

Town of Friday Harbor Water, Wastewater, and Solid Waste Utilities Summary Reports

www.fridayharbor.org

Period ending: June 2018

Data provided by
Wayne Haefele, PE, Public Works Director
Water Utility, Mike Deegan, Water System Mgr.
Frank Byrne, Water Treatment Plant Operator
Wastewater Utility, Don Reitan, Leadman
Solid Waste Utility, Dave Smith, Leadman

Analysis & Reports prepared by
Mike Greene, System Administrator

Water - use MTDsourceDate

6 / 2018

Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

Water Class	Accounts	Gallons
Spe	3	104,540
Sfr	976	4,436,044
PA	76	1,538,400
Mfr	120	2,064,240
Ind	15	283,510
Com	218	2,455,402
TOTAL	1,408	10,882,136

Water - use MTD by LocationsourceDate
6 / 2018

Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

Water Class	Accounts	Gallons
Location: IN		
Spe	3	104,540
Sfr	622	2,586,064
PA	69	1,234,400
Mfr	115	1,839,630
Ind	13	283,510
Com	214	2,377,992
	<hr/>	
	1,036	8,426,136
Location: Out		
Sfr	354	1,849,980
PA	7	304,000
Mfr	5	224,610
Ind	2	0
Com	4	77,410
	<hr/>	
	372	2,456,000
TOTAL	1,408	10,882,136

Water use MTD - accounts with sewersourceDate

6 / 2018

Sewer Class	Accounts	Gallons
Location: IN		
Mfr In/low Strength	43	480,710
Com In/lo Strength	162	1,359,672
Dot In/lo Strength	3	97,470
Ind In/hi Strength	1	40,990
Ind In/lo Strength	10	228,020
Lmf In/lo Strength	1	3,200
Com In/hi Strength	41	945,910
Mfr In/lo Strength	66	806,010
Mhp In/lo Strength	2	449,600
PA In/hi Strength	3	100,460
PA In/lo Strength	43	627,980
Sfr IN Town	602	2,538,494
Low Rate / IN Town	6	12,680
	<hr/> 983	<hr/> 7,691,196
Location: Out		
UW Out/hi Strength	1	236,600
Mfr Out/lo Strength	1	4,850
Sfr Out of Town	4	17,160
	<hr/> 6	<hr/> 258,610
TOTAL	989	7,949,806

Refuse - pickups by Class

sourceDate

6 / 2018

Location	Class	Pickups
IN	Sfr	1,871.5
	RefuseOnly	452.5
	PA	252.5
	Mfr	477.5
	Ind	20.0
	Com	2,522.5
		<hr/> 5,596.5
Out	Sfr	0.0
	Mfr	9.5
		<hr/> 9.5
	TOTAL	<hr/> 5,606.0

Refuse - active accountssourceDate
6 / 2018

Location	Refuse Type	Accounts
IN		
	Small Dumpster	48
	PA	40
	Medium Dumpste	59
	Large Dumpster	70
	Compactors	3
	Cans Low Rate	6
	Cans	783
		<hr/>
		1,009
Out		
	Large Dumpster	1
	Cans	1
		<hr/>
		2
		<hr/>
	TOTAL	1,011

Recycle - pickups by Class

sourceDate
6 / 2018

Location	Class	Pickups
IN	Sfr	641
	RefuseOnly	16
	PA	0
	Mfr	52
	Ind	2
	Com	11
		<hr/> 722
Out	Sfr	0
	Mfr	0
		<hr/> 0
	TOTAL	722

