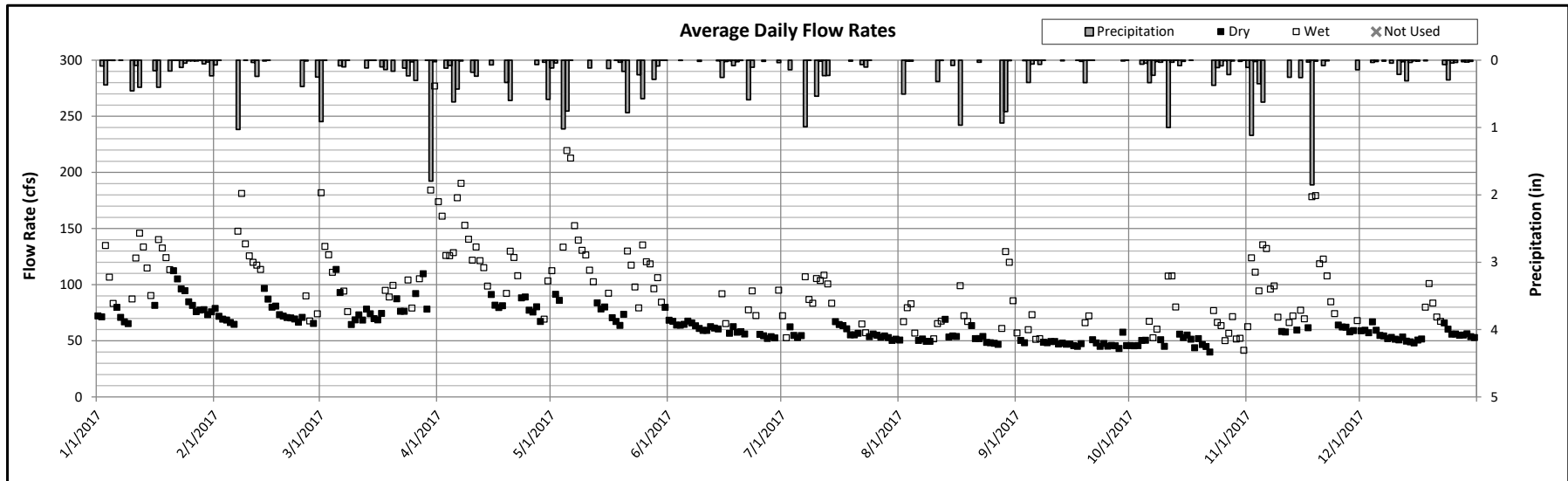
Downriver Sewage Disposal System

Meter Report

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

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

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



Monthly Statistics						
Month	All Days		Dry Days			
	Avg. (cfs)	Vol. (MG)	Avg. (cfs)	Vol. (MG)	# Dry Days	# Wet Days
Jan-17	96.6	1935.4	81.3	1628.8	18	13
Feb-17	89.2	1613.6	73.5	1330.2	18	10
Mar-17	100.8	2019.1	80.4	1611.1	17	14
Apr-17	113.5	2201.5	81.2	1574.2	10	20
May-17	109.6	2195.2	77.5	1552.4	10	21
Jun-17	64.9	1257.8	60.4	1170.8	24	6
Jul-17	67.8	1358.3	56.6	1133.6	19	12
Aug-17	64.6	1293.4	52.7	1055.1	17	14
Sep-17	51.0	988.1	47.7	924.8	23	7
Oct-17	57.5	1152.8	48.5	972.7	16	15
Nov-17	89.6	1737.5	60.3	1169.9	9	21
Dec-17	59.2	1186.2	55.1	1103.6	26	5

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
A	1.03	2/7/2017	2/8/2017	321.3	2/7/2017 19:00	27.6	2/7/2017 18:30
B	1.96	3/30/2017	3/31/2017	346.6	3/30/2017 20:45	23.9	3/30/2017 19:00
C	1.94	5/4/2017	5/5/2017	339.5	5/5/2017 21:05	25.2	5/5/2017 20:30
-	-	-	-	-	-	-	-

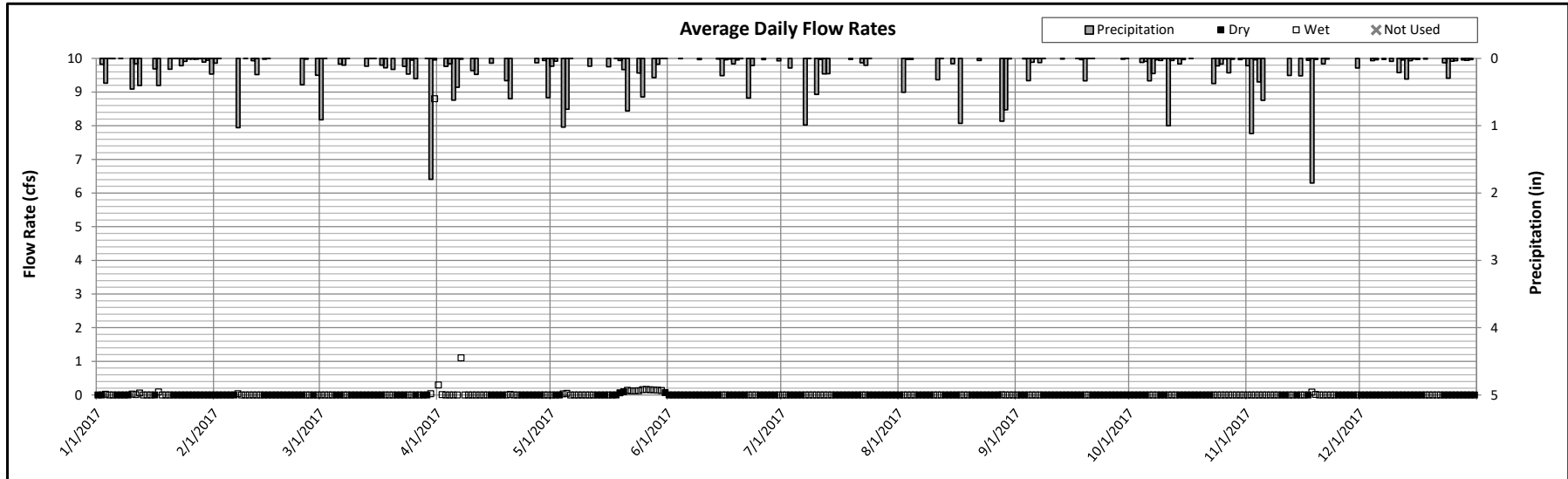
Downriver Sewage Disposal System

Meter Report

Meter: TSO
Type: ADS Triton+

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

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



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-17	0.0	0.1	0.0	0.0	18	13
Feb-17	0.0	0.0	0.0	0.0	18	10
Mar-17	0.3	5.7	0.0	0.0	17	14
Apr-17	0.0	0.9	0.0	0.0	10	20
May-17	0.1	1.1	0.0	0.5	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.0	0.1	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	0.1	2/7/2017 19:30	0.4	2/7/2017 15:05
B	1.96	3/30/2017	3/31/2017	18.5	3/31/2017 5:10	1.9	3/31/2017 6:00
C	1.94	5/4/2017	5/5/2017	0.1	5/5/2017 13:10	0.4	5/5/2017 17:55
-	-	-	-	-	-	-	-

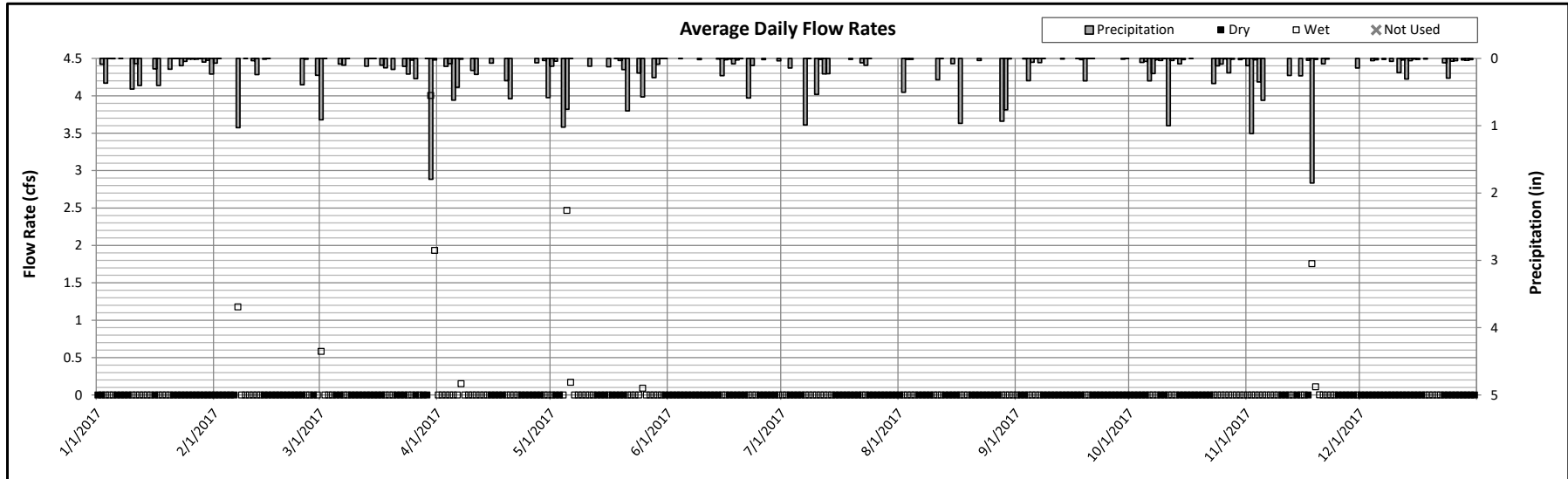
Downriver Sewage Disposal System

Meter Report

Meter: APO-1
Type: Telog 3307

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

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



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-17	0.0	0.0	0.0	0.0	18	13
Feb-17	0.0	0.8	0.0	0.0	18	10
Mar-17	0.2	4.2	0.0	0.0	17	14
Apr-17	0.0	0.1	0.0	0.0	10	20
May-17	0.1	1.8	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.1	1.2	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	6.9	2/7/2017 17:00	9.3	2/7/2017 17:30
B	1.96	3/30/2017	3/31/2017	17.2	3/30/2017 20:35	10.2	3/30/2017 13:35
C	1.94	5/4/2017	5/5/2017	9.9	5/5/2017 16:55	10.2	5/5/2017 17:00
-	-	-	-	-	-	-	-

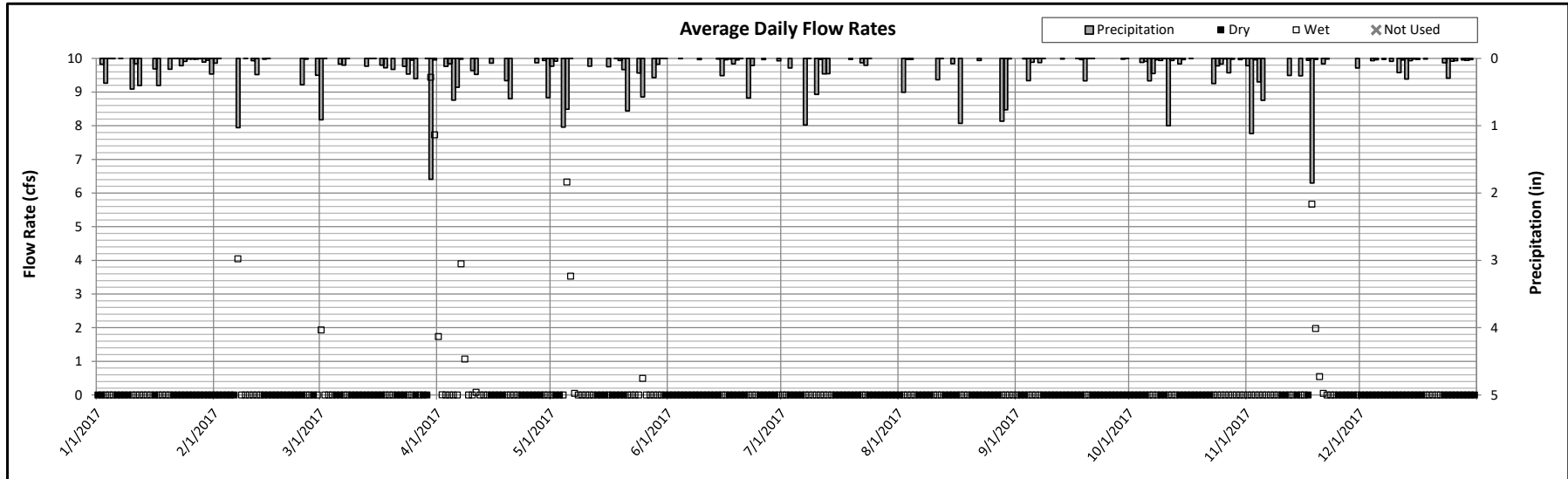
Downriver Sewage Disposal System

Meter Report

Meter: APO-2
Type: Telog 3307

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

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



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-17	0.0	0.0	0.0	0.0	18	13
Feb-17	0.1	2.6	0.0	0.0	18	10
Mar-17	0.6	12.3	0.0	0.0	17	14
Apr-17	0.2	4.4	0.0	0.0	10	20
May-17	0.3	6.7	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.3	5.3	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	16.9	2/7/2017 16:40	4.0	2/7/2017 17:15
B	1.96	3/30/2017	3/31/2017	31.3	3/30/2017 20:15	4.4	3/30/2017 20:45
C	1.94	5/4/2017	5/5/2017	20.0	5/5/2017 16:30	4.1	5/5/2017 16:45
-	-	-	-	-	-	-	-

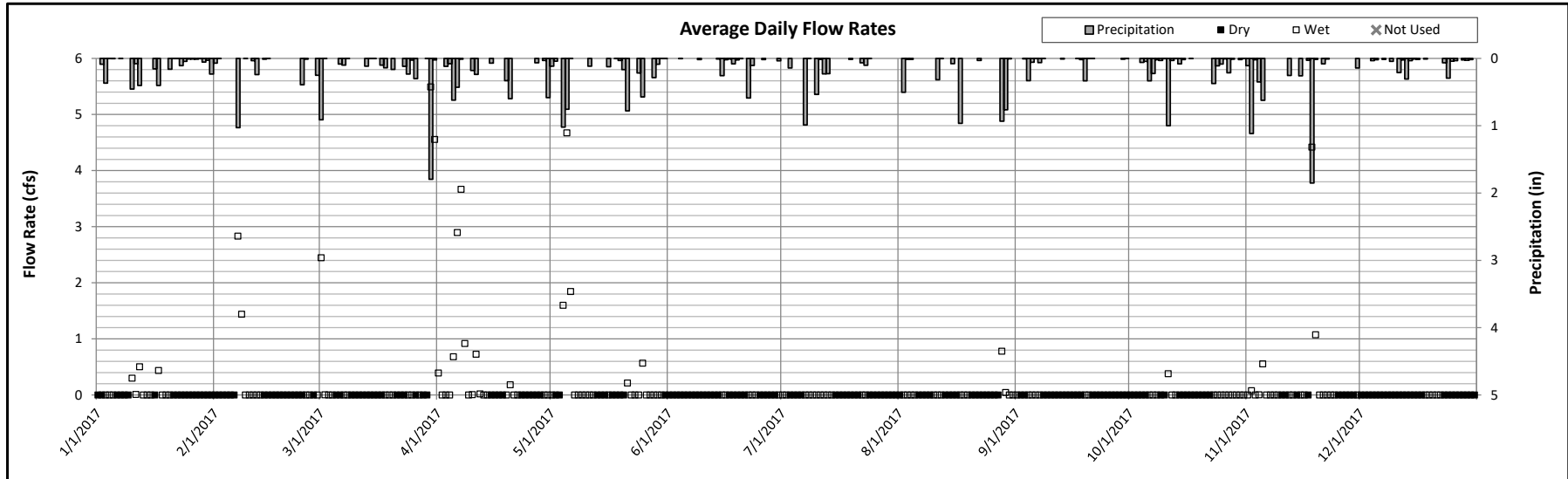
Downriver Sewage Disposal System

Meter Report

Meter: CHPO
Type: Telog 3307

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

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



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-17	0.0	0.8	0.0	0.0	18	13
Feb-17	0.2	2.8	0.0	0.0	18	10
Mar-17	0.4	8.1	0.0	0.0	17	14
Apr-17	0.3	6.1	0.0	0.0	10	20
May-17	0.3	5.8	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.5	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.2	0.0	0.0	16	15
Nov-17	0.2	4.0	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	7.9	2/7/2017 17:10	4.1	2/7/2017 17:30
B	1.96	3/30/2017	3/31/2017	13.9	3/30/2017 20:40	4.3	3/30/2017 20:45
C	1.94	5/4/2017	5/5/2017	9.1	5/5/2017 17:40	4.1	5/5/2017 18:10
-	-	-	-	-	-	-	-

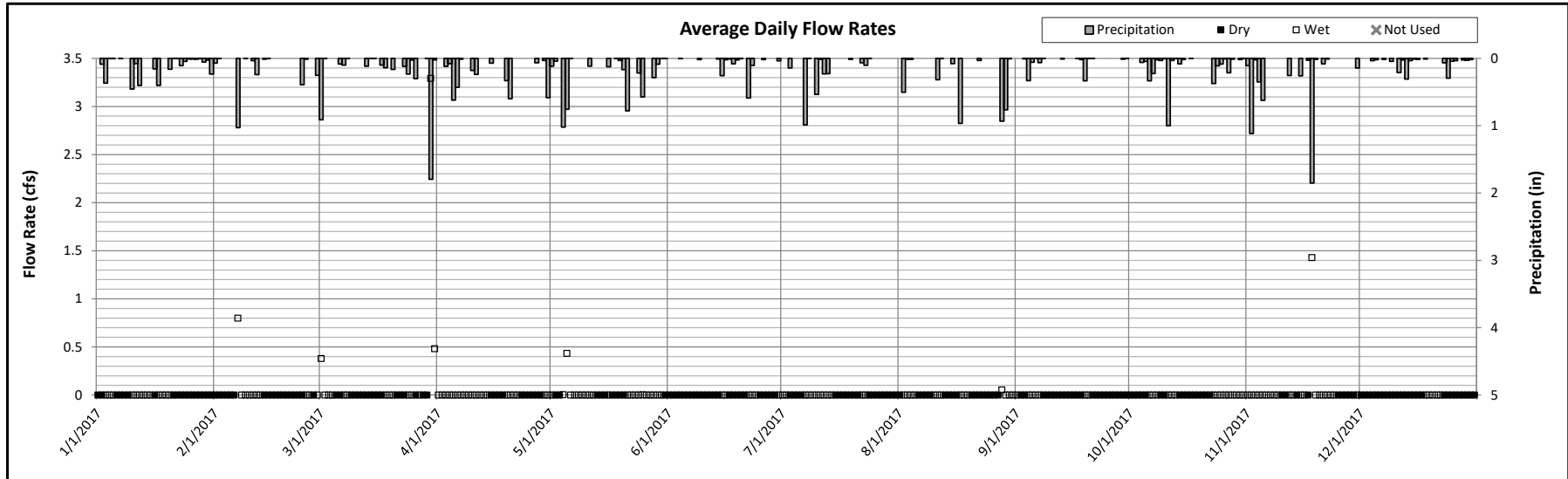
Downriver Sewage Disposal System

Meter Report

Meter: CPO
Type: Telog 3307

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

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



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-17	0.0	0.0	0.0	0.0	18	13
Feb-17	0.0	0.5	0.0	0.0	18	10
Mar-17	0.1	2.7	0.0	0.0	17	14
Apr-17	0.0	0.0	0.0	0.0	10	20
May-17	0.0	0.3	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.0	0.9	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	5.0	2/7/2017 17:20	4.2	2/7/2017 17:35
B	1.96	3/30/2017	3/31/2017	14.4	3/30/2017 20:45	4.4	3/30/2017 21:10
C	1.94	5/4/2017	5/5/2017	2.8	5/5/2017 16:50	4.1	5/5/2017 17:10
-	-	-	-	-	-	-	-

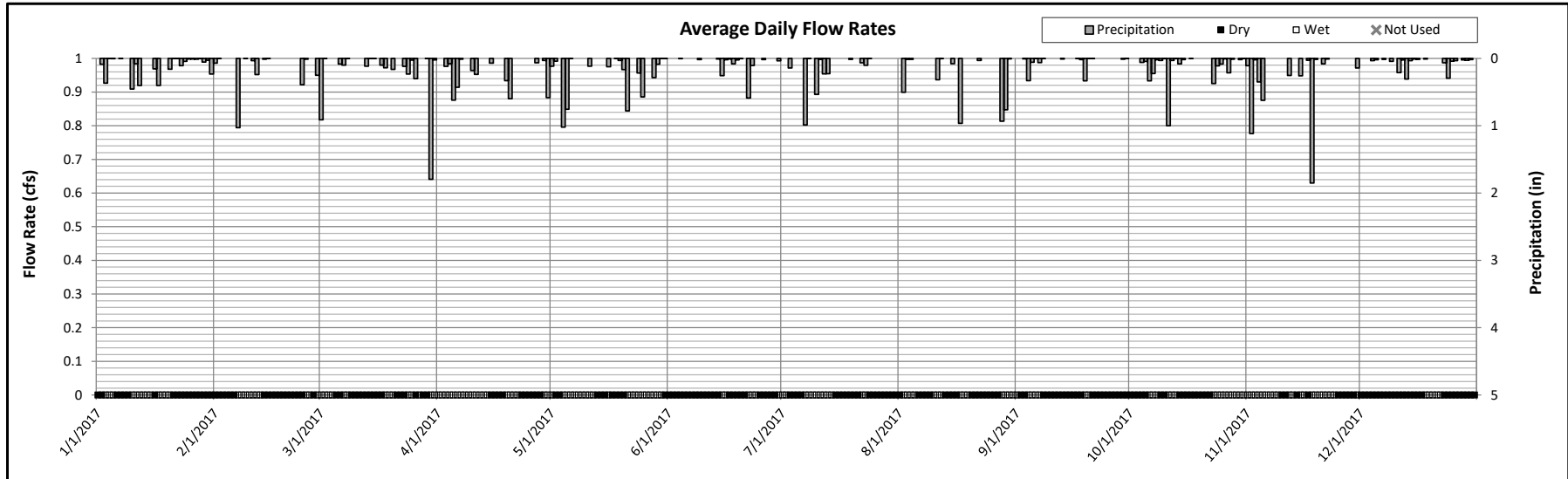
Downriver Sewage Disposal System

Meter Report

Meter: PDO
Type: Telog 3307

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

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



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-17	0.0	0.0	0.0	0.0	18	13
Feb-17	0.0	0.0	0.0	0.0	18	10
Mar-17	0.0	0.0	0.0	0.0	17	14
Apr-17	0.0	0.0	0.0	0.0	10	20
May-17	0.0	0.0	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.0	0.0	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	0.0	-	1.6	2/7/2017 14:25
B	1.96	3/30/2017	3/31/2017	0.0	-	1.6	3/30/2017 0:35
C	1.94	5/4/2017	5/5/2017	0.0	-	1.5	5/5/2017 22:30
-	-	-	-	-	-	-	-

