

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

[www.fridayharbor.org](http://www.fridayharbor.org)

**Period ending: Aug 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

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**Water - use MTD**sourceDate  
8 / 2018

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

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<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
Spe	3	348,102
Sfr	988	5,545,970
PA	76	2,668,710
Mfr	120	2,133,950
Ind	15	316,650
Com	218	3,089,539
<b>TOTAL</b>	<b>1,420</b>	<b>14,102,921</b>

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**Water - use MTD by Location**sourceDate  
8 / 2018

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

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<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Spe	3	348,102
Sfr	633	3,059,800
PA	69	2,112,820
Mfr	115	1,883,320
Ind	13	314,470
Com	214	3,030,509
	<hr/>	
	1,047	10,749,021
<b>Location: Out</b>		
Sfr	355	2,486,170
PA	7	555,890
Mfr	5	250,630
Ind	2	2,180
Com	4	59,030
	<hr/>	
	373	3,353,900
<b>TOTAL</b>	<b>1,420</b>	<b>14,102,921</b>

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**Water use MTD - accounts with sewer**sourceDate  
8 / 2018

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<b>Sewer Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Mfr In/low Strength	55	708,860
Com In/lo Strength	161	1,707,679
Dot In/lo Strength	3	83,670
Ind In/hi Strength	1	63,150
Ind In/lo Strength	10	231,080
Lmf In/lo Strength	1	4,050
Com In/hi Strength	42	1,243,650
Mfr In/lo Strength	55	672,740
Mhp In/lo Strength	2	410,100
PA In/hi Strength	3	167,640
PA In/lo Strength	43	1,147,770
Sfr IN Town	612	3,005,510
Low Rate / IN Town	5	11,670
	<b>993</b>	<b>9,457,569</b>
<b>Location: Out</b>		
UW Out/hi Strength	1	321,600
Mfr Out/lo Strength	1	9,570
Sfr Out of Town	4	19,330
	<b>6</b>	<b>350,500</b>
<b>TOTAL</b>	<b>999</b>	<b>9,808,069</b>

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**Refuse - pickups by Class**sourceDate  
8 / 2018

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<b>Location</b>	<b>Class</b>	<b>Pickups</b>
IN	Sfr	1,567.0
	RefuseOnly	669.0
	PA	217.0
	Mfr	455.0
	Ind	20.5
	Com	2,962.5
		<hr/> 5,891.0
Out	Sfr	0.0
	Mfr	10.5
		<hr/> 10.5
<b>TOTAL</b>		<hr/> <b>5,901.5</b>

**Refuse - active accounts**

sourceDate  
8 / 2018

Location	Refuse Type	Accounts
IN	Small Dumpster	48
	PA	39
	Medium Dumpste	50
	Large Dumpster	62
	Compactors	3
	Cans Low Rate	5
	Cans	803
		<hr/> 1,010
Out	Large Dumpster	1
	Cans	1
		<hr/> 2
<b>TOTAL</b>		<b>1,012</b>

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**Recycle - pickups by Class**sourceDate  
8 / 2018

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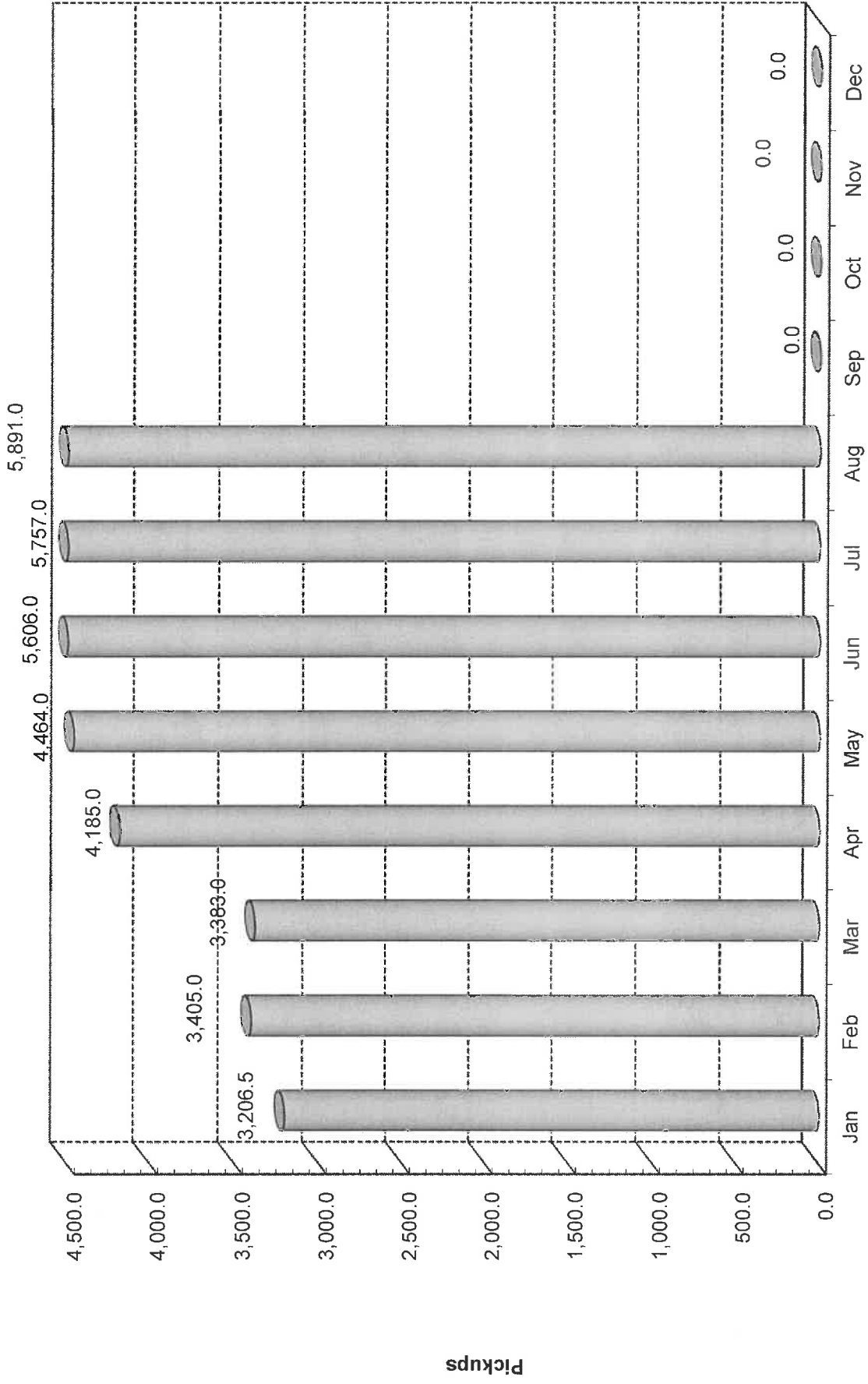
Location	Class	Pickups
IN	Sfr	583
	RefuseOnly	10
	PA	0
	Mfr	48
	Ind	2
	Com	5
		<hr/> 648
Out	Sfr	0
	Mfr	0
		<hr/> 0
	<b>TOTAL</b>	<b>648</b>