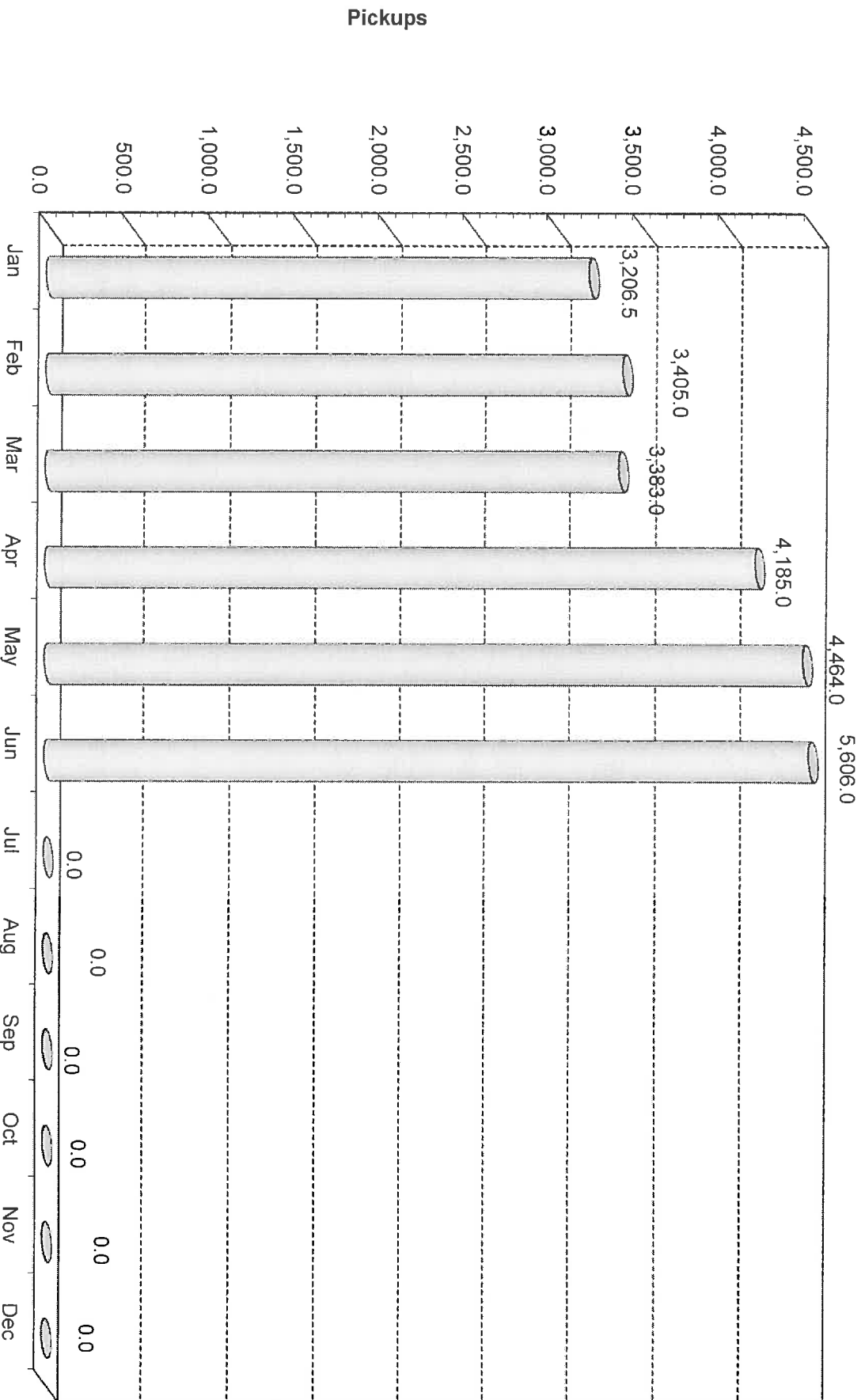
SumOfWaterConsumptionMTD
10,882,136

MeterNumber	
37220983	Town, water pump house
57311019	Gene Wilson, MR WASH
77804342	MAQUITE, BASE BALL
70840413	1st street, rain garden