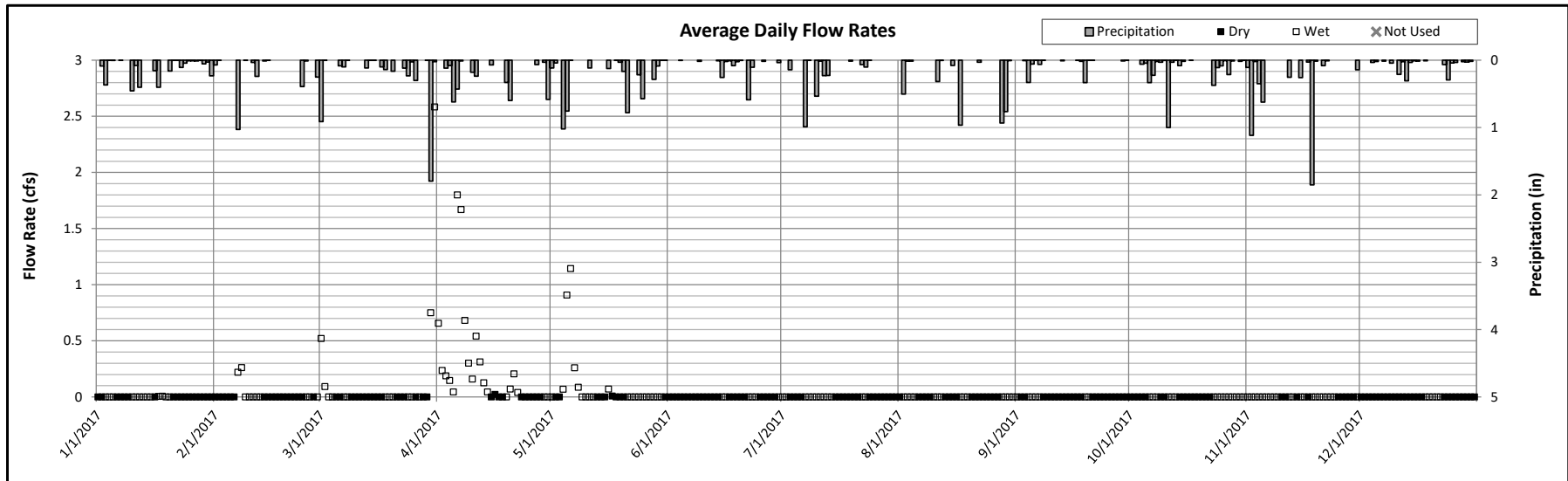
Downriver Sewage Disposal System

Meter Report

Meter: ER-2
Type: ADS Triton+

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

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



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-17	0.0	0.0	0.0	0.0	18	13
Feb-17	0.0	0.3	0.0	0.0	18	10
Mar-17	0.1	2.6	0.0	0.0	17	14
Apr-17	0.2	4.7	0.0	0.0	10	20
May-17	0.1	1.6	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.0	0.0	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	1.5	2/7/2017 21:25	0.7	2/7/2017 22:05
B	1.96	3/30/2017	3/31/2017	4.6	3/31/2017 1:20	1.0	3/31/2017 2:05
C	1.94	5/4/2017	5/5/2017	2.8	5/5/2017 20:45	0.8	5/5/2017 21:15
-	-	-	-	-	-	-	-

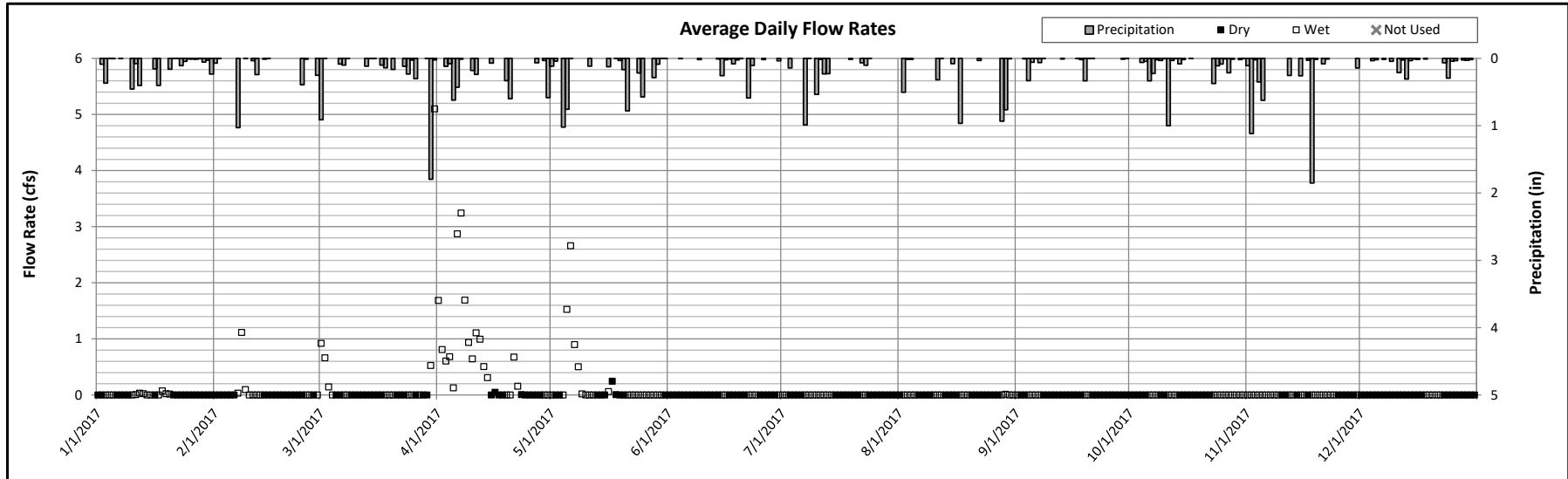
Downriver Sewage Disposal System

Meter Report

Meter: ER-1
Type: ADS Triton+

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

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



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-17	0.0	0.1	0.0	0.0	18	13
Feb-17	0.0	0.8	0.0	0.0	18	10
Mar-17	0.2	4.8	0.0	0.0	17	14
Apr-17	0.6	11.1	0.0	0.1	10	20
May-17	0.2	3.8	0.0	0.5	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.0	0.0	0.0	0.0	16	15
Nov-17	0.0	0.0	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	3.0	2/7/2017 23:50	0.5	2/7/2017 23:55
B	1.96	3/30/2017	3/31/2017	8.3	3/31/2017 3:55	1.0	3/30/2017 23:40
C	1.94	5/4/2017	5/5/2017	5.5	5/5/2017 23:55	0.7	5/5/2017 23:05
-	-	-	-	-	-	-	-

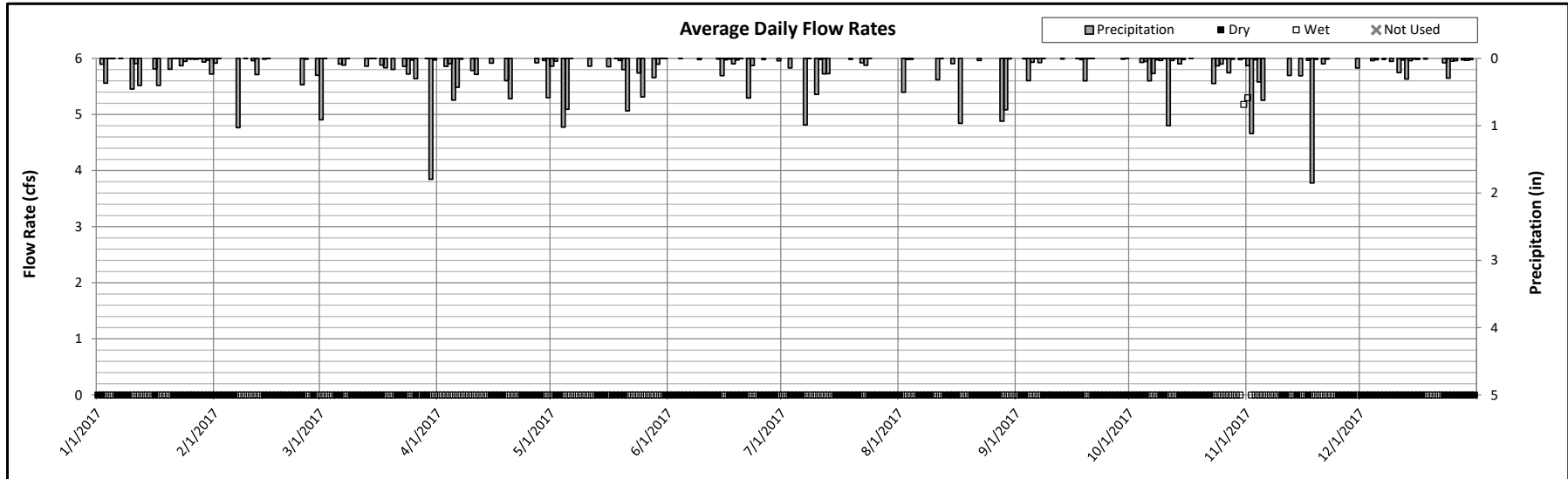
Downriver Sewage Disposal System

Meter Report

Meter: PM-1
Type: Telog 3307

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

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



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-17	0.0	0.0	0.0	0.0	18	13
Feb-17	0.0	0.0	0.0	0.0	18	10
Mar-17	0.0	0.0	0.0	0.0	17	14
Apr-17	0.0	0.0	0.0	0.0	10	20
May-17	0.0	0.0	0.0	0.0	10	21
Jun-17	0.0	0.0	0.0	0.0	24	6
Jul-17	0.0	0.0	0.0	0.0	19	12
Aug-17	0.0	0.0	0.0	0.0	17	14
Sep-17	0.0	0.0	0.0	0.0	23	7
Oct-17	0.2	3.3	0.0	0.0	16	15
Nov-17	0.2	3.4	0.0	0.0	9	21
Dec-17	0.0	0.0	0.0	0.0	26	5

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
A	1.03	2/7/2017	2/8/2017	0.0	-	5.0	2/7/2017 18:40
B	1.96	3/30/2017	3/31/2017	0.0	-	6.0	3/30/2017 22:00
C	1.94	5/4/2017	5/5/2017	0.0	-	4.4	5/5/2017 19:55
-	-	-	-	-	-	-	-

Appendix C

2017 Precipitation Data

Table C-1
Downriver Sewage Disposal System
Summary of Precipitation Data for Significant Storm Events

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

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	A	321	2/7/2017	2/8/2017	0.30	0.90	1.03	1.20	0.09	9%
2	-	230	2/28/2017	3/1/2017	0.50	0.88	1.03	1.29	0.11	11%
3	B	347	3/30/2017	3/31/2017	0.68	1.67	1.96	2.19	0.14	7%
4	-	235	4/5/2017	4/7/2017	2.02	0.71	1.06	1.48	0.24	23%
5	C	339	5/4/2017	5/5/2017	0.84	1.71	1.94	2.29	0.22	11%
6	-	143	7/7/2017	7/7/2017	0.73	0.69	1.08	1.68	0.27	25%
7	-	154	8/28/2017	8/29/2017	0.03	0.29	1.70	3.31	0.83	49%
8	-	152	10/10/2017	10/12/2017	0.71	0.68	1.03	1.27	0.18	18%
9	-	156	11/1/2017	11/2/2017	0.27	0.68	1.22	1.80	0.37	30%
10	-	261	11/17/2017	11/18/2017	0.51	1.44	1.87	2.08	0.16	9%

Notes:

- 1) Significant storm events are defined as those with at least 0.5 inches of rainfall occurring on a single day with an event total of at least 1.0 inch of rainfall. Significant storm events are separated by at least 2 consecutive days without precipitation over 0.1 inches. This storm event definition is based on the arithmetic mean of the rainfall recorded by all rain gages used in the analysis for that storm.
- 2) 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 gages listed on Table B-1.
- 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.
- 5) Appendix B provides the recorded precipitation at each rain gage for these significant/major storm events.

Table C-2
Downriver Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 1
Start Date: 2/7/2017
Stop Date: 2/8/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.29	0.43	0.56	0.81	0.93	0.93	0.93	0.93	0.93
R18	0.28	0.41	0.51	0.82	0.98	0.98	0.98	0.98	0.98
R02	0.31	0.44	0.64	1.02	1.13	1.15	1.15	1.15	1.15
R10	0.31	0.43	0.60	0.94	1.09	1.09	1.09	1.09	1.09
DTW	0.29	0.41	0.56	0.87	1.01	1.01	1.01	1.02	1.01
R09	0.32	0.43	0.62	1.06	1.20	1.20	1.20	1.20	1.20
R04	0.31	0.44	0.57	0.83	0.93	0.95	0.95	0.95	0.95
R08	0.30	0.40	0.59	0.95	1.11	1.11	1.11	1.11	1.11
R15	0.28	0.43	0.59	0.89	1.03	1.03	1.03	1.03	1.03
R17	0.29	0.44	0.58	0.91	1.01	1.02	1.02	1.02	1.02
R06	0.32	0.44	0.53	0.76	0.88	0.90	0.90	0.90	0.90
R16	0.28	0.40	0.55	0.88	0.97	0.97	0.97	0.97	0.97
Minimum (in):	0.28	0.40	0.51	0.76	0.88	0.90	0.90	0.90	0.90
Average (in):	0.30	0.43	0.58	0.90	1.02	1.03	1.03	1.03	1.03
Maximum (in):	0.32	0.44	0.64	1.06	1.20	1.20	1.20	1.20	1.20
Standard Deviation (in):									0.09
Coefficient of Variation:									9%
X.XX*	Missing or suspect data (not used).								

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 2
Start Date: 2/28/2017
Stop Date: 3/1/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.57	0.62	0.67	1.22	1.29	1.32	1.32	1.32	1.29
R18	0.39	0.49	0.52	0.99	1.05	1.06	1.06	1.06	1.05
R02	0.36	0.51	0.54	0.84	0.96	0.99	0.99	0.99	0.96
R10	0.31	0.42	0.45	0.81	0.88	0.89	0.89	0.89	0.88
DTW	0.34	0.45	0.48	0.89	0.97	0.98	0.98	0.98	0.97
R09	0.39	0.57	0.59	0.99	1.19	1.24	1.24	1.24	1.19
R04	0.35	0.54	0.55	0.92	1.05	1.12	1.12	1.12	1.05
R08	0.36	0.49	0.51	0.91	1.09	1.13	1.13	1.14	1.08
R15	0.31	0.46	0.46	0.84	0.92	0.94	0.94	0.94	0.92
R17	0.36	0.50	0.51	0.86	0.99	1.02	1.02	1.02	0.99
R06	0.29	0.45	0.46	0.78	1.04	1.08	1.08	1.08	1.04
R16	0.37	0.51	0.54	0.86	0.98	1.02	1.02	1.02	0.98
Minimum (in):	0.29	0.42	0.45	0.78	0.88	0.89	0.89	0.89	0.88
Average (in):	0.37	0.50	0.52	0.91	1.03	1.07	1.07	1.07	1.03
Maximum (in):	0.57	0.62	0.67	1.22	1.29	1.32	1.32	1.32	1.29
Standard Deviation (in):									0.11
Coefficient of Variation:									11%
X.XX*	Missing or suspect data (not used).								

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

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

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.34	0.59	0.82	1.10	1.59	1.91	1.91	1.91	1.91
R18	0.31	0.61	0.83	1.11	1.54	2.01	2.01	2.01	2.01
R02	0*	0*	0*	0*	0*	0*	0*	0*	0*
R10	0.29	0.58	0.79	1.07	1.53	1.96	1.99	1.99	1.96
DTW	0.30	0.58	0.79	1.07	1.48	1.91	1.91	1.91	1.91
R09	0.27	0.51	0.73	0.97	1.40	1.86	1.88	1.88	1.86
R04	0.43	0.58	0.74	0.96	1.63	2.19	2.22	2.22	2.19
R08	0.29	0.52	0.75	0.99	1.44	1.91	1.93	1.93	1.90
R15	0.25	0.49	0.69	0.93	1.30	1.67	1.69	1.69	1.67
R17	0.43	0.60	0.70	0.92	1.55	2.10	2.13	2.13	2.10
R06	0.44	0.54	0.74	0.93	1.52	2.10	2.16	2.16	2.09
R16	0.39	0.55	0.68	0.86	1.45	1.94	1.98	1.98	1.94
Minimum (in):	0.25	0.49	0.68	0.86	1.30	1.67	1.69	1.69	1.67
Average (in):	0.34	0.56	0.75	0.99	1.49	1.96	1.98	1.98	1.96
Maximum (in):	0.44	0.61	0.83	1.11	1.63	2.19	2.22	2.22	2.19
								Standard Deviation (in):	0.14
								Coefficient of Variation:	7%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	-	-	-	-	-	-	-	-	-
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	2	< 1	< 1	2
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	1
Maximum (in):	< 1	< 1	< 1	< 1	< 1	2	< 1	< 1	2

-	Missing or suspect data (not used).
---	-------------------------------------

Notes:

- 1) Return periods determined from point precipitation frequency (PF) estimates from NOAA Atlas 14, Volume 8, Version 2 published in 2013. NOAA Atlas 14 is the current reference document for return frequency as of 2013.
- 2) Return periods calculated by linear interpolation between the published whole number month or year frequencies.

Table C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

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

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.23	0.40	0.55	0.74	0.95	1.23	1.40	1.40	1.40
R18	0.21	0.37	0.53	0.68	0.83	0.97	1.07	1.07	1.07
R02	0.23	0.39	0.47	0.57	0.62	0.84	1.03	1.03	1.03
R10	0.40	0.59	0.69	0.89	0.98	1.27	1.49	1.49	1.48
DTW	0.26	0.45	0.51	0.62	0.68	0.93	1.11	1.11	1.11
R09	0.14	0.27	0.35	0.46	0.50	0.65	0.71	0.71	0.71
R04	0.19	0.30	0.39	0.55	0.55	0.84	1.11	1.11	1.10
R08	0.16	0.28	0.37	0.51	0.66	0.99	1.27	1.27	1.27
R15	0.14	0.27	0.34	0.48	0.51	0.79	0.93	0.93	0.93
R17	0.17	0.29	0.42	0.56	0.57	0.79	1.00	1.00	0.99
R06	0.13	0.21	0.31	0.46	0.46	0.63	0.81	0.81	0.80
R16	0.12	0.21	0.30	0.40	0.40	0.64	0.79	0.79	0.79
Minimum (in):	0.12	0.21	0.30	0.40	0.40	0.63	0.71	0.71	0.71
Average (in):	0.20	0.34	0.44	0.58	0.64	0.88	1.06	1.06	1.06
Maximum (in):	0.40	0.59	0.69	0.89	0.98	1.27	1.49	1.49	1.48
Standard Deviation (in):									0.24
Coefficient of Variation:									23%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

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

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.15	0.28	0.37	0.53	0.99	1.17	1.78	1.78	1.78
R18	0.18	0.29	0.38	0.53	0.98	1.09	1.72	1.72	1.72
R02	0*	0*	0*	0*	0*	0*	0*	0*	0*
R10	0.20	0.31	0.40	0.56	0.99	1.15	1.83	1.83	1.83
DTW	0.16	0.26	0.34	0.48	0.88	1.04	1.71	1.71	1.71
R09	0.18	0.29	0.37	0.54	0.95	1.16	1.83	1.83	1.82
R04	0.23	0.37	0.48	0.73	1.20	1.48	2.29	2.29	2.29
R08	0.18	0.29	0.36	0.53	0.92	1.20	1.99	1.99	1.99
R15	0.17	0.28	0.37	0.52	0.89	1.10	1.74	1.74	1.74
R17	0.21	0.35	0.43	0.63	1.07	1.42	2.28	2.28	2.27
R06	0.21	0.34	0.45	0.67	1.08	1.36	2.14	2.14	2.14
R16	0.20	0.33	0.41	0.58	0.95	1.25	2.01	2.01	2.01
Minimum (in):	0.15	0.26	0.34	0.48	0.88	1.04	1.71	1.71	1.71
Average (in):	0.19	0.31	0.40	0.57	0.99	1.22	1.94	1.94	1.94
Maximum (in):	0.23	0.37	0.48	0.73	1.20	1.48	2.29	2.29	2.29
Standard Deviation (in):									0.22
Coefficient of Variation:									11%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	-	-	-	-	-	-	-	-	-
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

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

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.90	1.00	1.00	1.00	1.00	1.18	1.18	1.18	1.18
R18	0*	0*	0*	0*	0*	0*	0*	0*	0*
R02	0.43	0.47	0.47	0.47	0.47	0.81	0.81	0.91	0.81
R10	0.67	0.74	0.74	0.74	0.74	0.93	0.93	0.93	0.93
DTW	0.89	0.98	0.98	0.99	0.99	1.27	1.27	1.27	1.27
R09	0.71	0.77	0.78	0.84	0.84	1.13	1.13	1.13	1.13
R04	1.28	1.31	1.31	1.31	1.31	1.68	1.68	1.68	1.68
R08	0.41	0.45	0.54	0.58	0.58	0.70	0.70	0.70	0.69
R15	0.48	0.57	0.59	0.63	0.63	0.80	0.80	0.80	0.79
R17	0.75	0.79	0.91	0.94	0.94	1.15	1.15	1.15	1.15
R06	0.80	0.84	0.93	0.95	0.95	1.16	1.16	1.16	1.16
R16	0.45	0.51	0.55	0.61	0.61	1.07	1.07	1.08	1.06
Minimum (in):	0.41	0.45	0.47	0.47	0.47	0.70	0.70	0.70	0.69
Average (in):	0.71	0.77	0.80	0.82	0.82	1.08	1.08	1.09	1.08
Maximum (in):	1.28	1.31	1.31	1.31	1.31	1.68	1.68	1.68	1.68
Standard Deviation (in):									0.27
Coefficient of Variation:									25%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R18	-	-	-	-	-	-	-	-	-
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	3	2	< 1	< 1	< 1	< 1	< 1	< 1	3
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	3	2	< 1	< 1	< 1	< 1	< 1	< 1	3

- 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

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

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.67	0.76	0.87	0.87	0.88	0.91	1.04	1.04	1.03
R18	0.13	0.19	0.20	0.20	0.20	0.23	0.29	0.29	0.29
R02	0.67	0.72	0.95	1.10	1.12	1.27	1.32	1.32	1.31
R10	0.76	1.08	1.09	1.37	1.37	2.19	2.23	2.23	2.22
DTW	0.69	0.70	1.23	1.40	1.42	1.93	1.96	1.96	1.96
R09	1.08	1.15	1.56	1.90	1.92	3.30	3.32	3.32	3.31
R04	1.30	1.66	1.88	1.88	1.89	2.63	2.66	2.66	2.65
R08	0.41	0.44	0.68	0.85	0.87	1.40	1.40	1.40	1.40
R15	0.98	1.00	1.30	1.50	1.52	1.72	1.74	1.74	1.73
R17	1.07	1.18	1.54	1.55	1.55	2.16	2.19	2.19	2.18
R06	0.35	0.37	0.50	0.72	0.75	0.76	0.76	0.76	0.76
R16	0.64	0.74	0.95	1.08	1.12	1.49	1.54	1.54	1.53
Minimum (in):	0.13	0.19	0.20	0.20	0.20	0.23	0.29	0.29	0.29
Average (in):	0.73	0.83	1.06	1.20	1.22	1.67	1.70	1.70	1.70
Maximum (in):	1.30	1.66	1.88	1.90	1.92	3.30	3.32	3.32	3.31
Standard Deviation (in):									0.83
Coefficient of Variation:									49%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
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	2	< 1	2	3	1	10	6	4	10
R04	4	4	5	3	1	4	2	1	5
R08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R15	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1
R17	2	< 1	2	1	< 1	1	< 1	< 1	2
R06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R16	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Minimum (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	1	< 1	1	1	< 1	2	1	< 1	2
Maximum (in):	4	4	5	3	1	10	6	4	10

-	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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 8
Start Date: 10/10/2017
Stop Date: 10/12/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.26	0.41	0.47	0.92	1.11	1.17	1.21	1.21	1.21
R18	0.20	0.30	0.36	0.57	0.67	0.68	0.68	0.68	0.68
R02	0.22	0.32	0.43	0.73	0.82	0.86	0.89	0.89	0.89
R10	0.22	0.29	0.36	0.68	0.79	0.82	0.85	0.85	0.85
DTW	0.20	0.28	0.39	0.70	0.84	0.86	0.88	0.88	0.88
R09	0.30	0.37	0.54	1.03	1.09	1.11	1.13	1.13	1.13
R04	0.34	0.57	0.74	1.12	1.20	1.23	1.27	1.27	1.27
R08	0.24	0.42	0.50	0.86	0.91	0.93	0.96	0.96	0.96
R15	0.76	1.03	1.03	1.05	1.06	1.09	1.11	1.11	1.11
R17	0.37	0.63	0.76	1.12	1.18	1.20	1.22	1.23	1.22
R06	0.31	0.48	0.72	0.93	0.95	0.97	0.99	0.99	0.99
R16	0.25	0.45	0.61	1.06	1.11	1.13	1.18	1.18	1.18
Minimum (in):	0.20	0.28	0.36	0.57	0.67	0.68	0.68	0.68	0.68
Average (in):	0.31	0.46	0.58	0.90	0.98	1.00	1.03	1.03	1.03
Maximum (in):	0.76	1.03	1.03	1.12	1.20	1.23	1.27	1.27	1.27
Standard Deviation (in):									0.18
Coefficient of Variation:									18%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 9
Start Date: 11/1/2017
Stop Date: 11/2/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.18	0.28	0.37	0.58	0.74	0.91	0.93	1.17	0.91
R18	0.20	0.33	0.47	0.67	0.74	0.92	0.94	1.32	0.93
R02	0.24	0.43	0.58	0.74	0.79	1.20	1.23	1.58	1.22
R10	0*	0*	0*	0*	0*	0*	0*	0*	0*
DTW	0.26	0.43	0.58	0.77	0.85	1.08	1.13	1.64	1.10
R09	0.35	0.62	0.80	0.93	0.99	1.40	1.44	1.96	1.42
R04	0.48	0.79	0.86	0.87	0.93	1.77	1.81	2.07	1.79
R08	0.25	0.47	0.60	0.69	0.74	1.04	1.07	1.41	1.05
R15	0*	0*	0*	0*	0*	0*	0*	0*	0*
R17	0.29	0.45	0.53	0.61	0.65	0.68	0.70	0.88	0.68
R06	0.55	0.88	0.96	0.96	0.96	1.78	1.80	2.13	1.80
R16	0.32	0.55	0.72	0.85	0.91	1.31	1.36	1.77	1.32
Minimum (in):	0.18	0.28	0.37	0.58	0.65	0.68	0.70	0.88	0.68
Average (in):	0.31	0.52	0.65	0.77	0.83	1.21	1.24	1.59	1.22
Maximum (in):	0.55	0.88	0.96	0.96	0.99	1.78	1.81	2.13	1.80
Standard Deviation (in):									0.37
Coefficient of Variation:									30%

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

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R18	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
R10	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-2 continued
Downriver Sewage Disposal System
Rainfall Event Summary Table

Significant Storm Event 10
Start Date: 11/17/2017
Stop Date: 11/18/2017

Gage ID	Peak Rainfall (in)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Event Total
R14	0.41	0.71	0.78	0.89	0.94	1.83	1.84	1.84	1.83
R18	0.40	0.63	0.70	0.84	1.01	1.84	1.84	1.84	1.84
R02	0.40	0.57	0.71	0.83	1.03	1.74	1.75	1.75	1.74
R10	0.43	0.72	0.82	0.93	1.07	2.01	2.01	2.01	2.01
DTW	0.40	0.70	0.83	0.92	1.08	2.00	2.00	2.00	2.00
R09	0.41	0.71	0.80	0.90	1.02	1.90	1.90	1.90	1.90
R04	0.53	0.70	0.82	0.97	1.22	2.08	2.08	2.08	2.08
R08	0.31	0.47	0.54	0.66	0.84	1.44	1.44	1.44	1.44
R15	0.43	0.70	0.81	0.90	1.02	1.90	1.91	1.91	1.90
R17	0.45	0.65	0.74	0.87	1.11	1.90	1.90	1.90	1.90
R06	0.47	0.68	0.76	0.88	1.10	1.93	1.93	1.93	1.93
R16	0.42	0.67	0.76	0.85	1.03	1.88	1.91	1.91	1.88
Minimum (in):	0.31	0.47	0.54	0.66	0.84	1.44	1.44	1.44	1.44
Average (in):	0.42	0.66	0.76	0.87	1.04	1.87	1.88	1.88	1.87
Maximum (in):	0.53	0.72	0.83	0.97	1.22	2.08	2.08	2.08	2.08
Standard Deviation (in):									0.16
Coefficient of Variation:									9%
X.XX*	Missing or suspect data (not used).								

Gage ID	Recurrence Interval (years)								
	1-Hour	2-Hour	3-Hour	6-Hour	12-Hour	24-Hour	2-Day	3-Day	Maximum
R14	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
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 (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Average (in):	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Maximum (in):	< 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 C-3
Downriver Sewage Disposal System
Monthly Precipitation for 2017

Month	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	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	2.94	2.74	2.41	2.47	2.83	2.79	1.81	2.50	2.57	2.88	3.04	2.56	38	26	32
February	2.20	2.69	1.93	2.29	1.90	2.20	1.85	1.99	1.84	1.89	1.96	1.77	47	29	38
March	4.62	4.10	2.24*	4.23	4.26	4.40	4.82	4.29	3.14	4.78	4.56	4.09	45	29	37
April	4.59	4.02	2.88*	4.10	3.55	2.75	3.07	3.26	3.43	2.95	3.16	2.61	65	44	54
May	4.33	3.47	2.26*	3.89	4.39	4.62	4.86	5.29	4.57	4.95	4.60	4.54	68	50	59
June	1.72	0.91*	1.65	1.93	2.02	1.89	1.72	1.09	1.65	2.09	1.82	1.88	82	61	71
July	2.56	0.62*	2.06	2.89	2.44	2.76	3.35	1.37	2.11	2.68	2.63	2.33	84	65	74
August	2.22	1.36	2.22	4.13	3.91	5.81	4.64	2.60	3.31	5.55	3.90	3.97	81	61	71
September	0.83	0.53	0.70	0.81	0.91	0.90	1.15	0.65	0.90	0.90	0.87	0.87	77	57	67
October	3.49	2.36	2.17	2.34*	2.84	3.13	3.09	2.30	1.80*	2.40	2.60	2.82	66	49	57
November	4.17	4.28	4.57	2.74*	4.93	5.33	5.88	3.92	2.67*	4.16	5.68	5.13	48	33	40
December	0.62	0.74	0.99	1.16	1.48	1.10	1.49	0.05*	0.06*	1.29	0.30*	1.36	33	20	27
Total	34.29	27.82*	26.08*	32.98*	35.46	37.68	37.73	29.31*	28.05*	36.52	35.12*	33.93	61	44	52

* Missing or suspect data

**Table C-4
Downriver Sewage Disposal System
Daily Precipitation for January 2017**

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
1/1/2017	0	0	0	0	0	0	0	0	0	0	0	0	41	23	32
1/2/2017	0.22	0.26	0.09	0.03	0.08	0.08	0.03	0.04	0.08	0.05	0.04	0.04	43	27	35
1/3/2017	0.44	0.34	0.33	0.39	0.36	0.38	0.22	0.41	0.34	0.43	0.40	0.38	45	38	42
1/4/2017	0	0	0	0	0.01	0	0	0	0	0	0	0	38	19	28
1/5/2017	0	0	0.01	0	0.03	0	0.01	0	0	0.01	0	0	20	12	16
1/6/2017	0	0	0	0	0	0	0	0	0	0	0	0	17	8	12
1/7/2017	0	0	0	0	0.02	0	0	0	0	0	0	0	17	5	11
1/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	18	8	13
1/9/2017	0	0	0	0	0	0	0	0	0	0	0	0	31	16	24
1/10/2017	0.50	0.40	0.37	0.23	0.53	0.55	0.26	0.39	0.45	0.59	0.64	0.59	49	27	38
1/11/2017	0.12	0.10	0.09	0.05	0.13	0.06	0.06	0.02	0.07	0.07	0.13	0.05	57	29	43
1/12/2017	0.44	0.36	0.44	0.34	0.40	0.47	0.15	0.46	0.38	0.48	0.48	0.43	58	29	44
1/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	29	20	24
1/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	33	23	28
1/15/2017	0	0	0	0	0	0	0	0	0	0	0	0	34	18	26
1/16/2017	0.27	0.22	0.11	0.18	0.15	0.12	0.11	0.12	0.18	0.13	0.15	0.11	36	19	28
1/17/2017	0.37	0.42	0.37	0.46	0.42	0.43	0.26	0.39	0.45	0.41	0.46	0.39	48	33	40
1/18/2017	0	0	0	0	0	0	0	0	0	0	0	0	43	35	39
1/19/2017	0	0	0	0	0	0	0	0	0	0	0	0	38	33	36
1/20/2017	0.15	0.15	0.13	0.14	0.16	0.18	0.14	0.18	0.18	0.19	0.22	0.15	42	33	38
1/21/2017	0	0	0	0.01	0	0	0	0	0.01	0	0	0	59	40	50
1/22/2017	0	0	0	0.01	0	0	0	0	0.01	0	0	0	49	40	44
1/23/2017	0.11	0.11	0.08	0.14	0.11	0.12	0.09	0.11	0.11	0.11	0.11	0.08	46	41	44
1/24/2017	0.06	0.09	0.07	0.08	0.04	0.03	0.02	0.02	0.05	0.03	0.02	0.02	42	39	40
1/25/2017	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0	0.01	0	48	36	42
1/26/2017	0.03	0.01	0	0	0	0	0.05	0	0.03	0	0	0	42	35	38
1/27/2017	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.03	35	28	32
1/28/2017	0	0	0	0	0.02	0	0	0.01	0	0	0.01	0	31	28	30
1/29/2017	0.08	0.05	0.07	0.11	0.05	0.07	0.12	0.04	0.01	0.06	0.02	0	30	25	28
1/30/2017	0.03	0.03	0.03	0.04	0.06	0.04	0.02	0.02	0.02	0.02	0.03	0	27	18	22
1/31/2017	0.11	0.19	0.20	0.24	0.24	0.24	0.25	0.27	0.16	0.29	0.31	0.29	36	26	31
Total	2.94	2.74	2.41	2.47	2.83	2.79	1.81	2.50	2.57	2.88	3.04	2.56	38	26	32

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for February 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
2/1/2017	0.06	0.03	0.05	0.09	0.09	0.07	0.06	0.08	0.06	0.08	0.09	0.07	38	27	32
2/2/2017	0	0	0	0	0.01	0	0	0	0	0	0	0	31	13	22
2/3/2017	0	0	0	0	0	0	0	0	0	0	0	0	25	12	18
2/4/2017	0	0	0	0	0	0	0	0	0	0	0	0	30	13	22
2/5/2017	0	0	0	0	0	0	0	0	0	0	0	0	38	29	34
2/6/2017	0	0	0	0	0	0	0	0	0	0	0	0	42	21	32
2/7/2017	0.93	0.98	1.15	1.09	1.01	1.20	0.95	1.11	1.03	1.02	0.90	0.97	56	34	45
2/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	41	26	34
2/9/2017	0	0	0	0	0.01	0	0	0	0	0	0	0	26	17	22
2/10/2017	0	0	0	0	0	0	0	0	0	0	0	0	34	17	26
2/11/2017	0.03	0.03	0.03	0.04	0.04	0.03	0.03	0.01	0.04	0.04	0.05	0.04	48	33	40
2/12/2017	0.23	0.24	0.20	0.24	0.24	0.24	0.26	0.26	0.25	0.23	0.24	0.26	45	35	40
2/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	45	29	37
2/14/2017	0.02	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0	50	30	40
2/15/2017	0	0	0	0.01	0	0	0	0	0	0	0	0	35	26	30
2/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	34	26	30
2/17/2017	0	0	0	0	0	0	0	0	0	0	0	0	47	29	38
2/18/2017	0	0	0	0	0	0	0	0	0	0	0	0	69	31	50
2/19/2017	0	0	0	0	0	0	0	0	0	0	0	0	66	38	52
2/20/2017	0	0	0	0	0	0	0	0	0	0	0	0	55	35	45
2/21/2017	0	0	0	0	0	0	0	0	0	0	0	0	57	37	47
2/22/2017	0	0	0	0	0	0	0	0	0	0	0	0	65	42	54
2/23/2017	0	0	0	0	0	0	0	0	0	0	0	0	68	42	55
2/24/2017	0.68	0.92	0.27	0.64	0.30	0.31	0.30	0.24	0.27	0.26	0.30	0.22	70	41	56
2/25/2017	0.03	0	0.02	0	0	0.02	0	0.02	0.01	0.01	0.01	0.01	57	25	41
2/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	43	24	34
2/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	52	30	41
2/28/2017	0.22	0.48	0.20	0.16	0.18	0.31	0.24	0.26	0.17	0.24	0.36	0.20	59	37	48
Total	2.20	2.69	1.93	2.29	1.90	2.20	1.85	1.99	1.84	1.89	1.96	1.77	47	29	38

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for March 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
3/1/2017	1.23	0.68	0.87	0.82	0.90	1.04	0.99	0.96	0.85	0.89	0.82	0.90	58	27	42
3/2/2017	0	0	0	0	0	0	0	0.01	0	0	0	0	33	25	29
3/3/2017	0	0	0	0	0	0	0	0	0	0	0	0	32	22	27
3/4/2017	0	0	0	0	0	0	0	0	0	0	0	0	32	17	24
3/5/2017	0	0	0	0	0	0	0	0	0	0	0	0	42	24	33
3/6/2017	0.06	0.05	0.11	0.06	0.07	0.08	0.13	0.05	0.07	0.10	0.15	0.06	58	42	50
3/7/2017	0.15	0.12	0.08	0.11	0.06	0.12	0.12	0.09	0.09	0.09	0.06	0.09	60	38	49
3/8/2017	0	0	0	0.02	0	0	0	0	0	0	0	0	55	37	46
3/9/2017	0	0	0	0	0	0	0	0	0	0	0	0	45	33	39
3/10/2017	0	0	0	0	0	0	0	0	0	0	0	0	36	17	26
3/11/2017	0	0	0	0	0	0	0	0	0	0	0	0	32	16	24
3/12/2017	0	0	0	0	0	0	0	0	0	0	0	0	34	18	26
3/13/2017	0.12	0.11	0.15	0.10	0.25	0.13	0	0.20	0	0.31	0	0.03	26	21	24
3/14/2017	0	0	0	0	0	0	0	0	0	0.02	0	0	26	16	21
3/15/2017	0	0	0	0	0	0	0	0	0	0	0.01	0.01	32	17	24
3/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	42	20	31
3/17/2017	0.10	0.10	0.11	0.12	0.11	0.11	0.10	0.08	0	0.12	0.13	0.11	37	23	30
3/18/2017	0.09	0.08	0.09	0.15	0.12	0.13	0.25	0.16	0	0.19	0.23	0.17	44	34	39
3/19/2017	0	0	0	0	0	0	0	0	0	0	0	0	45	33	39
3/20/2017	0.16	0.18	0.16	0.21	0.17	0.21	0.21	0.19	0.02	0.20	0.19	0.16	43	34	38
3/21/2017	0	0	0	0	0	0	0	0	0	0	0	0	59	29	44
3/22/2017	0	0	0	0	0	0	0	0	0	0	0	0	39	22	30
3/23/2017	0.15	0.15	0.15	0.09	0.16	0.17	0.03	0.08	0.11	0.12	0.08	0.12	44	24	34
3/24/2017	0.31	0.29	0.25	0.31	0.18	0.20	0.37	0.20	0.10	0.21	0.23	0.15	77	37	57
3/25/2017	0.01	0.01	0.03	0.01	0.01	0.09	0.01	0.06	0.01	0.03	0.02	0	47	41	44
3/26/2017	0.32	0.32	0.24	0.24	0.26	0.24	0.39	0.27	0.18	0.37	0.48	0.31	52	40	46
3/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	63	47	55
3/28/2017	0	0	0	0	0	0	0	0	0	0	0	0	54	38	46
3/29/2017	0.01	0	0	0	0	0	0	0	0.02	0	0	0	56	33	44
3/30/2017	1.91	2.01	0*	1.96	1.97	1.86	2.19	1.91	1.67	2.10	2.09	1.94	43	38	40
3/31/2017	0	0	0*	0.03	0	0.02	0.03	0.03	0.02	0.03	0.07	0.04	43	38	40
Total	4.62	4.10	2.24*	4.23	4.26	4.40	4.82	4.29	3.14	4.78	4.56	4.09	45	29	37

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for April 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
4/1/2017	0	0	0*	0	0	0	0	0	0	0	0	0	58	38	48
4/2/2017	0	0	0*	0	0	0	0	0	0	0	0	0	61	35	48
4/3/2017	0.15	0.14	0*	0.11	0.12	0.10	0.15	0.12	0.13	0.14	0.17	0.14	54	47	50
4/4/2017	0.16	0.15	0*	0.06	0.08	0.05	0.14	0.05	0.03	0.09	0.08	0.06	57	47	52
4/5/2017	0.85	0.83	0.62*	0.96	0.71	0.50	0.55	0.52	0.51	0.56	0.47	0.40	50	40	45
4/6/2017	0.54	0.24	0.41	0.52	0.43	0.21	0.53	0.73	0.41	0.42	0.33	0.38	44	35	40
4/7/2017	0.01	0.01	0	0.01	0.01	0	0.03	0.02	0.01	0.02	0.02	0.01	52	35	44
4/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	61	33	47
4/9/2017	0	0	0	0	0	0	0	0	0	0	0	0	77	43	60
4/10/2017	0.47	0.40	0.26	0.19	0.21	0.14	0.09	0.03	0.19	0.06	0.06	0.05	77	59	68
4/11/2017	0.51	0.25	0.10	0.35	0.29	0.17	0.16	0.25	0.30	0.15	0.15	0.16	69	46	58
4/12/2017	0	0	0	0	0	0	0	0	0	0	0	0	61	45	53
4/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	53	44	48
4/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	64	45	54
4/15/2017	0.05	0.07	0.06	0.09	0.07	0.08	0.07	0.08	0.06	0.07	0.08	0.06	83	49	66
4/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	75	57	66
4/17/2017	0	0	0	0	0	0	0	0	0	0	0	0	71	43	57
4/18/2017	0	0	0	0	0	0	0	0	0	0	0	0	67	39	53
4/19/2017	0.30	0.49	0.21	0.45	0.40	0.30	0.14	0.33	0.40	0.39	0.29	0.27	78	50	64
4/20/2017	0.81	0.69	0.62	0.71	0.59	0.54	0.60	0.44	0.66	0.42	0.69	0.47	64	48	56
4/21/2017	0	0	0	0	0	0	0	0	0	0	0	0	55	44	50
4/22/2017	0	0	0	0	0	0	0	0	0	0	0	0	61	39	50
4/23/2017	0	0	0	0	0	0	0	0	0	0	0	0	69	36	52
4/24/2017	0	0	0	0	0	0	0	0	0	0	0	0	71	41	56
4/25/2017	0	0	0	0	0	0	0	0	0	0	0	0	71	51	61
4/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	79	54	66
4/27/2017	0.07	0.04	0.02	0.03	0.02	0.05	0.08	0.05	0.04	0.07	0.16	0.15	73	51	62
4/28/2017	0	0	0	0	0	0	0	0	0	0	0	0	64	44	54
4/29/2017	0.03	0.03	0.01	0.05	0.05	0.03	0	0.04	0.06	0.01	0.02	0.03	57	43	50
4/30/2017	0.64	0.68	0.57	0.57	0.57	0.58	0.53	0.60	0.63	0.55	0.64	0.43	58	42	50
Total	4.59	4.02	2.88*	4.10	3.55	2.75	3.07	3.26	3.43	2.95	3.16	2.61	65	44	54

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for May 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
5/1/2017	0.08	0.14	0.12	0.14	0.12	0.10	0.13	0.11	0.13	0.09	0.17	0.10	68	50	59
5/2/2017	0.02	0.04	0.03	0.04	0.04	0.03	0.09	0.04	0.02	0.04	0.07	0.02	52	43	48
5/3/2017	0	0	0	0	0	0	0	0	0	0	0	0	61	39	50
5/4/2017	1.09	1.06	0*	1.09	0.99	1.08	1.35	1.05	1.02	1.23	1.21	1.07	50	45	48
5/5/2017	0.69	0.66	0*	0.74	0.72	0.74	0.94	0.94	0.72	1.04	0.93	0.94	47	43	45
5/6/2017	0	0	0*	0	0	0.01	0	0	0	0.01	0	0	60	40	50
5/7/2017	0	0	0*	0	0	0	0	0	0	0	0	0	57	38	48
5/8/2017	0	0	0*	0	0	0	0	0	0	0	0	0	58	33	46
5/9/2017	0	0	0*	0	0	0	0	0	0	0	0	0	60	35	48
5/10/2017	0	0	0*	0	0	0	0	0	0	0	0	0	65	44	54
5/11/2017	0.14	0.14	0*	0.14	0.12	0.12	0.12	0.12	0.11	0.13	0.13	0.11	65	48	56
5/12/2017	0	0	0	0	0	0	0	0	0	0	0	0	67	44	56
5/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	73	46	60
5/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	69	50	60
5/15/2017	0	0	0	0	0	0	0	0	0	0	0	0	69	43	56
5/16/2017	0.01	0.02	0.04	0.07	0.17	0.20	0.09	0.15	0.17	0.20	0.24	0.11	87	53	70
5/17/2017	0	0	0	0	0	0	0	0	0	0	0	0	88	68	78
5/18/2017	0	0	0	0	0.01	0	0	0	0	0	0	0	88	64	76
5/19/2017	0	0.02	0.04	0.02	0.02	0.04	0.05	0.04	0	0.05	0.07	0.03	64	46	55
5/20/2017	0.21	0.17	0.17	0.14	0.12	0.17	0.18	0.14	0.11	0.24	0.15	0.20	64	48	56
5/21/2017	0.75	0.49	0.55	0.50	0.95	1.15	0.68	1.45	0.90	0.84	0.45	0.64	77	54	66
5/22/2017	0	0	0	0	0	0	0	0	0	0	0	0	71	51	61
5/23/2017	0	0	0	0	0	0	0	0	0	0	0	0	73	57	65
5/24/2017	0.18	0.29	0.35	0.19	0.21	0.17	0.23	0.19	0.18	0.21	0.26	0.14	69	58	64
5/25/2017	0.55	0.23	0.60	0.48	0.59	0.59	0.44	0.71	0.81	0.53	0.51	0.81	63	58	60
5/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	71	56	64
5/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	74	58	66
5/28/2017	0.53	0.21	0.20	0.31	0.29	0.17	0.30	0.28	0.35	0.22	0.23	0.32	78	59	68
5/29/2017	0.08	0	0.15	0.03	0.04	0.05	0.26	0.07	0.03	0.12	0.16	0.05	81	57	69
5/30/2017	0	0	0.01	0	0	0	0	0	0.01	0	0.01	0	75	55	65
5/31/2017	0	0	0	0	0	0	0	0	0.01	0	0.01	0	74	54	64
Total	4.33	3.47	2.26*	3.89	4.39	4.62	4.86	5.29	4.57	4.95	4.60	4.54	68	50	59

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for June 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
6/1/2017	0	0	0	0	0	0	0	0	0	0	0	0	75	51	63
6/2/2017	0	0	0	0	0	0	0	0	0	0	0	0	81	54	68
6/3/2017	0	0	0	0	0	0	0	0	0	0	0	0	77	55	66
6/4/2017	0	0.01	0	0.01	0.02	0	0.01	0	0	0	0.01	0	87	65	76
6/5/2017	0	0	0	0	0	0	0	0	0	0	0	0	71	56	64
6/6/2017	0	0	0	0	0	0	0	0	0	0	0	0	69	52	60
6/7/2017	0	0	0	0	0	0	0	0	0	0	0	0	74	53	64
6/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	76	51	64
6/9/2017	0.03	0.03	0.02	0.02	0.02	0.03	0.02	0	0	0.02	0.01	0	78	56	67
6/10/2017	0	0	0	0	0	0	0	0	0	0	0	0	88	60	74
6/11/2017	0	0	0	0	0	0	0	0	0	0	0	0	91	69	80
6/12/2017	0	0	0	0	0	0	0	0	0	0	0	0	92	67	80
6/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	92	73	82
6/14/2017	0.01	0.01	0.09	0	0	0	0	0	0	0	0	0	85	69	77
6/15/2017	0.28	0	0.09	0.13	0.26	0.35	0.10	0.27	0.27	0.50	0.21	0.60	86	67	76
6/16/2017	0	0.03	0.02	0.10	0.03	0.01	0	0	0.01	0	0.02	0.01	89	65	77
6/17/2017	0	0	0	0.07	0.01	0	0	0	0.01	0.01	0.01	0.01	89	68	78
6/18/2017	0	0.03	0.12	0.12	0.05	0.10	0.10	0.05	0.05	0.10	0.16	0.10	86	68	77
6/19/2017	0.03	0	0.03	0.04	0.05	0.01	0.02	0.02	0.04	0.01	0.01	0.01	80	61	70
6/20/2017	0.01	0	0	0	0.01	0	0	0	0.02	0	0	0.02	80	57	68
6/21/2017	0	0	0	0	0	0	0	0	0	0	0	0	78	56	67
6/22/2017	0.61	0.48	0.45	0.68	0.90	0.57	0.56	0.33	0.49	0.82	0.59	0.56	89	63	76
6/23/2017	0.27	0.09	0.06	0.07	0.11	0.03	0.19	0.03	0.13	0.04	0.19	0.04	82	66	74
6/24/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	62	71
6/25/2017	0	0	0	0	0	0	0	0	0	0	0	0	73	56	64
6/26/2017	0.06	0	0	0.01	0.02	0	0	0	0.12	0	0	0	73	54	64
6/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	75	52	64
6/28/2017	0	0	0	0	0	0	0	0	0	0	0	0	79	51	65
6/29/2017	0	0	0	0	0	0	0	0	0	0	0	0	88	69	78
6/30/2017	0.42	0.23*	0.77	0.68	0.54	0.79	0.72	0.39	0.51	0.59	0.61	0.53	86	68	77
Total	1.72	0.91*	1.65	1.93	2.02	1.89	1.72	1.09	1.65	2.09	1.82	1.88	82	61	71