Refuse Pickups - 2018 YTD

Account Type	SFR	Refuse Only	P.A	MFR	IND	COM	Other	Total
Jan	1,433.0	151.5	145.5	435.5	24.5	1,016.5		3,206.5
Feb	1,347.0	149.0	172.5	385.5	18.0	1,333.0		3,405.0
Mar	1,218.0	166.0	165.5	389.0	15.5	1,429.0		3,383.0
Apr	1,635.0	206.0	205.5	458.5	21.0	1,659.0		4,185.0
May	1,558.0	247.5	210.5	421.0	19.0	2,008.0		4,464.0
Jun	1,871.5	452.5	252.5	487.0	20.0	2,522.5		5,606.0
Jul								0.0
Aug								0.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	9,062.5	1,372.5	1,152.0	2,576.5	118.0	9,968.0	0.0	24,249.5

Refuse Pickups by Month - 2018



Finish Water Flow to Town
 source: Water Treatment Facility Monthly Report

Revised reporting period: per K. Anderson 03/06/17
 to reflect meter reading dates (?).
 Start/End dates may change monthly.

32 :count of days in reporting period.

May-18		Jun-18	
day	flow (total flow)	day	flow (total flow)
15	443	1	385
16	255	2	359
17	415	3	310
18	316	4	355
19	300	5	378
20	371	6	370
21	319	7	367
22	411	8	398
23	393	9	413
24	356	10	352
25	367	11	324
26	376	12	366
27	417	13	381
28	429	14	432
29	381	15	443
30	377		
31	380		

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">days</td><td style="border: none;"></td></tr> <tr><td style="text-align: center;">17</td><td style="text-align: right;">6306</td></tr> </table>	days		17	6306	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">days</td><td style="border: none;"></td></tr> <tr><td style="text-align: center;">15</td><td style="text-align: right;">5633</td></tr> </table>	days		15	5633
days									
17	6306								
days									
15	5633								
TOTAL DAYS	32								
TOTAL FLOW	11939								
	1,000's gallons								

TOWN OF FRIDAY HARBOR

Flow to Town (Gross Water Production) 2018

Revised reporting period: per K. Anderson 03/06/17
to reflect meter reading dates (?).

Reporting (meter reading) period			days in period	Gross flow to Town	Flow to Town (millions)
<i>from WTP Chem. Wts. & Finish Flow to Town Report</i>					
15-Dec	to	14-Jan	31	7,347,000	7,347
15-Jan	to	14-Feb	31	7,054,000	7,054
15-Feb	to	14-Mar	28	6,566,000	6,566
15-Mar	to	15-Apr	32	8,256,000	8,256
16-Apr	to	14-May	29	7,932,000	7,932
15-May	to	15-Jun	32	11,939,000	11,939
	to		0	0	
	to		0	0	
	to		0	0	
	to		0	0	
	to		0	0	
	to		0	0	
	to		0	0	
			183	49,094,000	49094.0

Net Water Production - 2018

amounts in gallons

	Jan	Feb	Mar	Apr	May	Jun
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	7,347,000	7,054,000	6,566,000	8,256,000	7,932,000	11,939,000
3% meter loss	181,712	177,273	160,076	200,073	214,798	326,464
Flushing	230,042	227,445	143,800	216,200	232,500	187,190
SJC#3 FD use	5,000	5,000	5,000	5,000	5,000	23,400
Leaks			216,000	247,840	14,400	0
notes			University Road	1st St. N 78,600	Tucker/Larson 60,480	
other non-metered use				Strider-Tucker Ave.	849 Spring St.	
Additional water in storage						
notes						
Net production	6,930,246	6,644,282	6,041,124	7,508,287	7,404,822	11,401,946
Total other uses	-416,754	-409,718	-524,876	-747,713	-527,178	-537,054
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	0	0	0	0	0	0
3% meter loss	0	0	0	0	0	0
Flushing						
SJC#3 FD use						
Leaks						
notes						
other non-metered use						
notes						
Total other uses	0	0	0	0	0	0
Net production	0	0	0	0	0	0

Water Consumption & Production

Revised meter loss reporting begin 07/09 (per Robert Krebs, Evergreen Rural Water Assoc.)