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for July 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
7/1/2017	0	0*	0	0	0	0	0	0	0	0	0	0	85	68	76
7/2/2017	0	0*	0	0	0	0	0	0	0	0	0	0	86	64	75
7/3/2017	0.20	0*	0.20	0.19	0.13	0.18	0.16	0.07	0.03	0.22	0.24	0.07	83	65	74
7/4/2017	0	0*	0	0	0	0	0	0	0	0	0	0	82	59	70
7/5/2017	0	0*	0	0	0	0	0	0	0	0	0	0	84	60	72
7/6/2017	0	0*	0	0	0	0	0	0	0	0	0	0	86	63	74
7/7/2017	1.18	0*	0.81	0.93	1.27	1.13	1.68	0.69	0.79	1.15	1.16	1.07	83	67	75
7/8/2017	0	0*	0	0	0	0	0	0.01	0.01	0	0	0	79	63	71
7/9/2017	0	0*	0	0	0	0	0	0	0	0	0	0	82	59	70
7/10/2017	0.64	0*	0.57	0.63	0.51	0.66	0.59	0.40	0.53	0.71	0.55	0.62	77	65	71
7/11/2017	0	0*	0	0	0	0	0.09	0	0.07	0.01	0.01	0	87	68	78
7/12/2017	0.03	0*	0	0.92	0.29	0.58	0.30	0.09	0.06	0.27	0.19	0.02	85	71	78
7/13/2017	0.17	0.15	0.15	0.17	0.16	0.15	0.52	0.11	0.32	0.25	0.41	0.16	83	72	78
7/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	82	67	74
7/15/2017	0	0	0	0	0	0	0	0	0	0	0	0	81	61	71
7/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	83	63	73
7/17/2017	0	0	0	0	0	0	0	0	0	0	0	0	83	60	72
7/18/2017	0	0	0	0	0	0	0	0	0	0	0	0	85	63	74
7/19/2017	0	0	0.12	0	0	0	0	0	0	0	0.05	0	91	70	80
7/20/2017	0	0	0	0	0	0	0	0	0	0	0	0	88	73	80
7/21/2017	0	0	0	0	0	0	0	0	0	0	0	0	89	72	80
7/22/2017	0.03	0.02	0.03	0.01	0.02	0	0	0	0.28	0	0	0.39	89	74	82
7/23/2017	0.31	0.45	0.17	0.04	0.06	0.06	0.01	0	0.02	0.07	0.02	0	86	69	78
7/24/2017	0	0	0.01	0	0	0	0	0	0	0	0	0	76	61	68
7/25/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	56	68
7/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	82	61	72
7/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	88	68	78
7/28/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	61	70
7/29/2017	0	0	0	0	0	0	0	0	0	0	0	0	84	58	71
7/30/2017	0	0	0	0	0	0	0	0	0	0	0	0	89	61	75
7/31/2017	0	0	0	0	0	0	0	0	0	0	0	0	89	64	76
Total	2.56	0.62*	2.06	2.89	2.44	2.76	3.35	1.37	2.11	2.68	2.63	2.33	84	65	74

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for August 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
8/1/2017	0	0	0	0	0	0	0	0	0	0	0	0	88	65	76
8/2/2017	0	0	0.06	0.34	0.26	0.79	0.98	0.25	0.26	1.03	1.09	0.99	89	66	78
8/3/2017	0	0	0	0	0	0.01	0	0	0	0.12	0	0.05	86	66	76
8/4/2017	0.01	0.03	0.02	0.05	0.02	0.01	0.01	0	0.01	0	0.01	0	77	60	68
8/5/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	55	68
8/6/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	59	70
8/7/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	61	70
8/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	85	56	70
8/9/2017	0	0	0	0	0	0	0	0	0	0	0	0	85	61	73
8/10/2017	0	0	0	0	0	0	0	0	0	0	0	0	85	64	74
8/11/2017	0.02	0.09	0.03	0.34	0.35	0.49	0.09	0.19	0.06	1.08	0.80	0.28	84	65	74
8/12/2017	0	0	0	0.01	0	0	0	0	0	0	0	0.05	81	61	71
8/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	59	70
8/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	83	62	72
8/15/2017	0.21	0.16	0.03	0.15	0.12	0.08	0	0.06	0.06	0.03	0.01	0.04	85	65	75
8/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	84	64	74
8/17/2017	0.93	0.75	0.76	0.93	1.19	1.01	0.90	0.69	1.17	1.03	1.21	1.00	82	71	76
8/18/2017	0	0	0	0	0	0	0	0	0	0	0	0	82	67	74
8/19/2017	0	0	0	0	0	0	0	0	0	0	0	0	82	63	72
8/20/2017	0	0	0	0	0	0	0	0	0	0	0	0	85	61	73
8/21/2017	0	0	0	0	0	0	0	0	0	0	0	0	87	69	78
8/22/2017	0.01	0.04	0	0.08	0.01	0.10	0	0.01	0.01	0.07	0.02	0.02	83	63	73
8/23/2017	0	0	0	0	0	0	0	0	0	0	0	0	78	57	68
8/24/2017	0	0	0	0	0	0	0	0	0	0	0	0	72	54	63
8/25/2017	0	0	0	0	0	0	0	0	0	0	0	0	75	52	64
8/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	77	52	64
8/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	78	58	68
8/28/2017	0.15	0.09	1.12	0.85	1.43	1.92	0.76	0.86	1.52	0.63	0.75	1.12	72	63	68
8/29/2017	0.88	0.20	0.19	1.37	0.53	1.39	1.89	0.54	0.21	1.55	0.01	0.41	72	62	67
8/30/2017	0.01	0	0.01	0.01	0	0.01	0.01	0	0.01	0.01	0	0.01	82	59	70
8/31/2017	0	0	0	0	0	0	0	0	0	0	0	0	73	55	64
Total	2.22	1.36	2.22	4.13	3.91	5.81	4.64	2.60	3.31	5.55	3.90	3.97	81	61	71

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for September 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
9/1/2017	0	0	0	0	0	0	0	0	0	0	0	0	66	53	60
9/2/2017	0	0	0	0	0	0	0	0	0	0	0	0	70	51	60
9/3/2017	0	0	0.05	0	0	0	0.01	0	0.02	0	0	0	78	57	68
9/4/2017	0.53	0.32	0.28	0.42	0.49	0.19	0.32	0.22	0.30	0.29	0.31	0.28	85	57	71
9/5/2017	0.09	0.02	0	0.03	0.03	0.02	0.12	0.01	0.18	0.04	0.04	0.11	72	54	63
9/6/2017	0	0	0.01	0	0	0	0	0.01	0	0.01	0	0	68	48	58
9/7/2017	0.10	0.05	0.05	0.07	0.06	0.11	0.04	0.03	0.11	0.04	0.01	0.07	69	49	59
9/8/2017	0	0	0	0.01	0	0	0	0	0	0	0	0	69	50	60
9/9/2017	0	0	0	0	0	0	0	0	0	0	0	0	67	46	56
9/10/2017	0	0	0	0	0	0	0	0	0	0	0	0	70	46	58
9/11/2017	0	0	0	0	0	0	0	0	0	0	0	0	75	50	62
9/12/2017	0	0	0	0	0	0	0	0	0	0	0	0	77	53	65
9/13/2017	0.01	0	0.02	0.01	0.01	0.01	0.01	0.01	0	0.02	0.01	0.01	76	59	68
9/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	76	56	66
9/15/2017	0	0	0	0	0	0	0	0	0	0	0	0	80	57	68
9/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	81	61	71
9/17/2017	0.01	0	0	0	0	0	0	0	0	0	0	0	84	60	72
9/18/2017	0	0	0.01	0	0	0	0.06	0	0.04	0.03	0.06	0.01	75	66	70
9/19/2017	0.07	0.11	0.25	0.25	0.31	0.56	0.57	0.36	0.24	0.46	0.43	0.39	72	64	68
9/20/2017	0	0	0	0	0	0	0	0	0.01	0	0	0	82	64	73
9/21/2017	0	0	0	0.01	0	0	0	0	0	0	0	0	89	67	78
9/22/2017	0	0	0	0	0	0	0	0	0	0	0	0	89	68	78
9/23/2017	0	0	0	0	0	0	0	0	0	0	0	0	91	65	78
9/24/2017	0	0	0	0	0	0	0	0	0	0	0	0	89	66	78
9/25/2017	0	0	0	0	0	0	0	0	0	0	0	0	90	68	79
9/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	93	68	80
9/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	81	60	70
9/28/2017	0	0	0	0	0	0	0	0	0	0	0	0	67	50	58
9/29/2017	0.02	0.03	0.03	0.01	0.01	0.01	0.02	0	0	0.01	0.01	0	71	50	60
9/30/2017	0	0	0	0	0	0	0	0.01	0	0	0	0	65	45	55
Total	0.83	0.53	0.70	0.81	0.91	0.90	1.15	0.65	0.90	0.90	0.87	0.87	77	57	67

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for October 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
10/1/2017	0	0	0	0	0	0	0	0	0	0	0	0	67	43	55
10/2/2017	0	0	0	0	0	0	0	0	0	0	0	0	74	45	60
10/3/2017	0	0	0	0	0	0	0	0	0	0	0	0	85	52	68
10/4/2017	0	0.02	0.13	0.02	0.02	0	0.22	0.01	0.02	0.06	0.19	0.03	80	64	72
10/5/2017	0.07	0.03	0.01	0.05	0.05	0.09	0.04	0.04	0.01	0.06	0.04	0.03	78	54	66
10/6/2017	0.57	0.42	0.23	0.47	0.37	0.35	0.11	0.29	0.39	0.26	0.25	0.30	65	57	61
10/7/2017	0.25	0.17	0.27	0.29	0.30	0.27	0.17	0.19	0.25	0.17	0.13	0.22	83	64	74
10/8/2017	0.11	0.01	0.03	0.01	0.01	0.02	0.01	0	0.01	0.01	0.01	0.02	74	63	68
10/9/2017	0.02	0	0.03	0.03	0.05	0.07	0	0.04	0.01	0.04	0.01	0.06	80	61	70
10/10/2017	0	0	0.01	0	0.01	0	0.02	0	0	0.01	0.01	0	70	56	63
10/11/2017	1.17	0.68	0.85	0.82	0.85	1.11	1.21	0.93	1.07	1.20	0.96	1.13	58	50	54
10/12/2017	0.04	0	0.03	0.03	0.02	0.02	0.04	0.03	0.04	0.02	0.03	0.05	57	50	54
10/13/2017	0	0	0	0	0	0	0	0	0	0.01	0	0	71	56	64
10/14/2017	0.13	0.10	0.08	0.14	0.12	0.10	0.03	0.07	0*	0.03	0.06	0.10	69	61	65
10/15/2017	0.02	0.03	0.01	0.03	0	0.01	0.07	0	0*	0.01	0.01	0.02	74	46	60
10/16/2017	0	0	0	0	0	0	0	0	0*	0	0	0	58	42	50
10/17/2017	0	0	0.01	0	0	0	0	0	0*	0	0	0	69	42	56
10/18/2017	0	0	0	0	0	0	0	0	0*	0	0	0	70	44	57
10/19/2017	0	0	0	0	0	0	0	0	0*	0	0	0	71	51	61
10/20/2017	0	0	0	0	0	0	0	0	0*	0	0	0	72	41	56
10/21/2017	0	0	0	0	0	0	0	0	0*	0	0	0	73	50	62
10/22/2017	0	0	0	0	0	0	0	0	0*	0	0	0	79	53	66
10/23/2017	0.49	0.51	0.16	0.42	0.45	0.55	0.58	0.29	0*	0.28	0.41	0.34	66	52	59
10/24/2017	0.24	0.14	0.02	0.03	0.08	0.15	0.17	0.07	0*	0.09	0.13	0.11	57	44	50
10/25/2017	0.05	0.03	0.01	0	0.21	0.11	0.09	0.12	0*	0.08	0.10	0.07	51	42	46
10/26/2017	0	0	0.01	0	0	0	0	0	0*	0	0	0	54	34	44
10/27/2017	0.27	0.22	0.26	0*	0.26	0.28	0.31	0.19	0*	0.04	0.26	0.30	58	41	50
10/28/2017	0	0	0	0*	0	0	0	0	0*	0.02	0	0.01	46	37	42
10/29/2017	0	0	0	0*	0	0	0	0	0*	0	0	0	48	38	43
10/30/2017	0.05	0	0.02	0*	0.04	0	0.02	0.03	0*	0.01	0	0.03	48	35	42
10/31/2017	0.01	0	0	0*	0	0	0	0	0*	0	0	0	44	35	40
Total	3.49	2.36	2.17	2.34*	2.84	3.13	3.09	2.30	1.80*	2.40	2.60	2.82	66	49	57

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for November 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
11/1/2017	0.11	0.15	0.13	0*	0.11	0.10	0.17	0.07	0*	0.03	0.11	0.10	44	35	40
11/2/2017	0.80	0.78	1.09	0*	0.99	1.32	1.62	0.98	0*	0.65	1.69	1.23	60	44	52
11/3/2017	0.02	0.01	0.01	0*	0.03	0.02	0.02	0.02	0*	0.02	0	0.03	53	38	46
11/4/2017	0.24	0.38	0.35	0*	0.51	0.52	0.26	0.34	0*	0.15	0.32	0.41	52	39	46
11/5/2017	0.40	0.42	0.57	0*	0.54	0.69	0.86	0.49	0*	0.68	0.85	0.72	64	48	56
11/6/2017	0	0	0	0*	0	0	0	0	0*	0	0	0	48	40	44
11/7/2017	0	0	0	0	0	0	0	0	0	0	0	0	49	36	42
11/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	49	28	38
11/9/2017	0	0	0	0	0	0	0	0	0	0	0	0	50	27	38
11/10/2017	0	0	0	0	0	0	0	0	0	0	0	0	30	19	24
11/11/2017	0	0	0	0	0	0	0	0	0	0	0	0	36	23	30
11/12/2017	0.29	0.24	0.22	0.25	0.25	0.27	0.26	0.22	0.26	0.26	0.27	0.25	39	32	36
11/13/2017	0	0	0	0	0	0	0	0	0	0	0	0	44	35	40
11/14/2017	0	0	0	0	0	0	0	0	0	0	0	0	47	34	40
11/15/2017	0.31	0.28	0.22	0.28	0.28	0.28	0.28	0.18	0.27	0.25	0.24	0.25	48	40	44
11/16/2017	0	0	0	0	0	0	0	0	0	0	0	0	45	37	41
11/17/2017	0	0.11	0.03	0	0.01	0.02	0.01	0	0.02	0.01	0	0.01	44	32	38
11/18/2017	1.83	1.73	1.71	2.01	1.99	1.88	2.07	1.44	1.88	1.89	1.93	1.87	47	35	41
11/19/2017	0.01	0	0.01	0	0	0	0	0	0.01	0	0	0.03	39	30	34
11/20/2017	0	0	0	0	0	0	0	0	0	0	0	0	48	29	38
11/21/2017	0.04	0.06	0.09	0.06	0.07	0.08	0.16	0.06	0.08	0.08	0.11	0.08	51	35	43
11/22/2017	0	0	0	0	0	0	0	0	0.01	0	0	0	38	26	32
11/23/2017	0	0	0	0	0	0	0	0	0	0	0	0	40	26	33
11/24/2017	0	0	0	0	0	0	0	0	0	0	0	0	54	28	41
11/25/2017	0	0	0	0	0	0	0	0	0	0	0	0	53	35	44
11/26/2017	0	0	0	0	0	0	0	0	0	0	0	0	45	27	36
11/27/2017	0	0	0	0	0	0	0	0	0	0	0	0	49	28	38
11/28/2017	0	0	0	0	0	0	0	0	0	0	0	0	65	40	52
11/29/2017	0	0	0	0	0	0	0	0	0	0	0	0	53	32	42
11/30/2017	0.12	0.12	0.14	0.14	0.15	0.15	0.17	0.12	0.14	0.14	0.16	0.15	51	31	41
Total	4.17	4.28	4.57	2.74*	4.93	5.33	5.88	3.92	2.67*	4.16	5.68	5.13	48	33	40

* Missing or suspect data

Table C-4 continued
Downriver Sewage Disposal System
Daily Precipitation for December 2017

Date	Daily Precipitation (inches)												DTW Daily Temperature (°F)		
	R-14	R-18	R-02	R-10	DTW	R-09	R-04	R-08	R-15	R-17	R-06	R-16	Max.	Min.	Avg.
12/1/2017	0	0	0	0	0	0	0	0	0	0	0	0	49	31	40
12/2/2017	0	0	0	0	0	0	0	0	0	0	0	0	50	31	40
12/3/2017	0	0	0	0	0	0	0	0	0	0	0	0	55	30	42
12/4/2017	0	0.03	0.03	0.03	0.02	0.06	0.01	0.04	0.04	0.02	0.03	0.05	56	36	46
12/5/2017	0.01	0.01	0.03	0.03	0.02	0.04	0.02	0.01	0.02	0.02	0.01	0.02	58	30	44
12/6/2017	0	0	0	0	0	0	0	0	0	0	0	0	41	27	34
12/7/2017	0	0	0.02	0	0.02	0	0.01	0	0	0	0.01	0	32	25	28
12/8/2017	0	0	0	0	0	0	0	0	0	0	0	0	33	19	26
12/9/2017	0.06	0.03	0.04	0.04	0.10	0.03	0.04	0*	0*	0.03	0.07	0.05	30	24	27
12/10/2017	0	0	0	0	0	0	0	0*	0*	0	0	0	30	24	27
12/11/2017	0.20	0.20	0.17	0.25	0.27	0.22	0.21	0*	0*	0.22	0.11	0.27	31	24	28
12/12/2017	0.01	0	0	0.01	0.01	0	0.03	0*	0*	0.01	0.07	0.01	32	16	24
12/13/2017	0.09	0.22	0.30	0.32	0.42	0.36	0.35	0*	0*	0.34	0*	0.37	26	14	20
12/14/2017	0.01	0.01	0	0.03	0.01	0	0.05	0*	0*	0.09	0*	0.03	21	10	16
12/15/2017	0	0	0	0	0.01	0	0	0*	0*	0	0*	0	28	16	22
12/16/2017	0	0	0	0	0.02	0	0.01	0*	0*	0	0*	0.01	36	21	28
12/17/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	36	21	28
12/18/2017	0.01	0	0	0.01	0.01	0	0	0*	0*	0	0*	0.01	41	30	36
12/19/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	48	37	42
12/20/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	38	28	33
12/21/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	35	28	32
12/22/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	36	33	34
12/23/2017	0.04	0.05	0.05	0.07	0.07	0.05	0.10	0*	0*	0.08	0*	0.07	37	28	32
12/24/2017	0.18	0.18	0.27	0.30	0.34	0.27	0.39	0*	0*	0.36	0*	0.36	28	20	24
12/25/2017	0	0	0.04	0.03	0.03	0.01	0.10	0*	0*	0.05	0*	0.02	22	11	16
12/26/2017	0	0	0	0	0.02	0	0.08	0*	0*	0.01	0*	0.02	14	3	8
12/27/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	13	-4	4
12/28/2017	0	0.01	0.02	0.01	0.04	0.03	0.02	0*	0*	0.03	0*	0.03	14	-3	6
12/29/2017	0.01	0	0.02	0.02	0.05	0.02	0.04	0*	0*	0.03	0*	0.03	19	10	14
12/30/2017	0	0	0	0.01	0.02	0.01	0.03	0*	0*	0	0*	0.01	17	4	10
12/31/2017	0	0	0	0	0	0	0	0*	0*	0	0*	0	17	2	10
Total	0.62	0.74	0.99	1.16	1.48	1.10	1.49	0.05*	0.06*	1.29	0.30*	1.36	33	20	27

* Missing or suspect data

Appendix D

Supplemental Information, DSDS Response to 2017 Major Storm Events

SUMMARY OF RIVERDRIVE INTERCEPTOR AND OPERATION

This appendix includes hydrographs at select locations for the major storm events. Flow limits shown for each community on the hydrographs presented in Appendix D are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). For the controlled flow communities, maximum flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding.

In addition, this appendix includes figures and tables comparing the total 96-hour volumes and precipitation for the three major storm events to the 4.42 inch design event for the non-controlled flow communities.

Table D-1
Downriver Sewage Disposal System
Controlled Flow Communities
Peak Hourly Flow Rates for Significant/Major Storm Events for 2017

Meter District =		RR-1		EC-6		RD-1		SW	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]	
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	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]	
Communities Included in Incremental Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
		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
Proposed Maximum Wet Weather Flow Limits for Controlled Flow Communities									
Total Peak Hourly Flow Rate		--	11.26 cfs	--	23.46 cfs	--	65.82 cfs	--	31.73 cfs
Incremental Peak Hourly Flow Rate		--	11.26 cfs	--	12.20 cfs	--	42.36 cfs	--	31.73 cfs
Significant Storm Event 1 / Major Storm Event A - February 7, 2017									
Total	Start of First Exceedence	--	--	--	--	--	--	--	--
	End of Last Exceedence	--	--	--	--	--	--	--	--
	Total Time of Exceedence	--	--	--	--	--	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	--
	Peak Hourly Flow Rate	2/7/17 21:35	10.30 cfs	2/7/17 19:10	23.26 cfs	2/7/17 20:05	65.48 cfs	2/7/17 23:10	29.43 cfs
Incremental	Start of First Exceedence	--	--	2/7/17 14:20	--	2/7/17 18:05	--	--	--
	End of Last Exceedence	--	--	2/7/17 20:40	--	2/7/17 20:15	--	--	--
	Total Time of Exceedence	--	--	4:30	--	1:35	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.10 MG	--	0.03 MG	--	--
	Peak Hourly Flow Rate	2/7/17 21:35	10.30 cfs	2/7/17 15:00	13.86 cfs	2/7/17 18:35	43.94 cfs	2/7/17 23:10	29.43 cfs
Significant Storm Event 2 - February 28, 2017 to March 1, 2017									
Total	Start of First Exceedence	--	--	--	--	3/1/17 6:35	--	--	--
	End of Last Exceedence	--	--	--	--	3/1/17 8:00	--	--	--
	Total Time of Exceedence	--	--	--	--	1:25	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	0.03 MG	--	--
	Peak Hourly Flow Rate	3/1/17 8:15	10.52 cfs	3/1/17 5:15	22.55 cfs	3/1/17 7:15	67.53 cfs	2/28/17 22:20	30.10 cfs
Incremental	Start of First Exceedence	--	--	3/1/17 4:50	--	3/1/17 6:10	--	--	--
	End of Last Exceedence	--	--	3/1/17 5:45	--	3/1/17 9:50	--	--	--
	Total Time of Exceedence	--	--	0:55	--	3:40	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.01 MG	--	0.17 MG	--	--
	Peak Hourly Flow Rate	3/1/17 8:15	10.52 cfs	3/1/17 5:05	13.08 cfs	3/1/17 7:15	46.48 cfs	2/28/17 22:20	30.10 cfs

Notes:

1. The Maximum Wet Weather Flow Limits for Controlled Flow Communities are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The flow limits for each community are listed below:

- The flow rate limit for River Rouge at RR-1 is 11.26 cfs.
- The flow rate limit for Ecorse at EC-6 is 9.20 cfs.
- The flow rate limit for Lincoln Park is 28.16 cfs.
- The flow rate limit 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.
- The flow rate limit for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.

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

3. 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).

4. The meter math formula for Meter District SW was changed from Meter SW plus Meter SWB to Meter SW in the January-February 2016 System Monitoring Report. Meter SWB measures the dewatering flow rate from the Southgate Wyandotte CSO Basin. During normal wet weather operations, no flow passes through Meter SWB. Consequently, the peak flow rate for Meter District SW can be estimated by only analyzing Meter SW flow rates. Meter SWB flow rates will continue to be monitored to ensure that normal wet weather operations continue. Exceedance of the proposed maximum flow limits occurred primarily after the peak of the storm event and are due to Wayne County operations at the SWRDDD facilities to minimize discharges to the Detroit River from the SWRDDD.

Legend:

XX.XX	Exceeds maximum flow limit by 0 to 20%
XX.XX	Exceeds maximum flow limit by > 20%

Table D-1 continued
Downriver Sewage Disposal System
Controlled Flow Communities
Peak Hourly Flow Rates for Significant/Major Storm Events for 2017

Meter District =		RR-1		EC-6		RD-1		SW	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]	
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	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]	
Communities Included in Incremental Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
		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
Proposed Maximum Wet Weather Flow Limits for Controlled Flow Communities									
Total Peak Hourly Flow Rate		--	11.26 cfs	--	23.46 cfs	--	65.82 cfs	--	31.73 cfs
Incremental Peak Hourly Flow Rate		--	11.26 cfs	--	12.20 cfs	--	42.36 cfs	--	31.73 cfs
Significant Storm Event 3 / Major Storm Event B - March 30-31, 2017									
Total	Start of First Exceedence	--	--	3/30/17 16:25	--	3/30/17 17:15	--	--	--
	End of Last Exceedence	--	--	3/31/17 13:25	--	3/31/17 10:50	--	--	--
	Total Time of Exceedence	--	--	18:45	--	14:55	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.95 MG	--	0.61 MG	--	--
	Peak Hourly Flow Rate	3/31/17 15:35	10.84 cfs	3/30/17 22:35	28.61 cfs	3/30/17 20:35	69.55 cfs	3/30/17 7:45	29.09 cfs
Incremental	Start of First Exceedence	--	--	3/30/17 16:05	--	3/30/17 9:35	--	--	--
	End of Last Exceedence	--	--	3/31/17 13:50	--	3/31/17 9:10	--	--	--
	Total Time of Exceedence	--	--	21:45	--	10:10	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	1.95 MG	--	0.29 MG	--	--
	Peak Hourly Flow Rate	3/31/17 15:35	10.84 cfs	3/30/17 21:00	21.97 cfs	3/30/17 20:10	46.17 cfs	3/30/17 7:45	29.09 cfs
Significant Storm Event 4 - April 5-7, 2017									
Total	Start of First Exceedence	--	--	--	--	--	--	--	--
	End of Last Exceedence	--	--	--	--	--	--	--	--
	Total Time of Exceedence	--	--	--	--	--	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	--
	Peak Hourly Flow Rate	4/6/17 1:10	8.06 cfs	4/6/17 17:55	15.55 cfs	4/6/17 18:25	50.50 cfs	4/8/17 20:55	30.21 cfs
Incremental	Start of First Exceedence	--	--	--	--	--	--	--	--
	End of Last Exceedence	--	--	--	--	--	--	--	--
	Total Time of Exceedence	--	--	--	--	--	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	--
	Peak Hourly Flow Rate	4/6/17 1:10	8.06 cfs	4/6/17 17:55	8.25 cfs	4/5/17 21:35	36.62 cfs	4/8/17 20:55	30.21 cfs

Notes:

1. The Maximum Wet Weather Flow Limits for Controlled Flow Communities are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The flow limits for each community are listed below:

- i. The flow rate limit for River Rouge at RR-1 is 11.26 cfs.
- ii. The flow rate limit for Ecorse at EC-6 is 9.20 cfs.
- iii. The flow rate limit for Lincoln Park is 28.16 cfs.
- iv. The flow rate limit 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 flow rate limit for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.

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

3. 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).

4. The meter math formula for Meter District SW was changed from Meter SW plus Meter SWB to Meter SW in the January-February 2016 System Monitoring Report. Meter SWB measures the dewatering flow rate from the Southgate Wyandotte CSO Basin. During normal wet weather operations, no flow passes through Meter SWB. Consequently, the peak flow rate for Meter District SW can be estimated by only analyzing Meter SW flow rates. Meter SWB flow rates will continue to be monitored to ensure that normal wet weather operations continue. Exceedance of the proposed maximum flow limits occurred primarily after the peak of the storm event and are due to Wayne County operations at the SWRDDD facilities to minimize discharges to the Detroit River from the SWRDDD.

Legend:

XX.XX	Exceeds maximum flow limit by 0 to 20%
XX.XX	Exceeds maximum flow limit by > 20%

Table D-1 continued
Downriver Sewage Disposal System
Controlled Flow Communities
Peak Hourly Flow Rates for Significant/Major Storm Events for 2017

Meter District =		RR-1		EC-6		RD-1		SW	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]	
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	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]	
Communities Included in Incremental Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
		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
Proposed Maximum Wet Weather Flow Limits for Controlled Flow Communities									
Total Peak Hourly Flow Rate		--	11.26 cfs	--	23.46 cfs	--	65.82 cfs	--	31.73 cfs
Incremental Peak Hourly Flow Rate		--	11.26 cfs	--	12.20 cfs	--	42.36 cfs	--	31.73 cfs
Significant Storm Event 5 / Major Storm Event C - May 4-5, 2017									
Total	Start of First Exceedence	--	--	5/5/17 16:40	--	5/5/17 21:05	--	5/5/17 10:15	--
	End of Last Exceedence	--	--	5/5/17 22:05	--	5/5/17 21:25	--	5/6/17 17:30	--
	Total Time of Exceedence	--	--	3:05	--	0:20	--	0:40	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.05 MG	--	0.00 MG	--	0.01 MG
	Peak Hourly Flow Rate	5/5/17 19:20	10.63 cfs	5/5/17 17:15	24.60 cfs	5/5/17 21:15	65.93 cfs	5/5/17 10:35	32.37 cfs
Incremental	Start of First Exceedence	--	--	5/5/17 15:55	--	5/5/17 20:30	--	5/5/17 10:15	--
	End of Last Exceedence	--	--	5/5/17 22:40	--	5/5/17 21:25	--	5/6/17 17:30	--
	Total Time of Exceedence	--	--	5:45	--	0:55	--	0:40	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.17 MG	--	0.01 MG	--	0.01 MG
	Peak Hourly Flow Rate	5/5/17 19:20	10.63 cfs	5/5/17 17:15	14.39 cfs	5/5/17 20:55	43.05 cfs	5/5/17 10:35	32.37 cfs
Significant Storm Event 6 - July 7, 2017									
Total	Start of First Exceedence	--	--	--	--	--	--	7/7/17 3:20	--
	End of Last Exceedence	--	--	--	--	--	--	7/8/17 5:05	--
	Total Time of Exceedence	--	--	--	--	--	--	15:30	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	1.41 MG
	Peak Hourly Flow Rate	7/7/17 7:35	7.64 cfs	7/7/17 5:55	14.16 cfs	7/7/17 6:40	52.07 cfs	7/7/17 18:55	40.65 cfs
Incremental	Start of First Exceedence	--	--	--	--	--	--	7/7/17 3:20	--
	End of Last Exceedence	--	--	--	--	--	--	7/8/17 5:05	--
	Total Time of Exceedence	--	--	--	--	--	--	15:30	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	1.41 MG
	Peak Hourly Flow Rate	7/7/17 7:35	7.64 cfs	7/7/17 5:50	7.98 cfs	7/7/17 6:35	38.33 cfs	7/7/17 18:55	40.65 cfs

Notes:

1. The Maximum Wet Weather Flow Limits for Controlled Flow Communities are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The flow limits for each community are listed below:

- The flow rate limit for River Rouge at RR-1 is 11.26 cfs.
- The flow rate limit for Ecorse at EC-6 is 9.20 cfs.
- The flow rate limit for Lincoln Park is 28.16 cfs.
- The flow rate limit 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.
- The flow rate limit for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.

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

3. 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).

4. The meter math formula for Meter District SW was changed from Meter SW plus Meter SWB to Meter SW in the January-February 2016 System Monitoring Report. Meter SWB measures the dewatering flow rate from the Southgate Wyandotte CSO Basin. During normal wet weather operations, no flow passes through Meter SWB. Consequently, the peak flow rate for Meter District SW can be estimated by only analyzing Meter SW flow rates. Meter SWB flow rates will continue to be monitored to ensure that normal wet weather operations continue. Exceedance of the proposed maximum flow limits occurred primarily after the peak of the storm event and are due to Wayne County operations at the SWRDDD facilities to minimize discharges to the Detroit River from the SWRDDD.

Legend:

XX.XX	Exceeds maximum flow limit by 0 to 20%
XX.XX	Exceeds maximum flow limit by > 20%

Table D-1 continued
Downriver Sewage Disposal System
Controlled Flow Communities
Peak Hourly Flow Rates for Significant/Major Storm Events for 2017

Meter District =		RR-1		EC-6		RD-1		SW	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]	
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	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]	
Communities Included in Incremental Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
		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
Proposed Maximum Wet Weather Flow Limits for Controlled Flow Communities									
Total Peak Hourly Flow Rate		--	11.26 cfs	--	23.46 cfs	--	65.82 cfs	--	31.73 cfs
Incremental Peak Hourly Flow Rate		--	11.26 cfs	--	12.20 cfs	--	42.36 cfs	--	31.73 cfs
Significant Storm Event 7 - August 28-29, 2017									
Total	Start of First Exceedence	--	--	--	--	--	--	--	--
	End of Last Exceedence	--	--	--	--	--	--	--	--
	Total Time of Exceedence	--	--	--	--	--	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	--
	Peak Hourly Flow Rate	8/29/17 16:40	9.90 cfs	8/28/17 21:20	18.80 cfs	8/28/17 22:15	57.02 cfs	8/29/17 19:00	30.44 cfs
Incremental	Start of First Exceedence	--	--	--	--	8/28/17 19:45	--	--	--
	End of Last Exceedence	--	--	--	--	8/28/17 20:05	--	--	--
	Total Time of Exceedence	--	--	--	--	0:20	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	0.00 MG	--	--
	Peak Hourly Flow Rate	8/29/17 16:40	9.90 cfs	8/28/17 21:20	9.11 cfs	8/28/17 19:55	42.61 cfs	8/29/17 19:00	30.44 cfs
Significant Storm Event 8 - October 10-12, 2017									
Total	Start of First Exceedence	--	--	--	--	--	--	10/11/17 17:50	--
	End of Last Exceedence	--	--	--	--	--	--	10/11/17 18:35	--
	Total Time of Exceedence	--	--	--	--	--	--	0:45	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	--	--	0.01 MG
	Peak Hourly Flow Rate	10/11/17 12:15	9.76 cfs	10/11/17 11:45	19.63 cfs	10/11/17 11:25	56.88 cfs	10/11/17 18:10	32.21 cfs
Incremental	Start of First Exceedence	--	--	--	--	10/11/17 8:15	--	10/11/17 17:50	--
	End of Last Exceedence	--	--	--	--	10/11/17 9:30	--	10/11/17 18:35	--
	Total Time of Exceedence	--	--	--	--	1:15	--	0:45	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	0.03 MG	--	0.01 MG
	Peak Hourly Flow Rate	10/11/17 12:15	9.76 cfs	10/11/17 11:45	10.13 cfs	10/11/17 8:55	43.92 cfs	10/11/17 18:10	32.21 cfs

Notes:

1. The Maximum Wet Weather Flow Limits for Controlled Flow Communities are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The flow limits for each community are listed below:

- The flow rate limit for River Rouge at RR-1 is 11.26 cfs.
- The flow rate limit for Ecorse at EC-6 is 9.20 cfs.
- The flow rate limit for Lincoln Park is 28.16 cfs.
- The flow rate limit 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.
- The flow rate limit for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.

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

3. 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).

4. The meter math formula for Meter District SW was changed from Meter SW plus Meter SWB to Meter SW in the January-February 2016 System Monitoring Report. Meter SWB measures the dewatering flow rate from the Southgate Wyandotte CSO Basin. During normal wet weather operations, no flow passes through Meter SWB. Consequently, the peak flow rate for Meter District SW can be estimated by only analyzing Meter SW flow rates. Meter SWB flow rates will continue to be monitored to ensure that normal wet weather operations continue. Exceedance of the proposed maximum flow limits occurred primarily after the peak of the storm event and are due to Wayne County operations at the SWRDDD facilities to minimize discharges to the Detroit River from the SWRDDD.

Legend:

XX.XX	Exceeds maximum flow limit by 0 to 20%
XX.XX	Exceeds maximum flow limit by > 20%

Table D-1 continued
Downriver Sewage Disposal System
Controlled Flow Communities
Peak Hourly Flow Rates for Significant/Major Storm Events for 2017

Meter District =		RR-1		EC-6		RD-1		SW	
Location =		River Rouge CSO Basin Outlet		Riverdrive Interceptor South of Southfield Road		Riverdrive Interceptor North of Northline Road		SWRDDD Connection	
Total Flow Formula =		[RR-1]		[EC-6]		[RD-1]		[SW]	
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	
Incremental Flow Formula =		[RR-1]		[EC-6] - [RR-1r]		[RD-1] - [EC-6r]		[SW]	
Communities Included in Incremental Flow =		River Rouge		Ecorse & Lincoln Park (part)		Lincoln Park (part) & Allen Park (part)		Southgate (part) & Wyandotte	
		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
Proposed Maximum Wet Weather Flow Limits for Controlled Flow Communities									
Total Peak Hourly Flow Rate		--	11.26 cfs	--	23.46 cfs	--	65.82 cfs	--	31.73 cfs
Incremental Peak Hourly Flow Rate		--	11.26 cfs	--	12.20 cfs	--	42.36 cfs	--	31.73 cfs
Significant Storm Event 9 - November 1-2, 2017									
Total	Start of First Exceedence	--	--	--	--	11/2/17 4:45	--	--	--
	End of Last Exceedence	--	--	--	--	11/2/17 7:15	--	--	--
	Total Time of Exceedence	--	--	--	--	2:30	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	0.07 MG	--	--
	Peak Hourly Flow Rate	11/2/17 5:45	8.67 cfs	11/2/17 4:45	16.26 cfs	11/2/17 6:25	67.80 cfs	11/2/17 4:55	30.07 cfs
Incremental	Start of First Exceedence	--	--	--	--	11/2/17 2:50	--	--	--
	End of Last Exceedence	--	--	--	--	11/2/17 11:25	--	--	--
	Total Time of Exceedence	--	--	--	--	8:35	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	--	--	1.89 MG	--	--
	Peak Hourly Flow Rate	11/2/17 5:45	8.67 cfs	11/2/17 4:40	8.12 cfs	11/2/17 6:25	52.58 cfs	11/2/17 4:55	30.07 cfs
Significant Storm Event 10 - November 17-18, 2017									
Total	Start of First Exceedence	--	--	11/18/17 15:45	--	--	--	--	--
	End of Last Exceedence	--	--	11/18/17 16:50	--	--	--	--	--
	Total Time of Exceedence	--	--	1:05	--	--	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.02 MG	--	--	--	--
	Peak Hourly Flow Rate	11/18/17 14:10	7.33 cfs	11/18/17 16:20	24.31 cfs	11/18/17 15:50	63.23 cfs	11/19/17 0:50	31.16 cfs
Incremental	Start of First Exceedence	--	--	11/18/17 4:50	--	11/18/17 2:20	--	--	--
	End of Last Exceedence	--	--	11/19/17 1:15	--	11/18/17 16:00	--	--	--
	Total Time of Exceedence	--	--	10:40	--	4:30	--	--	--
	Total Volume Above Maximum Flow Limit	--	--	--	0.62 MG	--	0.45 MG	--	--
	Peak Hourly Flow Rate	11/18/17 14:10	7.33 cfs	11/18/17 16:20	17.70 cfs	11/18/17 3:05	51.69 cfs	11/19/17 0:50	31.16 cfs

Notes:

1. The Maximum Wet Weather Flow Limits for Controlled Flow Communities are from the proposed new Downriver Sewage Disposal System Service Agreement (December 4, 2014). These flow limits are specified in the existing service agreement, adjusted in April 2014 to reflect increases in DWTF capacity, transfers that have occurred between communities and proper conversions from cfs to MGD, consistent significant figures and appropriate rounding. The communities are responsible for regulating their flow rates to the Riverdrive Interceptor to the these flow limits. The flow limits for each community are listed below:

- The flow rate limit for River Rouge at RR-1 is 11.26 cfs.
- The flow rate limit for Ecorse at EC-6 is 9.20 cfs.
- The flow rate limit for Lincoln Park is 28.16 cfs.
- The flow rate limit 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.
- The flow rate limit for Allen Park at RD-1 (via Lincoln Park) is 17.20 cfs.

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

3. 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).

4. The meter math formula for Meter District SW was changed from Meter SW plus Meter SWB to Meter SW in the January-February 2016 System Monitoring Report. Meter SWB measures the dewatering flow rate from the Southgate Wyandotte CSO Basin. During normal wet weather operations, no flow passes through Meter SWB. Consequently, the peak flow rate for Meter District SW can be estimated by only analyzing Meter SW flow rates. Meter SWB flow rates will continue to be monitored to ensure that normal wet weather operations continue. Exceedance of the proposed maximum flow limits occurred primarily after the peak of the storm event and are due to Wayne County operations at the SWRDDD facilities to minimize discharges to the Detroit River from the SWRDDD.

Legend:

XX.XX	Exceeds maximum flow limit by 0 to 20%
XX.XX	Exceeds maximum flow limit by > 20%

Table D-2
Downriver Sewage Disposal System
Peak 96 Hour Total Volumes for Significant Storm Events Summarized by Community

Community	Meter District	Year 2010 Incremental Population	Major Storm Event A February 7, 2017 1.03 inches	
			Total Peak 96 Hour Incremental Volume (MG)	Peak 96 Hour Incremental Volume (MG)
Allen Park	PC-1	1,019	27.3	1.0
	P-1	3,332	28.1	6.7
	RD-1	18,179	81.6	28.2
	APO-1 + APO-2	0	3.4	3.4
	Total	22,531	140.3	39.3
Belleville	PA-4	3,993	7.9	3.3
Brownstown Twp.	P-2	10,397	8.0	7.8
	PA-2	248	10.0	0.2
	Total	10,645	18.0	8.0
Dearborn Hts.	TB-1	19,152	36.5	28.6
Ecorse	EC-6	9,515	12.2	8.7
Lincoln Park	EC-6	3,795	12.2	3.5
	RD-1	34,347	81.6	53.3
	Total	38,142	93.8	56.8
River Rouge	RR-1	7,903	16.3	16.3
Riverview	RV-1	12,486	12.7	12.7
Romulus	DMA-1	0	1.8	1.8
	PA-3	11,371	17.6	17.6
	DMA-2	0	5.3	5.3
	PD-2	9,532	13.7	13.7
	Total	20,904	38.4	38.4
Southgate	P-1	10,637	28.1	21.4
	PB-1	4,459	7.2	2.9
	SW	14,752	71.2	25.9
	TPS+IPS	199	0.4	0.4
	Total	30,047	106.9	50.5
Taylor	P-2	262	8.0	0.2
	PA-2	13,270	10.0	9.8
	PB-1	6,462	7.2	4.3
	TB-1	5,339	36.5	8.0
	PC-1	25,700	27.3	26.2
	PD-1	12,100	10.0	10.0
	Total	63,131	99.0	58.5
Van Buren Twp.	PA-4	5,719	7.9	4.7
Wyandotte	SW	25,883	71.2	45.4

Notes:

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

Table D-2 continued
Downriver Sewage Disposal System
Peak 96 Hour Total Volumes for Significant Storm Events Summarized by Community

Community	Meter District	Year 2010 Incremental Population	Major Storm Event B March 30-31, 2017 1.96 inches	
			Total Peak 96 Hour Incremental Volume (MG)	Peak 96 Hour Incremental Volume (MG)
Allen Park	PC-1	1,019	36.1	1.4
	P-1	3,332	44.6	10.6
	RD-1	18,179	107.8	37.3
	APO-1 + APO-2	0	16.1	16.1
	Total	22,531	204.5	65.4
Belleville	PA-4	3,993	10.7	4.4
Brownstown Twp.	P-2	10,397	10.9	10.6
	PA-2	248	14.6	0.3
	Total	10,645	25.5	10.9
Dearborn Hts.	TB-1	19,152	42.6	33.3
Ecorse	EC-6	9,515	19.4	13.9
Lincoln Park	EC-6	3,795	19.4	5.5
	RD-1	34,347	107.8	70.5
	Total	38,142	127.2	76.0
River Rouge	RR-1	7,903	22.1	22.1
Riverview	RV-1	12,486	19.5	19.5
Romulus	DMA-1	0	2.2	2.2
	PA-3	11,371	23.3	23.3
	DMA-2	0	9.7	9.7
	PD-2	9,532	16.8	16.8
	Total	20,904	51.9	51.9
Southgate	P-1	10,637	44.6	33.9
	PB-1	4,459	9.6	3.8
	SW	14,752	67.1	24.4
	TPS+IPS	199	0.7	0.7
	Total	30,047	122.0	62.8
Taylor	P-2	262	10.9	0.3
	PA-2	13,270	14.6	14.4
	PB-1	6,462	9.6	5.8
	TB-1	5,339	42.6	9.3
	PC-1	25,700	36.1	34.7
	PD-1	12,100	12.0	12.0
	Total	63,131	125.8	76.3
Van Buren Twp.	PA-4	5,719	10.7	6.3
Wyandotte	SW	25,883	67.1	42.8

Notes:

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

Table D-2 continued
Downriver Sewage Disposal System
Peak 96 Hour Total Volumes for Significant Storm Events Summarized by Community

Community	Meter District	Year 2010 Incremental Population	Major Storm Event C May 4-5, 2017 1.94 inches	
			Total Peak 96 Hour Incremental Volume (MG)	Peak 96 Hour Incremental Volume (MG)
Allen Park	PC-1	1,019	33.0	1.3
	P-1	3,332	34.6	8.3
	RD-1	18,179	86.6	30.0
	APO-1 + APO-2	0	8.1	8.1
	Total	22,531	162.3	47.6
Belleville	PA-4	3,993	9.7	4.0
Brownstown Twp.	P-2	10,397	10.2	9.9
	PA-2	248	13.2	0.2
	Total	10,645	23.3	10.2
Dearborn Hts.	TB-1	19,152	37.6	29.4
Ecorse	EC-6	9,515	17.5	12.5
Lincoln Park	EC-6	3,795	17.5	5.0
	RD-1	34,347	86.6	56.7
	Total	38,142	104.1	61.6
River Rouge	RR-1	7,903	22.7	22.7
Riverview	RV-1	12,486	19.6	19.6
Romulus	DMA-1	0	2.1	2.1
	PA-3	11,371	21.1	21.1
	DMA-2	0	10.1	10.1
	PD-2	9,532	18.2	18.2
	Total	20,904	51.5	51.5
Southgate	P-1	10,637	34.6	26.3
	PB-1	4,459	9.0	3.6
	SW	14,752	78.7	28.6
	TPS+IPS	199	0.8	0.8
	Total	30,047	123.1	59.3
Taylor	P-2	262	10.2	0.2
	PA-2	13,270	13.2	12.9
	PB-1	6,462	9.0	5.4
	TB-1	5,339	37.6	8.2
	PC-1	25,700	33.0	31.8
	PD-1	12,100	10.5	10.5
	Total	63,131	113.4	69.0
Van Buren Twp.	PA-4	5,719	9.7	5.7
Wyandotte	SW	25,883	78.7	50.1

Notes:

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

Table D-3
Downriver Sewage Disposal System
Peak Flow Rates for Significant Storm Events

System	Meter	Location	Major Storm Event A February 7, 2017 1.03 inches			
			Peak Hour		Peak 96 Hour	
			Date/Time	Flow Rate (cfs)	Date/Time	Cumulative Volume (MG)
Tunnel (Non-Controlled)	TB-1	Taylor Basin	2/7/17 13:45	15.0	2/7/17 12:10	36.5
	PC-1	Pelham Interceptor North of Goddard Road	2/7/17 13:25	28.1	2/7/17 12:05	60.5
	DMA-2	Goddard near Harrison	2/7/17 17:40	2.1	2/7/17 23:55	5.3
	PD-2	Goddard Interceptor West of Inkster Road	2/7/17 18:15	16.3	2/7/17 12:25	19.0
	PD-1	Goddard Interceptor West of Allen Road	2/7/17 19:35	20.4	2/7/17 12:15	29.0
	PB-1	Northline Interceptor West of Fordline Road	2/7/17 17:20	8.0	2/7/17 11:40	7.2
	PA-4	Eureka Interceptor near Hannan Road	2/7/17 19:35	3.7	2/7/17 13:45	7.9
	DMA-1	Detroit Metropolitan Airport	2/7/17 14:40	1.2	2/7/17 1:05	1.8
	PA-3	Eureka Interceptor at Inkster Road	2/7/17 18:10	16.5	2/7/17 13:00	27.0
	PA-2	Eureka Interceptor at Allen Road	2/7/17 18:30	25.1	2/7/17 12:50	36.5
	PA-1	Eureka Interceptor West of Fordline Road	2/7/17 18:30	33.8	2/7/17 12:35	44.9
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	2/7/17 17:30	6.7	2/7/17 12:45	8.0
	P-1	Pennsylvania Interceptor East of Fort Street	2/7/17 18:30	125.4	2/7/17 12:40	169.2
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	2/7/17 14:55	19.0	2/7/17 0:15	12.7
Riverdrive (Controlled)	RR-1	River Rouge CSO Basin Outlet Jefferson North of Victoria	2/7/17 21:35	10.3	2/7/17 10:15	16.3
	EC-6	Riverdrive Interceptor South of Southfield Road	2/7/17 19:10	23.3	2/7/17 10:55	28.5
	RD-1	Riverdrive Interceptor North of Northline Road	2/7/17 20:05	65.5	2/7/17 11:55	110.1
	SW + SWB	Southgate-Wyandotte Connection	2/7/17 9:30	41.6	2/7/17 23:05	71.2
Tunnel Connection Meters	TSO	At Pelham Basin	2/7/17 19:30	0.1	2/7/17 11:15	0.0
	APO-1	Belmont and Rosedale	2/7/17 17:00	6.9	2/7/17 14:10	0.8
	APO-2	Belmont and Quandt	2/7/17 16:40	16.9	2/7/17 13:55	2.6
	CHPO	Pelham Road South of R.R.	2/7/17 17:10	7.9	2/7/17 12:35	2.8
	CPO	Pelham Road North of Haskell	2/7/17 17:20	5.0	2/7/17 13:35	0.5
	PDO	Allen Road and Goddard	-	0.0	-	0.0
	ER-2	Eureka Road and Inkster	2/7/17 21:25	1.5	2/7/17 20:05	0.3
	ER-1	Allen Road and Eureka Road	2/7/17 23:50	3.0	2/7/17 23:40	0.8
	PM-1	Pennsylvania Ave. at Fordline	-	0.0	-	0.0
DWTF	IPS + TPS	DWTF Influent	2/7/17 19:00	321.3	2/7/17 15:15	395.1