Period	USE (consumption)	Cumulative Use YTD	Flow (production)	Unaccounted over / (under)	Cumulative Flow YTD	Average Daily Flow	
2016							
<i>gallons</i>	Jan-16	6,904,531	6,697,000	207,531		216,032	
	Feb-16	6,043,999	12,948,530	-177,001	12,918,000	222,179	
	Mar-16	5,087,613	18,036,143	-972,387	18,978,000	195,484	
	Apr-16	7,613,121	25,649,264	-6,879	26,598,000	254,000	
	May-16	8,678,417	34,327,681	-317,583	35,594,000	290,194	
	Jun-16	10,308,890	44,636,572	-414,110	46,317,000	357,433	
	Jul-16	12,724,140	57,360,712	-241,860	59,283,000	418,258	YTD
	Aug-16	14,723,626	72,084,337	-1,091,374	75,098,000	510,161	Unaccounted
	Sep-16	12,583,251	84,667,588	-12,749	87,694,000	419,867	as % of Flow
Average	Oct-16	8,473,803	93,141,391	421,803	95,746,000	259,742	0.38%
Monthly Use	Nov-16	6,714,525	99,855,916	1,656,525	100,804,000	168,600	
8,877,761	Dec-16	6,677,221	106,533,136	1,356,221	106,125,000	171,645	408,136
YEAR TOTAL:	12	107,043,584	Cumulative Metered/Other Use YTD	106,125,000	408,136 Unaccounted	Cumulative 3% meter loss 2,915,731	290,300
2017							
<i>gallons</i>	Jan-17	8,403,985	8,484,000	-80,015		273,677	
	Feb-17	6,321,628	14,725,613	-770,372	15,576,000	253,286	
	Mar-17	6,110,787	20,836,401	-688,213	22,375,000	219,323	
	Apr-17	8,344,725	29,181,126	-1,394,275	32,114,000	324,633	
	May-17	7,085,245	36,266,371	672,245	38,527,000	206,871	
	Jun-17	10,048,456	46,314,827	-256,544	48,832,000	343,500	
	Jul-17	14,681,313	60,996,140	-353,687	63,867,000	485,000	YTD
	Aug-17	13,661,250	74,657,390	-1,147,750	78,676,000	477,710	Unaccounted
	Sep-17	14,093,015	88,750,405	-874,985	93,644,000	498,933	as % of Flow
Average	Oct-17	7,823,149	96,573,554	-216,851	101,684,000	259,355	5.10%
Monthly Use	Nov-17	6,680,806	103,254,360	-592,194	108,957,000	242,433	
9,176,124	Dec-17	6,859,133	110,113,492	-211,867	116,028,000	228,097	-5,914,508
YEAR TOTAL:	12	110,113,492	Cumulative Metered/Other Use YTD	116,028,000	-5,914,508 Unaccounted	Cumulative 3% meter loss 2,989,222	317,735
2018							
<i>gallons</i>	Jan-18	6,473,834	7,347,000	-873,166		237,000	
	Feb-18	6,318,823	12,792,658	-735,177	14,401,000	251,929	
	Mar-18	5,860,732	18,653,389	-705,268	20,967,000	211,806	
	Apr-18	7,416,815	26,070,204	-839,185	29,223,000	275,200	
	May-18	7,687,108	33,757,312	-244,892	37,155,000	255,871	
	Jun-18	11,419,190	45,176,502	-519,810	49,094,000	397,967	
	Jul-18	0	45,176,502	0	49,094,000	0	YTD
	Aug-18	0	45,176,502	0	49,094,000	0	Unaccounted
	Sep-18	0	45,176,502	0	49,094,000	0	as % of Flow
Average	Oct-18	0	45,176,502	0	49,094,000	0	7.98%
Monthly Use	Nov-18	0	45,176,502	0	49,094,000	0	
7,529,417	Dec-18	0	45,176,502	0	49,094,000	0	-3,917,498
YEAR TOTAL:	6	45,176,502	Cumulative Metered/Other Use YTD	49,094,000	-3,917,498 Unaccounted	Cumulative 3% meter loss 1,260,396	271,629