Table D-3 continued
Downriver Sewage Disposal System
Peak Flow Rates for Significant Storm Events

System	Meter	Location	Major Storm Event B March 30-31, 2017 1.96 inches			
			Peak Hour		Peak 96 Hour	
			Date/Time	Flow Rate (cfs)	Date/Time	Cumulative Volume (MG)
Tunnel (Non-Controlled)	TB-1	Taylor Basin	3/31/17 5:15	15.4	3/30/17 9:20	36.7
	PC-1	Pelham Interceptor North of Goddard Road	3/30/17 10:20	28.9	3/30/17 9:00	63.6
	DMA-2	Goddard near Harrison	4/1/17 11:50	3.0	4/1/17 23:55	9.7
	PD-2	Goddard Interceptor West of Inkster Road	3/30/17 22:20	18.4	3/30/17 10:35	26.5
	PD-1	Goddard Interceptor West of Allen Road	3/30/17 23:15	24.5	3/30/17 10:00	38.4
	PB-1	Northline Interceptor West of Fordline Road	3/30/17 20:45	9.7	3/30/17 8:10	9.6
	PA-4	Eureka Interceptor near Hannan Road	3/30/17 23:25	6.3	3/30/17 16:30	10.7
	DMA-1	Detroit Metropolitan Airport	4/1/17 18:50	1.6	3/30/17 3:05	2.2
	PA-3	Eureka Interceptor at Inkster Road	3/30/17 21:25	18.7	3/30/17 10:30	33.4
	PA-2	Eureka Interceptor at Allen Road	3/30/17 20:35	27.8	3/30/17 9:50	45.2
	PA-1	Eureka Interceptor West of Fordline Road	3/30/17 21:05	40.6	3/30/17 9:50	56.6
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	3/30/17 21:40	10.7	3/30/17 8:50	10.9
	P-1	Pennsylvania Interceptor East of Fort Street	3/30/17 22:15	136.9	3/30/17 10:05	212.3
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	3/30/17 20:35	32.4	3/30/17 7:10	19.5
Riverdrive (Controlled)	RR-1	River Rouge CSO Basin Outlet Jefferson North of Victoria	3/31/17 15:35	10.8	3/30/17 8:40	22.1
	EC-6	Riverdrive Interceptor South of Southfield Road	3/30/17 22:35	28.6	3/30/17 8:40	41.5
	RD-1	Riverdrive Interceptor North of Northline Road	3/30/17 20:35	69.5	3/30/17 8:50	149.3
	SW + SWB	Southgate-Wyandotte Connection	3/30/17 7:45	29.1	4/1/17 15:10	67.1
Tunnel Connection Meters	TSO	At Pelham Basin	3/31/17 5:10	18.5	3/30/17 8:25	5.9
	APO-1	Belmont and Rosedale	3/30/17 20:35	17.2	3/30/17 10:00	3.8
	APO-2	Belmont and Quandt	3/30/17 20:15	31.3	3/30/17 9:55	12.2
	CHPO	Pelham Road South of R.R.	3/30/17 20:40	13.9	3/30/17 9:05	6.7
	CPO	Pelham Road North of Haskell	3/30/17 20:45	14.4	3/30/17 9:50	2.4
	PDO	Allen Road and Goddard	-	0.0	-	0.0
	ER-2	Eureka Road and Inkster	3/31/17 1:20	4.6	3/30/17 16:00	2.8
	ER-1	Allen Road and Eureka Road	3/31/17 3:55	8.3	3/30/17 12:35	5.6
	PM-1	Pennsylvania Ave. at Fordline	-	0.0	-	0.0
DWTF	IPS + TPS	DWTF Influent	3/30/17 20:45	346.6	3/30/17 9:50	525.5

Table D-3 continued
Downriver Sewage Disposal System
Peak Flow Rates for Significant Storm Events

System	Meter	Location	Major Storm Event C May 4-5, 2017 1.94 inches			
			Peak Hour		Peak 96 Hour	
			Date/Time	Flow Rate (cfs)	Date/Time	Cumulative Volume (MG)
Tunnel (Non-Controlled)	TB-1	Taylor Basin	5/4/17 16:40	15.0	5/4/17 15:50	37.5
	PC-1	Pelham Interceptor North of Goddard Road	5/4/17 16:55	28.0	5/4/17 12:15	65.0
	DMA-2	Goddard near Harrison	5/5/17 16:20	4.3	5/5/17 7:25	10.1
	PD-2	Goddard Interceptor West of Inkster Road	5/5/17 18:50	17.0	5/4/17 15:35	28.3
	PD-1	Goddard Interceptor West of Allen Road	5/5/17 19:05	22.4	5/4/17 14:20	38.9
	PB-1	Northline Interceptor West of Fordline Road	5/5/17 17:50	7.0	5/4/17 9:05	9.0
	PA-4	Eureka Interceptor near Hannan Road	5/5/17 22:35	4.8	5/4/17 14:15	9.7
	DMA-1	Detroit Metropolitan Airport	5/4/17 13:10	1.4	5/4/17 0:00	2.1
	PA-3	Eureka Interceptor at Inkster Road	5/5/17 18:15	16.5	5/4/17 16:00	31.3
	PA-2	Eureka Interceptor at Allen Road	5/5/17 18:50	25.4	5/4/17 14:55	42.4
	PA-1	Eureka Interceptor West of Fordline Road	5/5/17 18:45	31.9	5/4/17 15:40	51.7
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	5/5/17 18:30	8.0	5/4/17 10:20	10.2
	P-1	Pennsylvania Interceptor East of Fort Street	5/5/17 19:50	116.3	5/4/17 14:10	200.0
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	5/5/17 18:35	21.0	5/4/17 7:35	19.6
Riverdrive (Controlled)	RR-1	River Rouge CSO Basin Outlet Jefferson North of Victoria	5/5/17 19:20	10.6	5/4/17 9:05	22.7
	EC-6	Riverdrive Interceptor South of Southfield Road	5/5/17 17:15	24.6	5/4/17 9:30	40.1
	RD-1	Riverdrive Interceptor North of Northline Road	5/5/17 21:15	65.9	5/4/17 9:55	126.8
	SW + SWB	Southgate-Wyandotte Connection	5/4/17 7:50	33.4	5/5/17 21:55	78.7
Tunnel Connection Meters	TSO	At Pelham Basin	5/5/17 13:10	0.1	5/4/17 14:35	0.1
	APO-1	Belmont and Rosedale	5/5/17 16:55	9.9	5/5/17 13:55	1.7
	APO-2	Belmont and Quandt	5/5/17 16:30	20.0	5/5/17 13:45	6.4
	CHPO	Pelham Road South of R.R.	5/5/17 17:40	9.1	5/4/17 14:05	5.2
	CPO	Pelham Road North of Haskell	5/5/17 16:50	2.8	5/4/17 16:50	0.3
	PDO	Allen Road and Goddard	-	0.0	-	0.0
	ER-2	Eureka Road and Inkster	5/5/17 20:45	2.8	5/4/17 22:15	1.6
	ER-1	Allen Road and Eureka Road	5/5/17 23:55	5.5	5/5/17 2:10	3.6
	PM-1	Pennsylvania Ave. at Fordline	-	0.0	-	0.0
DWTF	IPS + TPS	DWTF Influent	5/5/17 21:05	339.5	5/4/17 12:50	481.2

Table D-4
Downriver Sewage Disposal System
Peak Hydraulic Grade Lines for Significant Storm Events

System	Meter	Location	Rim Elevation (ft)	Invert Elevation (ft)	Diameter (ft)	Major Storm Event A February 7, 2017 1.03 inches			
						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	2/7/17 20:15	4.1	569.1	○
	PD-2	Goddard Interceptor West of Inkster Road	623.35	598.32	4.5	2/7/17 18:35	1.9	600.2	○
	PD-1	Goddard Interceptor West of Allen Road	602.25	575.55	4.0	2/7/17 20:15	2.1	577.7	○
	PB-1	Northline Interceptor West of Fordline Road	596.15	569.55	3.0	2/7/17 17:45	1.6	571.1	○
	PA-4	Eureka Interceptor near Hannan Road	656.95	635.14	3.5	2/7/17 19:50	1.1	636.3	○
	PA-3	Eureka Interceptor at Inkster Road	622.65	601.02	3.5	2/7/17 18:25	2.1	603.1	○
	PA-2	Eureka Interceptor at Allen Road	601.55	576.18	4.0	2/7/17 18:50	3.0	579.1	○
	PA-1	Eureka Interceptor West of Fordline Road	594.95	570.40	4.0	2/7/17 18:40	2.6	573.0	○
	P-2 ²	Pennsylvania Interceptor East of Dix-Toledo Road	598.95	577.35	3.0	2/7/17 18:00	1.3	578.6	○
	P-1	Pennsylvania Interceptor East of Fort Street	591.45	545.45	6.5	2/7/17 18:20	7.1	552.5	⊗
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	578.33	544.07	3.5	2/7/17 18:20	5.8	549.8	⊗
Riverdrive (Controlled)	RR-1	Riverdrive Interceptor South of Visger Road	582.25	566.21	3.0	2/7/17 19:45	2.7	568.9	○
	EC-6	Riverdrive Interceptor South of Southfield Road	579.35	554.54	4.5	2/7/17 18:25	8.3	562.9	⊗
	RD-1	Riverdrive Interceptor North of Northline Road	577.85	550.66	6.0	2/7/17 18:25	7.5	558.1	⊗
	SW	On Southgate-Wyandotte Connection	578.00	538.00	6.5	2/7/17 18:20	12.4	550.4	⊗
Tunnel Connection Meters	TSO	Connection to Tunnel at Pelham Basin	609.16	585.34	4.0	2/7/17 15:05	0.4	585.7	○
	APO-1	Allen Park Overflow at Belmont Road and Rosedale Road	594.56	565.46	3.0	2/7/17 17:30	9.3	574.8	⊗
	APO-2	Allen Park Overflow at Belmont Road and Quandt Road	597.16	571.00	3.0	2/7/17 17:15	4.0	575.0	⊗
	CHPO	Pelham Interceptor South of R.R.	602.96	566.46	4.5	2/7/17 17:30	4.1	570.5	○
	CPO	Pelham Interceptor North of Haskell Road	601.46	568.00	4.5	2/7/17 17:35	4.2	572.2	○
	PDO	Goddard Interceptor at Allen Road	601.96	569.97	4.0	2/7/17 14:25	1.6	571.5	○
	ER-2	Eureka Relief Sewer Extension on Eureka Road at Inkster Road	623.73	591.48	4.5	2/7/17 22:05	0.7	592.1	○
	ER-1	Eureka Relief Sewer at Allen Road	602.81	560.47	4.5	2/7/17 23:55	0.5	561.0	○
	PM-1	Pennsylvania Interceptor at Fordline Road	593.06	548.92	6.5	2/7/17 18:40	5.0	554.0	○
Tunnel Level Sensors	L-3	Allen and I-75 (North)	602.56	543.04	7.0	2/7/17 18:30	6.3	549.3	○
	L-5	Pelham and Champaign	601.35	546.84	7.0	2/7/17 19:30	4.3	551.2	○
	L-7	Rosedale and Belmont	593.21	552.86	6.5	-	-	-	-
	L-8	Pennsylvania Ave. at Fordline	592.21	537.49	7.5	2/7/17 17:15	7.3	544.8	○
DWTF	IPS	Main Influent Pump Station Wet Well	-	528.46	NA	2/7/17 18:30	17.5	545.9	○
	TPS	Tunnel Pump Station Wet Well	-	524.71	NA	2/7/17 18:30	27.6	552.3	○

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 D-4 continued
Downriver Sewage Disposal System
Peak Hydraulic Grade Lines for Major Storm Events

System	Meter	Location	Rim Elevation (ft)	Invert Elevation (ft)	Diameter (ft)	Major Storm Event B March 30-31, 2017 1.96 inches		
						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	3/30/17 21:40	4.9	569.9
	PD-2	Goddard Interceptor West of Inkster Road	623.35	598.32	4.5	3/30/17 22:40	2.1	600.4
	PD-1	Goddard Interceptor West of Allen Road	602.25	575.55	4.0	3/30/17 21:10	2.4	578.0
	PB-1	Northline Interceptor West of Fordline Road	596.15	569.55	3.0	3/30/17 21:05	1.7	571.3
	PA-4	Eureka Interceptor near Hannan Road	656.95	635.14	3.5	3/30/17 23:25	1.4	636.5
	PA-3	Eureka Interceptor at Inkster Road	622.65	601.02	3.5	3/30/17 21:25	2.3	603.3
	PA-2	Eureka Interceptor at Allen Road	601.55	576.18	4.0	3/30/17 21:35	3.6	579.8
	PA-1	Eureka Interceptor West of Fordline Road	594.95	570.40	4.0	3/30/17 21:15	2.9	573.3
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	598.95	577.35	3.0	3/30/17 22:05	1.7	579.0
	P-1	Pennsylvania Interceptor East of Fort Street	591.45	545.45	6.5	3/30/17 23:30	7.1	552.6
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	578.33	544.07	3.5	3/30/17 21:05	4.2	548.3
Riverdrive (Controlled)	RR-1	Riverdrive Interceptor South of Visger Road	582.25	566.21	3.0	3/30/17 23:25	7.5	573.7
	EC-6	Riverdrive Interceptor South of Southfield Road	579.35	554.54	4.5	3/30/17 21:10	10.7	565.3
	RD-1	Riverdrive Interceptor North of Northline Road	577.85	550.66	6.0	3/30/17 21:50	8.1	558.7
	SW	On Southgate-Wyandotte Connection	578.00	538.00	6.5	3/30/17 18:50	10.6	548.6
Tunnel Connection Meters	TSO	Connection to Tunnel at Pelham Basin	609.16	585.34	4.0	3/31/17 6:00	1.9	587.3
	APO-1	Allen Park Overflow at Belmont Road and Rosedale Road	594.56	565.46	3.0	3/30/17 13:35	10.2	575.7
	APO-2	Allen Park Overflow at Belmont Road and Quandt Road	597.16	571.00	3.0	3/30/17 20:45	4.4	575.4
	CHPO	Pelham Interceptor South of R.R.	602.96	566.46	4.5	3/30/17 20:45	4.3	570.7
	CPO	Pelham Interceptor North of Haskell Road	601.46	568.00	4.5	3/30/17 21:10	4.4	572.4
	PDO	Goddard Interceptor at Allen Road	601.96	569.97	4.0	3/30/17 0:35	1.6	571.6
	ER-2	Eureka Relief Sewer Extension on Eureka Road at Inkster Road	623.73	591.48	4.5	3/31/17 2:05	1.0	592.5
	ER-1	Eureka Relief Sewer at Allen Road	602.81	560.47	4.5	3/30/17 23:40	1.0	561.5
	PM-1	Pennsylvania Interceptor at Fordline Road	593.06	548.92	6.5	3/30/17 22:00	6.0	554.9
Tunnel Level Sensors	L-3	Allen and I-75 (North)	602.56	543.04	7.0	3/30/17 22:30	4.2	547.2
	L-5	Pelham and Champaign	601.35	546.84	7.0	3/30/17 22:15	10.1	556.9
	L-7	Rosedale and Belmont	593.21	552.86	6.5	3/30/17 23:30	10.2	563.0
	L-8	Pennsylvania Ave. at Fordline	592.21	537.49	7.5	3/30/17 19:00	≥7.3	≥544.8
DWTF	IPS	Main Influent Pump Station Wet Well	-	528.46	NA	3/30/17 17:05	15.4	543.9
	TPS	Tunnel Pump Station Wet Well	-	524.71	NA	3/30/17 19:00	23.9	548.6

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 D-4 continued
Downriver Sewage Disposal System
Peak Hydraulic Grade Lines for Major Storm Events

System	Meter	Location	Rim Elevation (ft)	Invert Elevation (ft)	Diameter (ft)	Major Storm Event C May 4-5, 2017 1.94 inches			
						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	5/5/17 18:25	4.3	569.3	○
	PD-2	Goddard Interceptor West of Inkster Road	623.35	598.32	4.5	5/5/17 19:30	1.9	600.3	○
	PD-1	Goddard Interceptor West of Allen Road	602.25	575.55	4.0	5/5/17 18:35	2.2	577.8	○
	PB-1	Northline Interceptor West of Fordline Road	596.15	569.55	3.0	5/5/17 18:30	1.4	571.0	○
	PA-4	Eureka Interceptor near Hannan Road	656.95	635.14	3.5	5/5/17 20:25	1.2	636.3	○
	PA-3	Eureka Interceptor at Inkster Road	622.65	601.02	3.5	5/5/17 18:35	2.1	603.1	○
	PA-2	Eureka Interceptor at Allen Road	601.55	576.18	4.0	5/5/17 19:25	2.8	579.0	○
	PA-1	Eureka Interceptor West of Fordline Road	594.95	570.40	4.0	5/5/17 19:20	2.5	572.9	○
	P-2	Pennsylvania Interceptor East of Dix-Toledo Road	598.95	577.35	3.0	5/5/17 19:25	1.4	578.8	○
	P-1	Pennsylvania Interceptor East of Fort Street	591.45	545.45	6.5	5/5/17 20:35	5.5	550.9	○
	RV-1	Pennsylvania Interceptor West of Jefferson Avenue	578.33	544.07	3.5	5/5/17 20:35	3.7	547.8	⊙
Riverdrive (Controlled)	RR-1	Riverdrive Interceptor South of Visger Road	582.25	566.21	3.0	5/5/17 19:45	3.5	569.7	⊙
	EC-6	Riverdrive Interceptor South of Southfield Road	579.35	554.54	4.5	5/5/17 19:25	7.6	562.1	⊙
	RD-1	Riverdrive Interceptor North of Northline Road	577.85	550.66	6.0	5/5/17 20:45	6.1	556.8	⊙
	SW	On Southgate-Wyandotte Connection	578.00	538.00	6.5	5/5/17 20:35	10.3	548.3	⊙
Tunnel Connection Meters	TSO	Connection to Tunnel at Pelham Basin	609.16	585.34	4.0	5/5/17 17:55	0.4	585.7	○
	APO-1	Allen Park Overflow at Belmont Road and Rosedale Road	594.56	565.46	3.0	5/5/17 17:00	10.2	575.7	⊙
	APO-2	Allen Park Overflow at Belmont Road and Quandt Road	597.16	571.00	3.0	5/5/17 16:45	4.1	575.1	⊙
	CHPO	Pelham Interceptor South of R.R.	602.96	566.46	4.5	5/5/17 18:10	4.1	570.6	○
	CPO	Pelham Interceptor North of Haskell Road	601.46	568.00	4.5	5/5/17 17:10	4.1	572.1	○
	PDO	Goddard Interceptor at Allen Road	601.96	569.97	4.0	5/5/17 22:30	1.5	571.5	○
	ER-2	Eureka Relief Sewer Extension on Eureka Road at Inkster Road	623.73	591.48	4.5	5/5/17 21:15	0.8	592.3	○
	ER-1	Eureka Relief Sewer at Allen Road	602.81	560.47	4.5	5/5/17 23:05	0.7	561.1	○
	PM-1	Pennsylvania Interceptor at Fordline Road	593.06	548.92	6.5	5/5/17 19:55	4.4	553.3	○
Tunnel Level Sensors	L-3	Allen and I-75 (North)	602.56	543.04	7.0	5/5/17 20:45	4.8	547.8	○
	L-5	Pelham and Champaign	601.35	546.84	7.0	5/5/17 20:15	4.9	551.7	○
	L-7	Rosedale and Belmont	593.21	552.86	6.5	5/5/17 19:15	7.7	560.6	⊙
	L-8	Pennsylvania Ave. at Fordline	592.21	537.49	7.5	5/5/17 20:00	7.3	544.8	○
DWTF	IPS	Main Influent Pump Station Wet Well	-	528.46	NA	5/4/17 17:45	15.2	543.6	○
	TPS	Tunnel Pump Station Wet Well	-	524.71	NA	5/5/17 20:30	25.2	549.9	○

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: -

Figure D-1
Downriver Wastewater Treatment Facility
Major Storm Event A - 2/7/2017