3 YEAR AVERAGES:	Use	Flow	Daily Flow	3 Year Loss as % of Flow
	5,074,003 gal/month	9,041,567 gal/month	196,455	3.47%

source: Monthly Water Treatment Plant Report & utility.mdb's 3 yr cumulative flow 271,247,000
3 yr unaccounted -9,423,869

Utilization of Sustainable Annual Water System Capacity

Period start: Jul-17

Period end: Jun-18

Sustainable Annual Yield (TFH
Comprehensive Water System Plan
Update, June, 2013, page 3-6)

205 million gallons

Annual use - 12 month period
percent of Sustainable Annual Yield

116.3 million gallons
56.7%

exceeds Sustainable Yield?

No

Rainfall - Trout Lake Water Treatment Facility

source: Water Treatment Plant Weather Reports

all figures in inches

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	average (2005-14)
JAN	5.49	6.87	6.51	2.34	3.82	4.73	5.90	3.46	4.14	2.86	4.61
FEB	1.01	1.61	2.83	1.78	1.50	1.24	2.74	3.38	1.32	4.22	2.16
MAR	2.33	0.91	3.70	1.99	2.05	3.30	3.37	3.09	3.63	3.88	2.83
APR	1.37	2.23	1.49	1.32	2.07	1.47	2.96	1.91	2.70	1.94	1.95
MAY	1.08	1.24	0.78	1.26	1.69	2.09	3.07	1.09	2.20	1.05	1.56
JUN	1.63	0.56	1.03	1.16	0.35	1.10	0.68	2.60	0.83	0.52	1.05
JUL	0.70	0.26	1.56	0.21	0.45	0.11	0.84	1.04	0.00	0.36	0.55
AUG	1.60	0.03	0.64	1.88	0.81	0.72	0.29	0.00	0.95	0.49	0.74
SEP	0.94	1.15	0.54	0.84	1.58	4.35	0.72	0.12	5.08	1.34	1.67
OCT	3.50	1.89	2.12	1.83	5.24	1.38	2.29	6.40	1.42	4.00	3.01
NOV	4.28	10.43	2.32	5.15	6.76	2.94	4.50	3.32	2.49	4.00	4.62
DEC	2.89	3.74	4.59	3.70	1.80	6.55	1.88	4.79	2.28	3.37	3.56
Total	26.82	30.92	28.11	23.46	28.12	29.98	29.24	31.20	27.04	28.03	28.29

Cumulative thru

JUN	12.91	13.42	16.34	9.85	11.48	13.93	18.72	15.53	14.82	14.47
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all figures in inches

JAN	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
FEB	3.97	2.17	1.60	5.10						
MAR	2.95	4.83	2.99	3.80						
APR	3.62	2.88	3.27	1.48						
MAY	0.51	0.75	2.20	3.10						
JUN	0.30	0.48	1.61	0.07						
JUL	0.14	1.22	0.75	0.72						
AUG	0.36	0.32	0.15							
SEP	0.94	0.11	0.11							
OCT	1.28	1.40	0.71							
NOV	3.53	4.80	4.28							
DEC	6.19	3.47	4.32							
Total	5.26	4.02	3.83							
Total	29.05	26.45	25.82	14.27	0.00	0.00	0.00	0.00	0.00	0.00

Cumulative thru

JUN	11.49	12.33	12.42	14.27	0.00	0.00	0.00	0.00	0.00	0.00
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Trout Lake Reservoir Level

Months with positive levels may reflect that a removable 7.25 inch riser has been added to the top of the original spillway.