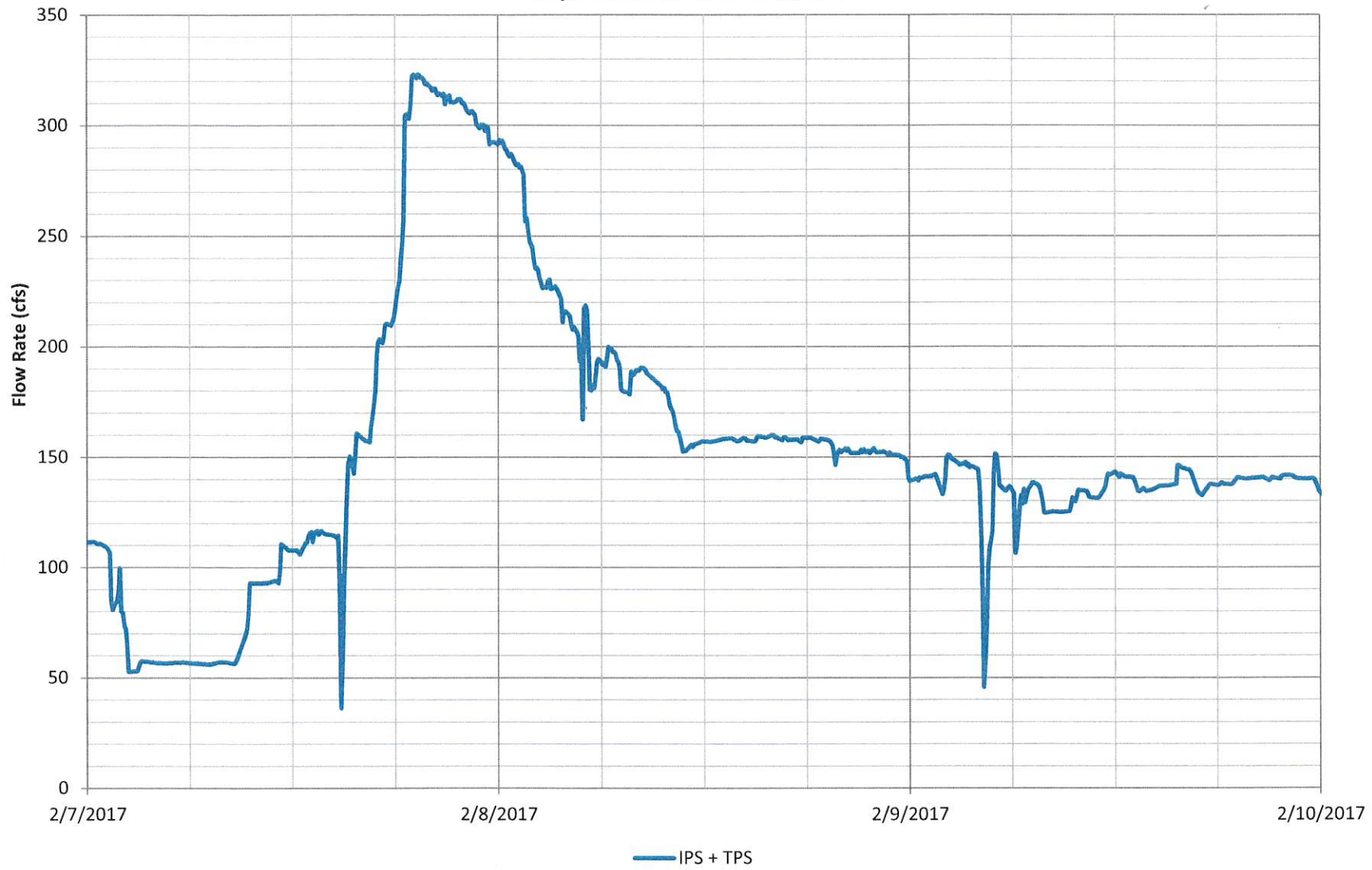


Figure D-2

Riverdrive Interceptor

Major Storm Event A - 2/7/2017

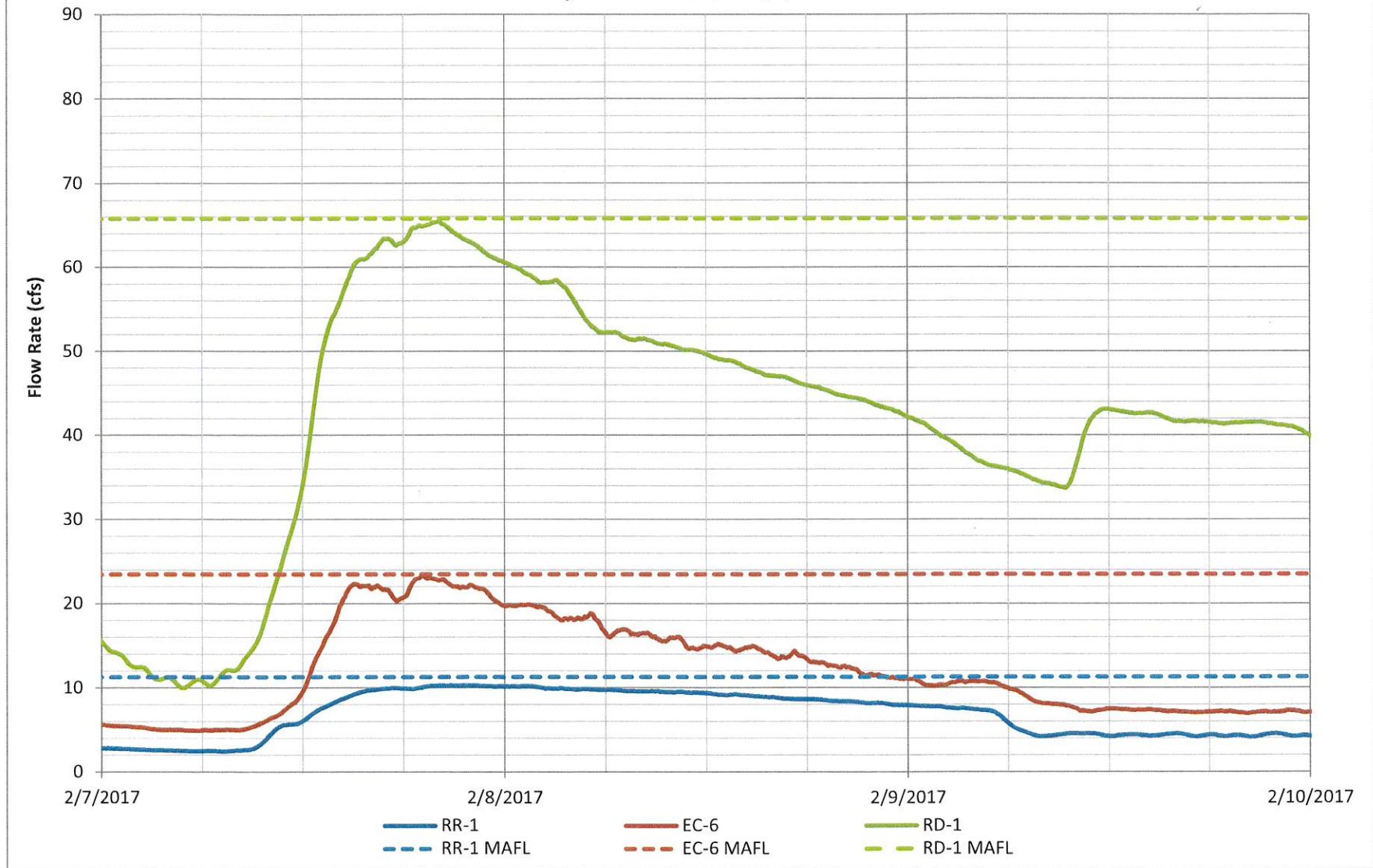


Figure D-3
Riverdrive Interceptor
Major Storm Event A - 2/7/2017

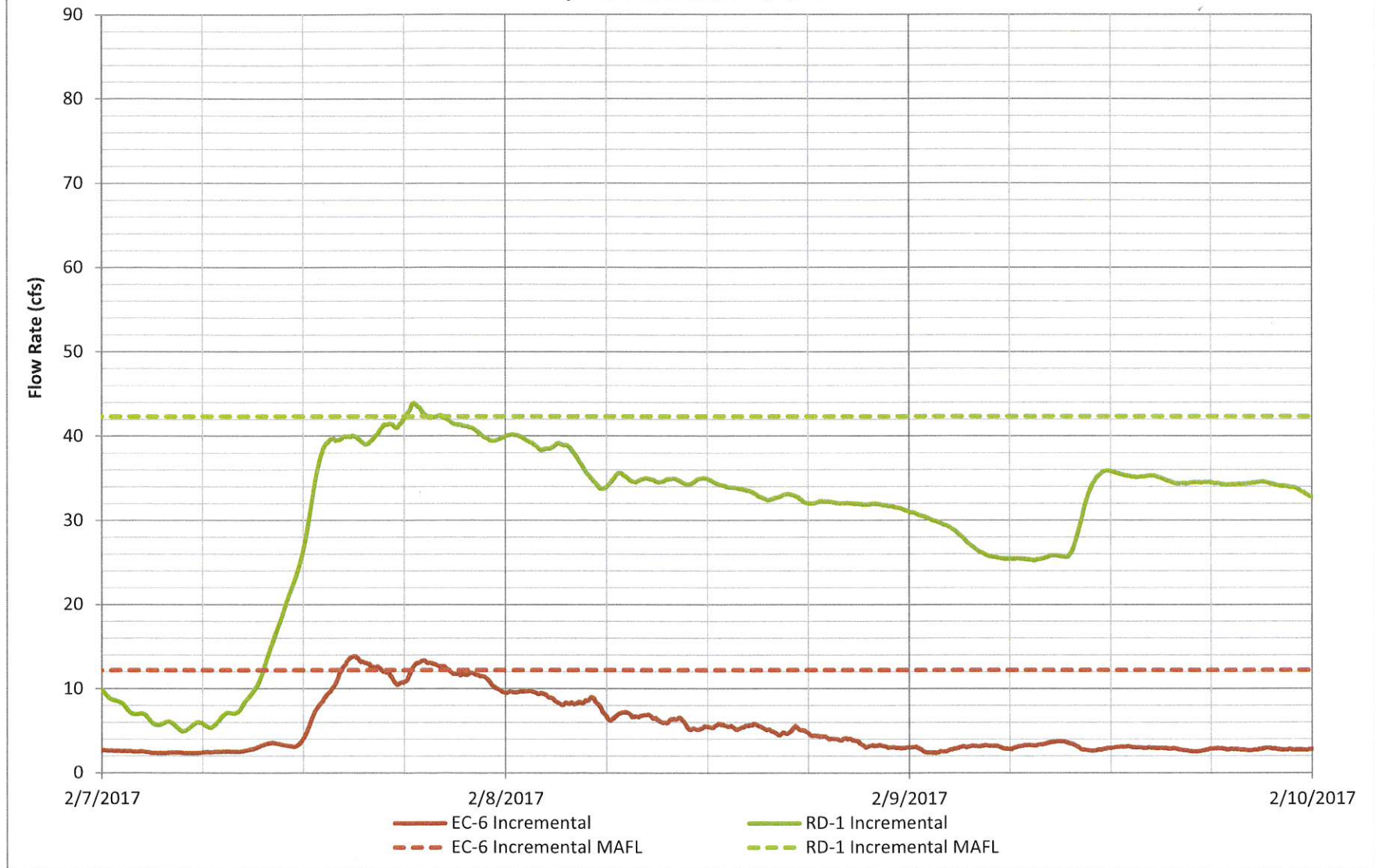


Figure D-4
SWRDDD Connection
Major Storm Event A - 2/7/2017

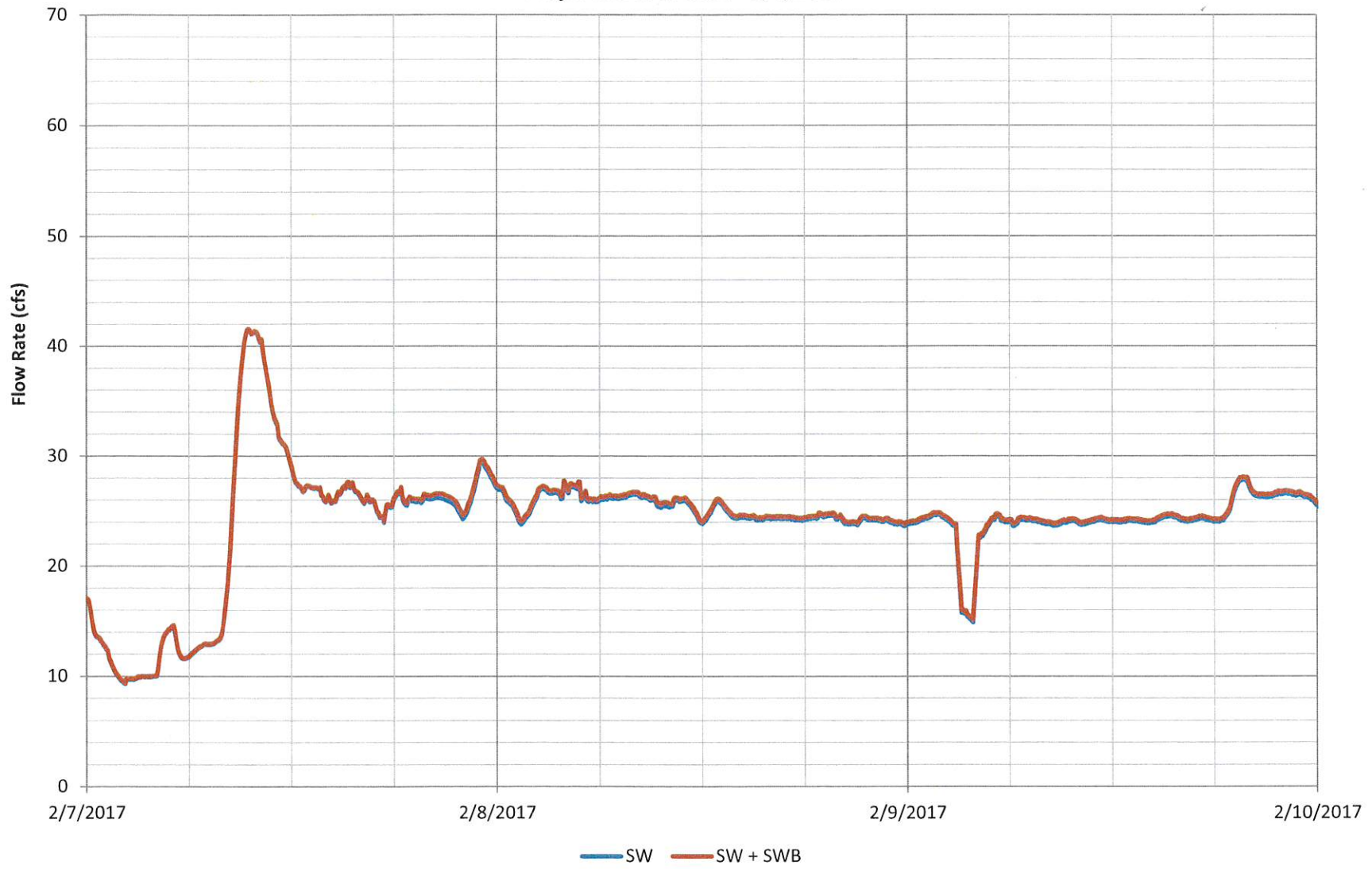


Figure D-5
Downriver Wastewater Treatment Facility
Major Storm Event B - 3/30-31/2017



Figure D-6

Riverdrive Interceptor

Major Storm Event B - 3/30-31/2017

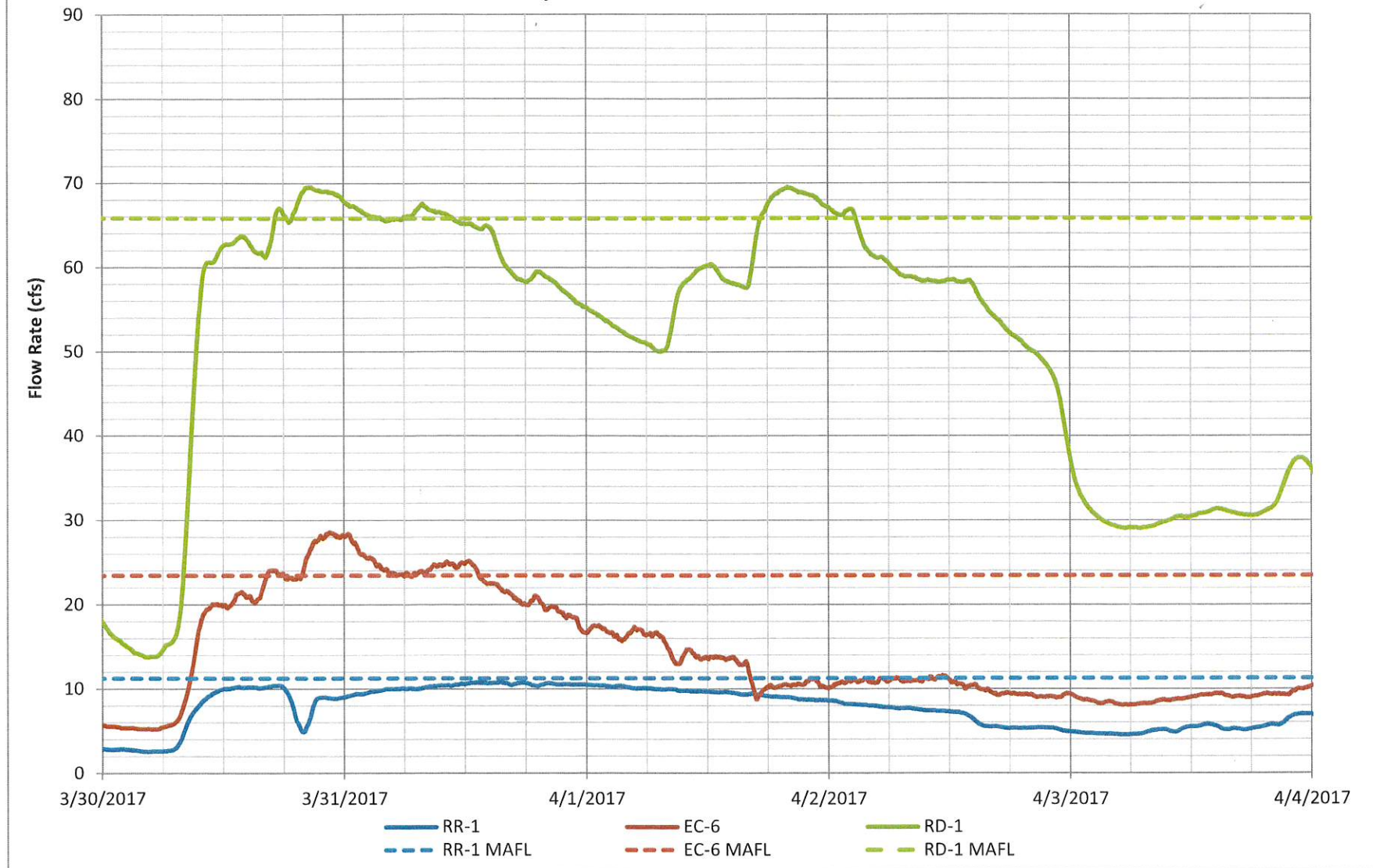


Figure D-7

Riverdrive Interceptor

Major Storm Event B - 3/30-31/2017

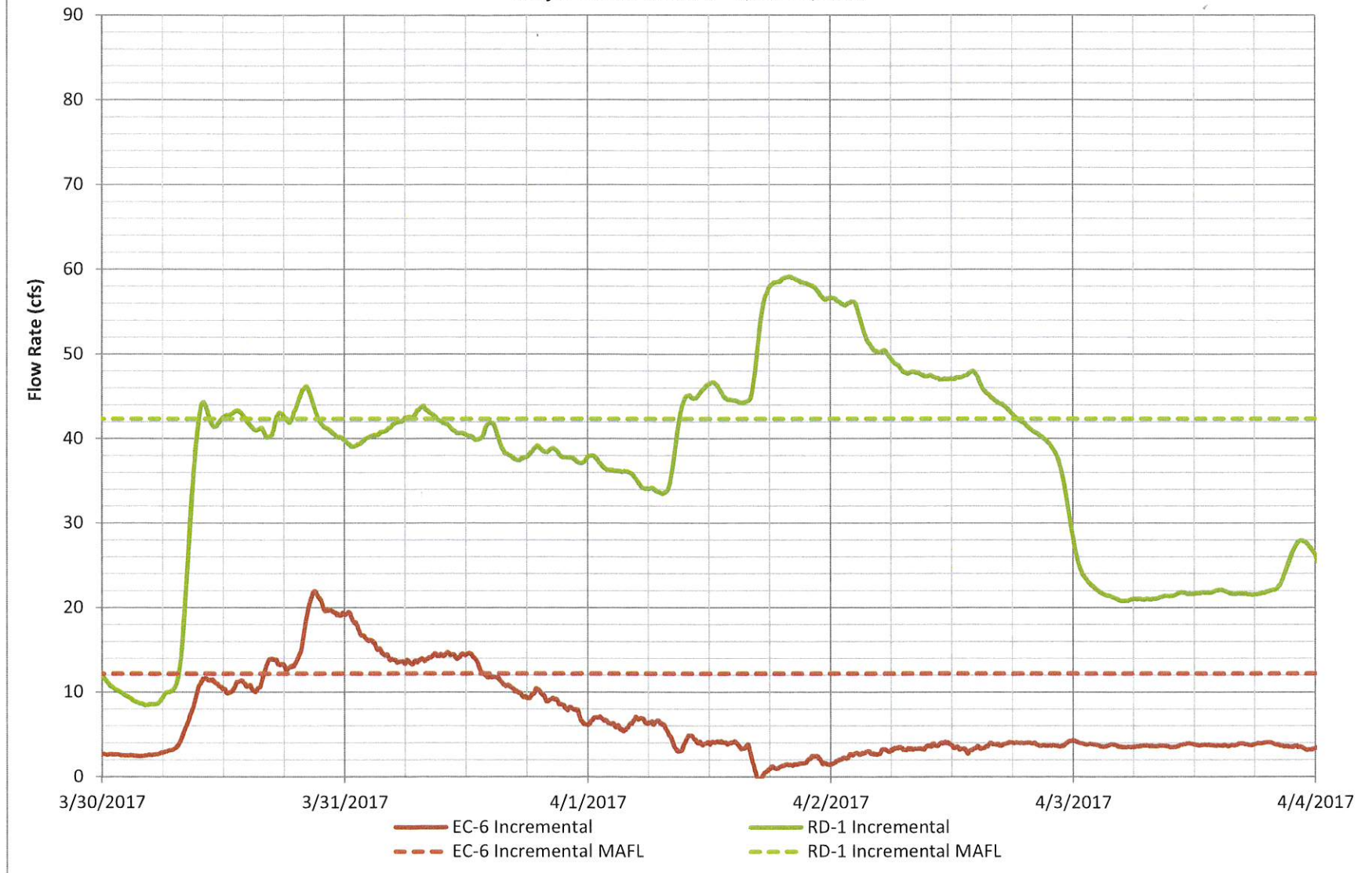


Figure D-8

SWRDDD Connection

Major Storm Event B - 3/30-31/2017

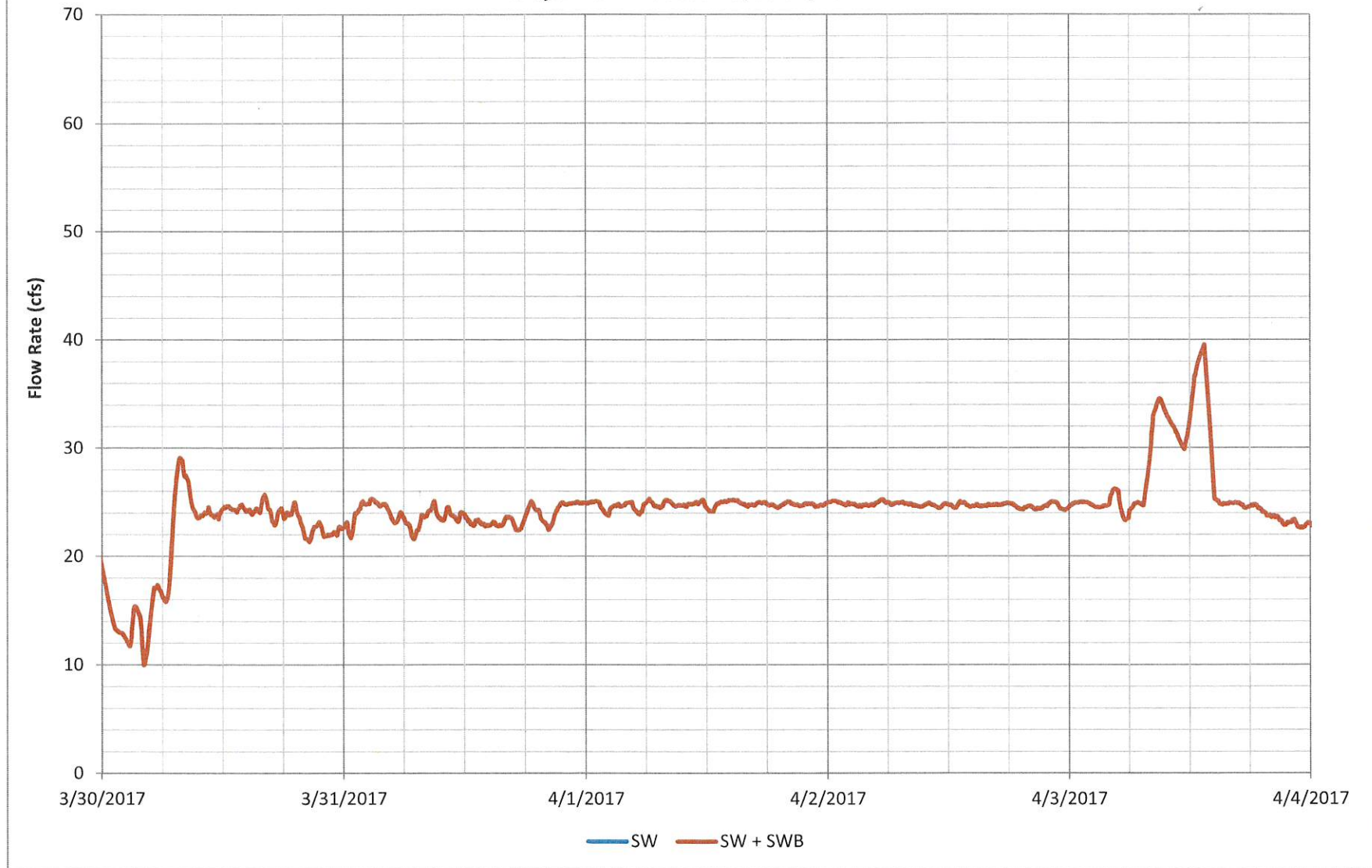


Figure D-9
Downriver Wastewater Treatment Facility
Major Storm Event C - 5/4-5/2017