end of	inches above/(below) original spillway	end of	inches above/(below) original spillway	end of	inches above/(below) original spillway
Jan-12	-1.75	Jan-15	0.00	Jan-18	0.00
Feb-12	0.00	Feb-15	0.00	Feb-18	0.00
Mar-12	0.00	Mar-15	0.00	Mar-18	8.75
Apr-12	8.00	Apr-15	6.50	Apr-18	8.25
May-12	0.00	May-15	0.00	May-18	1.50
Jun-12	7.00	Jun-15	-13.00	Jun-18	-10.50
Jul-12	-19.00	Jul-15	-29.50	Jul-18	
Aug-12	-32.75	Aug-15	-42.25	Aug-18	
Sep-12	-45.00	Sep-15	-49.50	Sep-18	
Oct-12	-48.00	Oct-15	-54.50	Oct-18	
Nov-12	-24.25	Nov-15	-17.25	Nov-18	
Dec-12	0.00	Dec-15	0.00	Dec-18	
Jan-13	0.00	Jan-16	0.00	Jan-19	
Feb-13	0.00	Feb-16	0.00	Feb-19	
Mar-13	0.00	Mar-16	0.00	Mar-19	
Apr-13	8.50	Apr-16	6.00	Apr-19	
May-13	3.75	May-16	-2.50	May-19	
Jun-13	-3.75	Jun-16	-11.00	Jun-19	
Jul-13	-21.00	Jul-16	-21.00	Jul-19	
Aug-13	-34.25	Aug-16	-36.50	Aug-19	
Sep-13	-39.25	Sep-16	-49.50	Sep-19	
Oct-13	-43.50	Oct-16	-51.00	Oct-19	
Nov-13	-44.75	Nov-16	-45.50	Nov-19	
Dec-13	-26.00	Dec-16	-10.35	Dec-19	
Jan-14	0.00	Jan-17	0.00	Jan-20	
Feb-14	0.00	Feb-17	0.00	Feb-20	
Mar-14	0.00	Mar-17	2.75	Mar-20	
Apr-14	8.25	Apr-17	9.00	Apr-20	
May-14	5.00	May-17	4.75	May-20	
Jun-14	7.00	Jun-17	-4.00	Jun-20	
Jul-14	-20.50	Jul-17	-19.00	Jul-20	
Aug-14	-30.25	Aug-17	-32.00	Aug-20	
Sep-14	-42.75	Sep-17	-43.00	Sep-20	
Oct-14	-45.25	Oct-17	-50.50	Oct-20	
Nov-14	-46.50	Nov-17	-48.00	Nov-20	
Dec-14	0.00	Dec-17	-11.50	Dec-20	

Prevention of Wastewater Facility Overloading

Period start: Jun-17
 Period end: May-18

INFLUENT BOD LOADING (pounds per day)	AVG. EFFLUENT FLOW (millions of gallons per day)	SUSPENDED SOLIDS LOADING (pounds per day)
Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 1,600	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 0.69000	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 1,110
85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 1,360	85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 0.58650	85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 944
Month with highest average loading in period Jul-16	Month with highest average flow in period Feb-16	Month with highest average loading in period Oct-16
Highest average monthly loading in period (pounds per day) 559	Highest average monthly flow in period (millions of gallons per day) 0.4088414	Highest average monthly loading in period (pounds per day) 488
% of Design Criteria 35%	% of Design Criteria 59%	% of Design Criteria 44%
exceeds Design Criteria? No	exceeds Design Criteria? No	exceeds Design Criteria? No
Previous month's loading 509	Previous month's flow 0.2541	Previous month's loading 319
Following month's loading 524	Following month's flow 0.2799	Following month's loading 245
exceeds Planning Threshold for 3 consecutive months? No	exceeds Planning Threshold for 3 consecutive months? No	exceeds Planning Threshold for 3 consecutive months? No