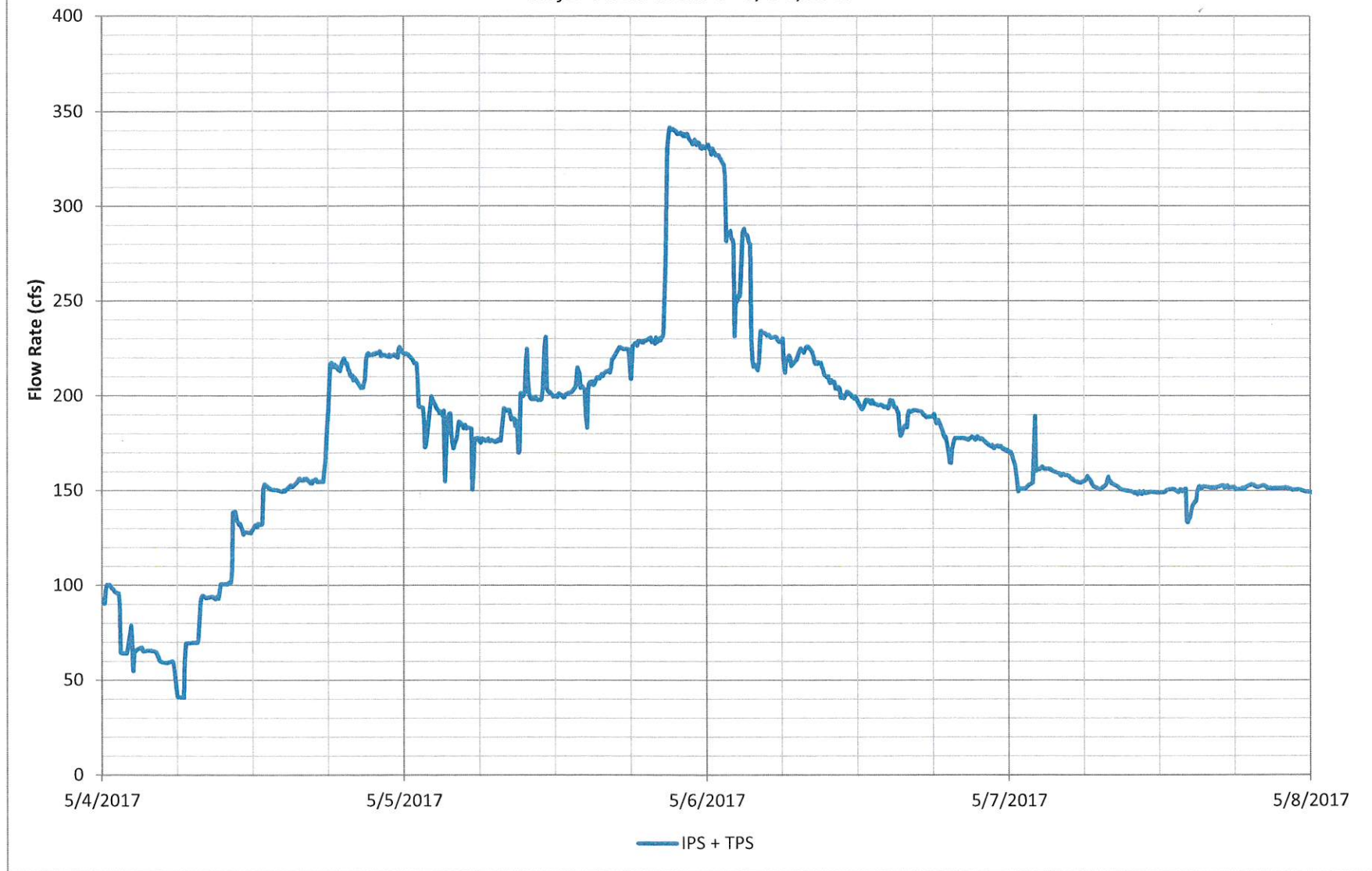


Figure D-10
Riverdrive Interceptor
Major Storm Event C - 5/4-5/2017

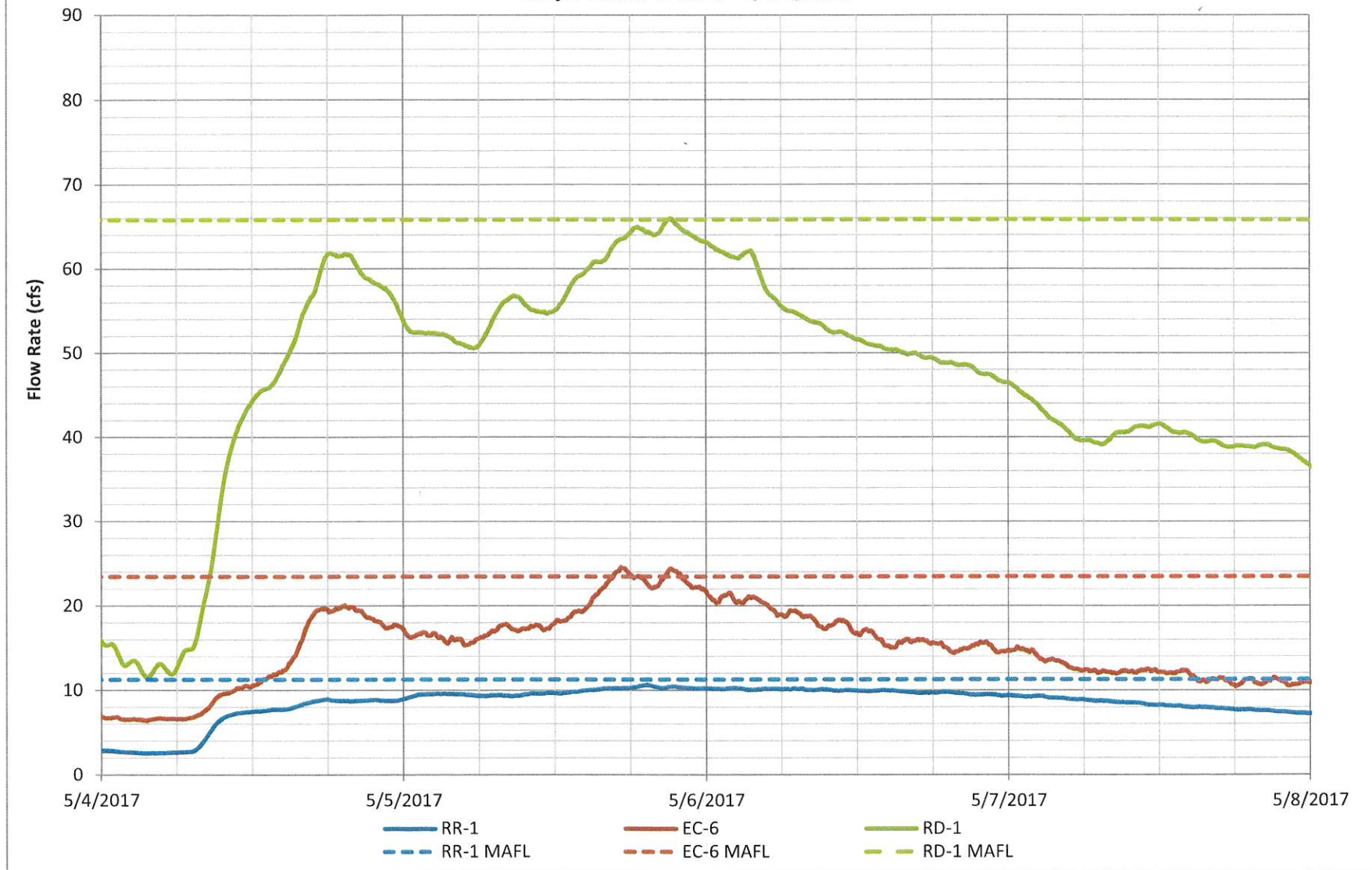
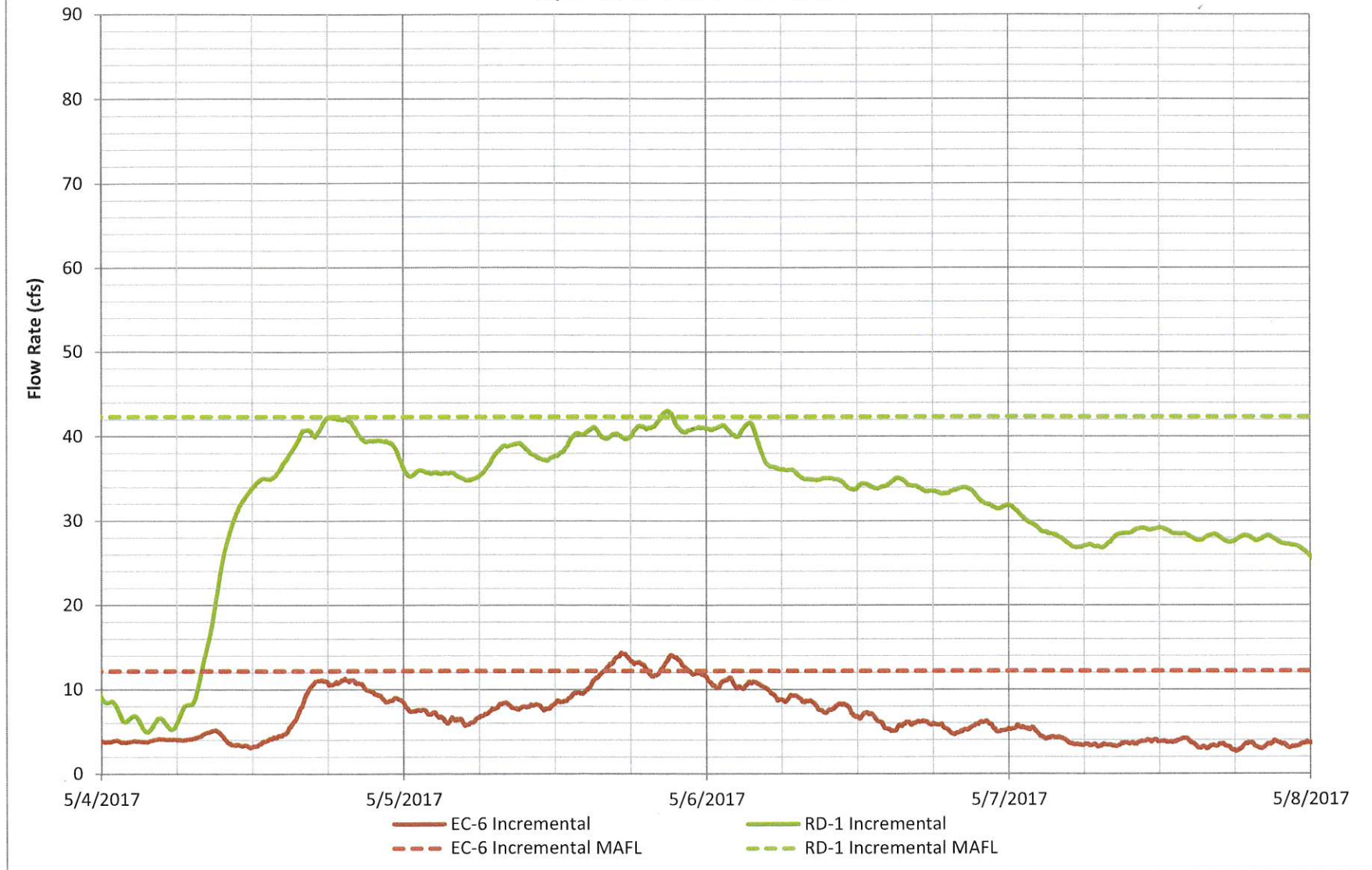


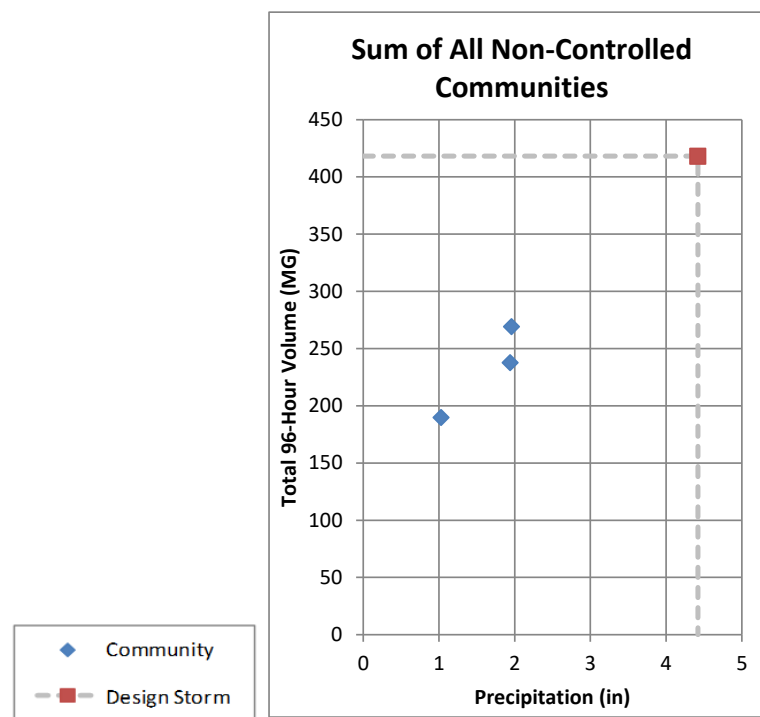
Figure D-11
Riverdrive Interceptor
Major Storm Event C - 5/4-5/2017



Major Storm Event C - 5/4-5/2017



Figure D-13
Downriver Sewage Disposal System
Total 96-Hour Volume and Precipitation for Major Storm Events Summarized by Community for 2017

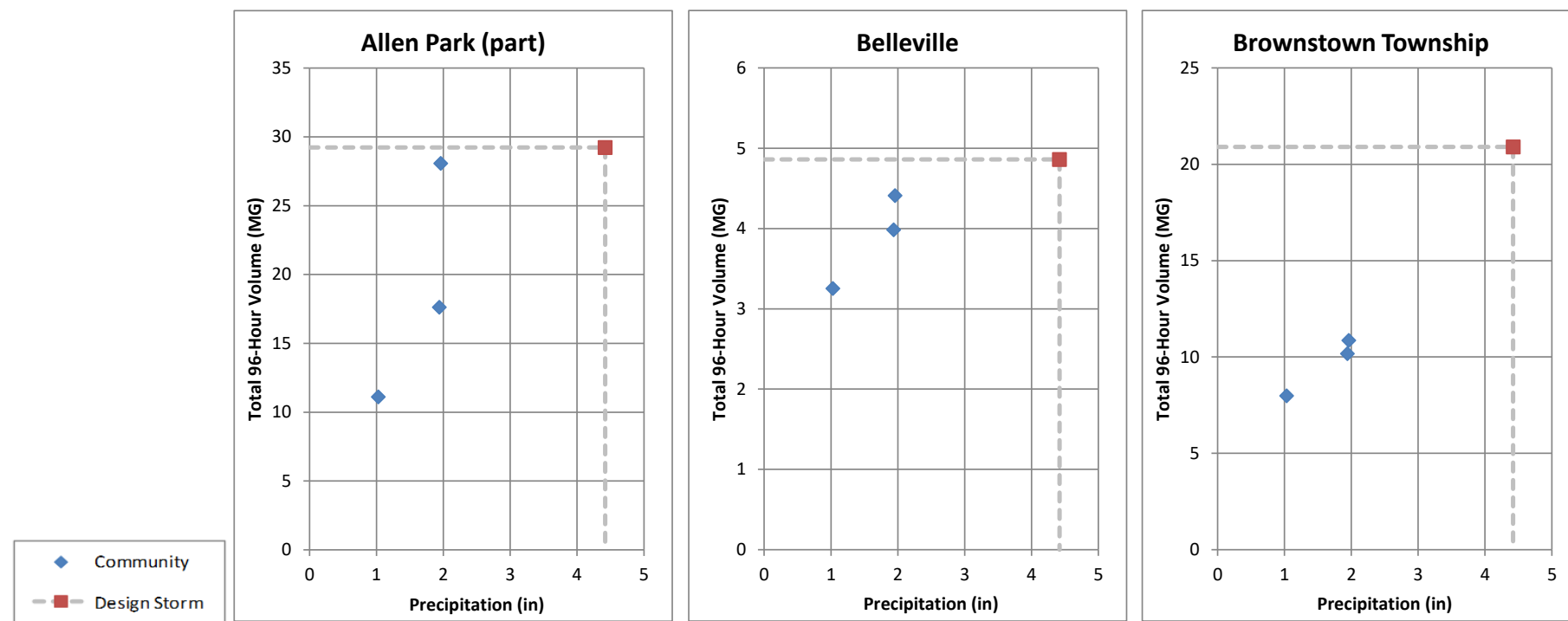


2017 Major Storm Event	Sum of All Non-Controlled Communities	
	DTW Precipitation (in)	96-hour Volume (MG)
A	1.03	189.85
B	1.96	269.24
C	1.94	237.78
Design Storm	4.42	418.21

Notes

1. A Major storm event has a peak 24 hour rainfall depth of at least 0.5 inches, an event total of at least 1.0 inch, and the peak hourly flow rate at DWTF reaches or exceeds 175 MGD.
2. The 4.42 inch storm event used in the design of the Downriver Regional Storage and Transport System.

Figure D-14
Downriver Sewage Disposal System
Total 96-Hour Volume and Precipitation for Major Storm Events Summarized by Community for 2017

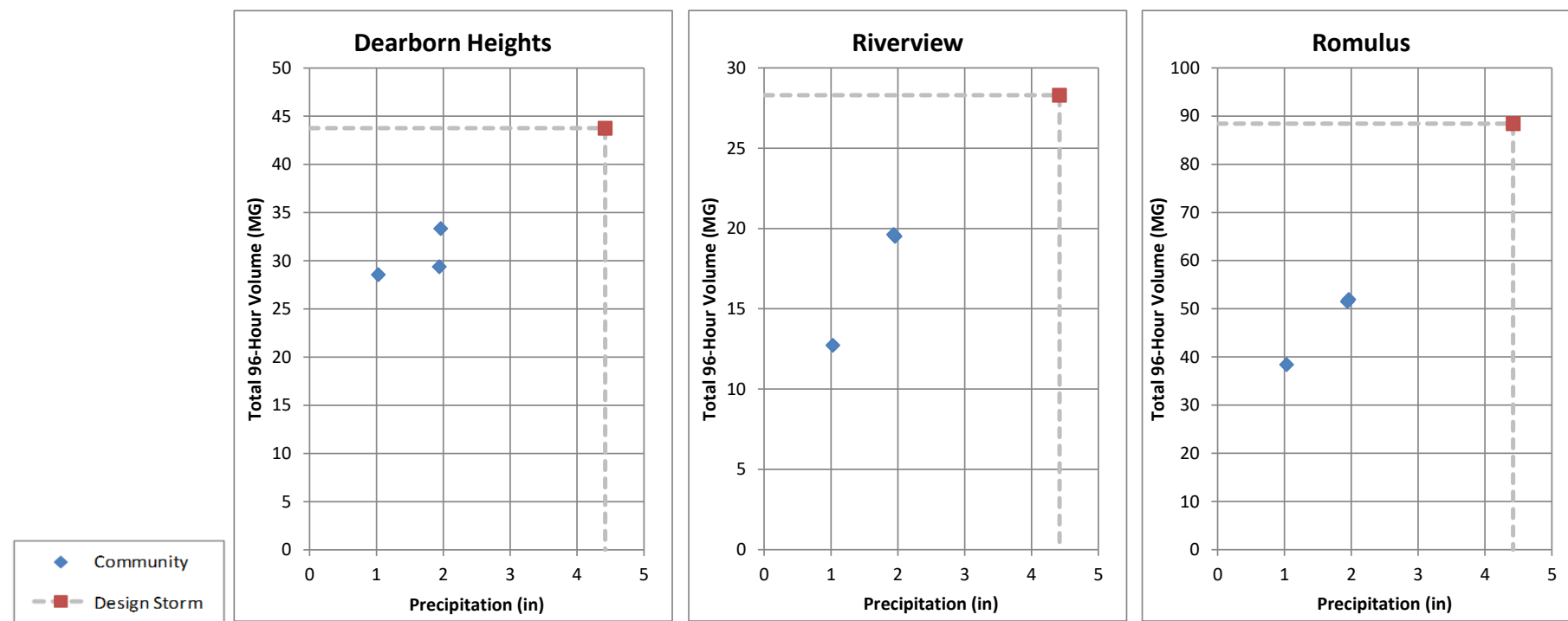


2017 Major Storm Event	Allen Park (part)		Belleville		Brownstown Township	
	DTW Precipitation (in)	96-hour Volume (MG)	DTW Precipitation (in)	96-hour Volume (MG)	DTW Precipitation (in)	96-hour Volume (MG)
A	1.03	11.11	1.03	3.25	1.03	7.98
B	1.96	28.07	1.96	4.41	1.96	10.87
C	1.94	17.62	1.94	3.99	1.94	10.17
Design Storm	4.42	29.23	4.42	4.86	4.42	20.90

Notes

1. A Major storm event has a peak 24 hour rainfall depth of at least 0.5 inches, an event total of at least 1.0 inch, and the peak hourly flow rate at DWTF reaches or exceeds 175 MGD.
2. The 4.42 inch storm event used in the design of the Downriver Regional Storage and Transport System.

Figure D-15
Downriver Sewage Disposal System
Total 96-Hour Volume and Precipitation for Major Storm Events Summarized by Community for 2017

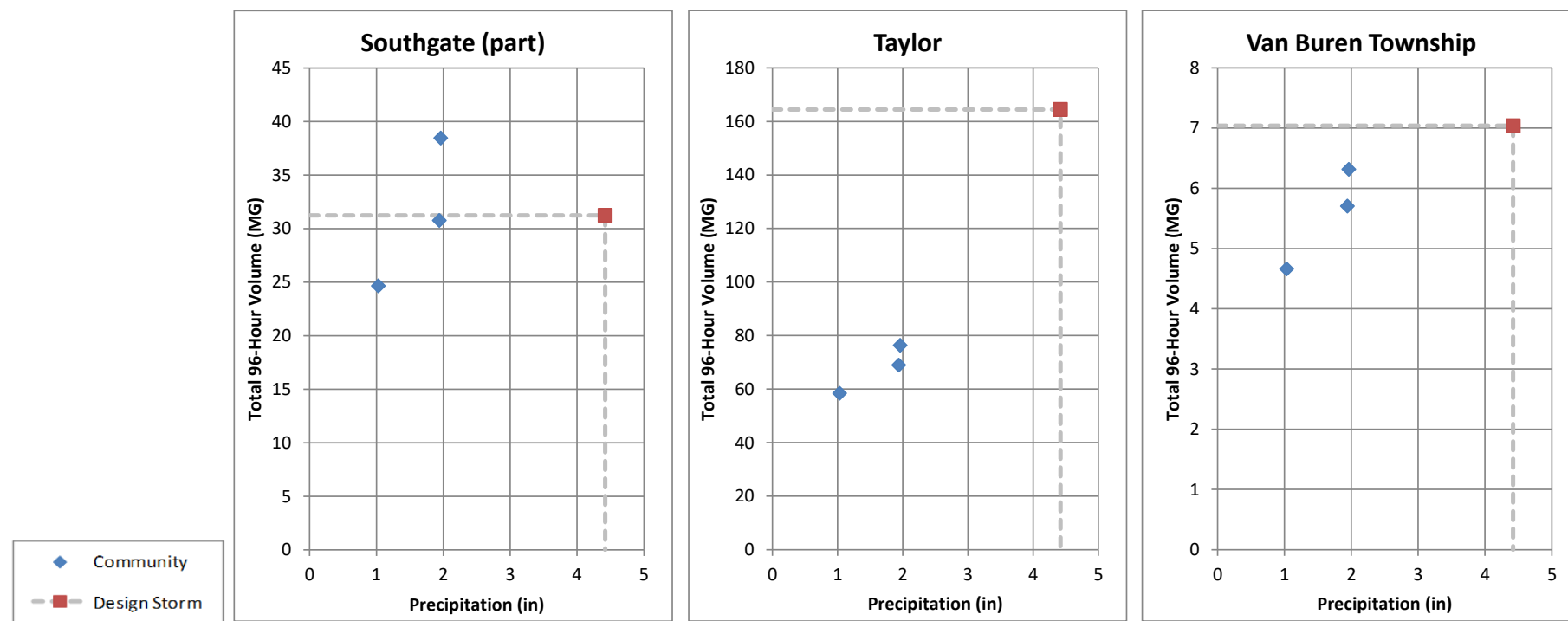


2017 Major Storm Event	Dearborn Heights		Riverview		Romulus	
	DTW Precipitation (in)	96-hour Volume (MG)	DTW Precipitation (in)	96-hour Volume (MG)	DTW Precipitation (in)	96-hour Volume (MG)
A	1.03	28.55	1.03	12.73	1.03	38.42
B	1.96	33.33	1.96	19.51	1.96	51.94
C	1.94	29.38	1.94	19.63	1.94	51.53
Design Storm	4.42	43.76	4.42	28.30	4.42	88.43

Notes

1. A Major storm event has a peak 24 hour rainfall depth of at least 0.5 inches, an event total of at least 1.0 inch, and the peak hourly flow rate at DWTF reaches or exceeds 175 MGD.
2. The 4.42 inch storm event used in the design of the Downriver Regional Storage and Transport System.

Figure D-16
Downriver Sewage Disposal System
Total 96-Hour Volume and Precipitation for Major Storm Events Summarized by Community for 2017



2017 Major Storm Event	Southgate (part)		Taylor		Van Buren Township	
	DTW Precipitation (in)	96-hour Volume (MG)	DTW Precipitation (in)	96-hour Volume (MG)	DTW Precipitation (in)	96-hour Volume (MG)
A	1.03	24.66	1.03	58.48	1.03	4.66
B	1.96	38.45	1.96	76.34	1.96	6.32
C	1.94	30.75	1.94	69.01	1.94	5.71
Design Storm	4.42	31.24	4.42	164.45	4.42	7.04

Notes

1. A Major storm event has a peak 24 hour rainfall depth of at least 0.5 inches, an event total of at least 1.0 inch, and the peak hourly flow rate at DWTF reaches or exceeds 175 MGD.
2. The 4.42 inch storm event used in the design of the Downriver Regional Storage and Transport System.