## 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	1,697.0	577.5	199.5	480.5	22.5	2,780.0		5,757.0
Aug	1,567.0	669.0	217.0	455.0	20.5	2,962.5		5,891.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	12,326.5	2,619.0	1,568.5	3,512.0	161.0	15,710.5	0.0	35,897.5



# 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.

30 :count of days in reporting period.

Jul-18		Aug-18	
day	flow (total flow)	day	flow (total flow)
16	521	1	503
17	545	2	462
18	490	3	591
19	557	4	485
20	444	5	444
21	552	6	502
22	510	7	518
23	521	8	539
24	559	9	562
25	583	10	504
26	560	11	500
27	589	12	360
28	555	13	506
29	582	14	491
30	394		
31	435		

<u>days</u> 16                      8397	<u>days</u> 14                      6967
TOTAL DAYS	<u>30</u>
TOTAL FLOW	<u>15364</u>
	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. &amp; Finish Flow to Town Report</i>	<i>to</i>				
15-Dec	<i>to</i>	14-Jan	31	7,347,000	7,347
15-Jan	<i>to</i>	14-Feb	31	7,054,000	7,054
15-Feb	<i>to</i>	14-Mar	28	6,566,000	6,566
15-Mar	<i>to</i>	15-Apr	32	8,256,000	8,256
16-Apr	<i>to</i>	14-May	29	7,932,000	7,932
15-May	<i>to</i>	15-Jun	32	11,939,000	11,939
16-Jun	<i>to</i>	15-Jul	30	14,181,000	14,181
16-Jul	<i>to</i>	14-Aug	30	15,364,000	15,364
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
			243	78,639,000	78639.0

TOWN OF FRIDAY HARBOR

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	Tucker/Larson	
other non-metered use				78,600	60,480	
notes				Strider-Tucker Ave.	849 Spring St.	
Additional water in storage						
notes						
Total other uses	-416,754	-409,718	-524,876	-747,713	-527,178	-537,054
<b>Net production</b>	<b>6,930,246</b>	<b>6,644,282</b>	<b>6,041,124</b>	<b>7,508,287</b>	<b>7,404,822</b>	<b>11,401,946</b>

	Jul	Aug	Sep	Oct	Nov	Dec
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	14,181,000	15,364,000	0	0	0	0
3% meter loss	273,310	292,320	0	0	0	0
Flushing	108,000	108,000				
SJC#3 FD use	5,000	5,000				
Leaks	72,000					
notes						
other non-metered use						
notes						
Total other uses	-458,310	-405,320	0	0	0	0
<b>Net production</b>	<b>13,722,690</b>	<b>14,958,680</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

TOWN OF FRIDAY HARBOR

# 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	
<b>2016</b>							
<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
<b>YEAR TOTAL:</b>	12	107,043,584	Cumulative Metered/Other Use YTD	106,125,000	408,136 Unaccounted	Cumulative 3% meter loss	290,300 2,915,731
<b>2017</b>							
<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
<b>YEAR TOTAL:</b>	12	110,113,492	Cumulative Metered/Other Use YTD	116,028,000	-5,914,508 Unaccounted	Cumulative 3% meter loss	317,735 2,989,222
<b>2018</b>							
<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	13,151,864	58,328,366	-1,029,136	63,275,000	457,452	YTD
	Aug-18	14,508,241	72,836,607	-855,759	78,639,000	495,613	Unaccounted
	Sep-18	0	72,836,607	0	78,639,000	0	as % of Flow
Average	Oct-18	0	72,836,607	0	78,639,000	0	7.38%
Monthly Use	Nov-18	0	72,836,607	0	78,639,000	0	
9,104,576	Dec-18	0	72,836,607	0	78,639,000	0	-5,802,393
<b>YEAR TOTAL:</b>	8	72,836,607	Cumulative Metered/Other Use YTD	78,639,000	-5,802,393 Unaccounted	Cumulative 3% meter loss	322,855 2,064,291

<b>3 YEAR</b>	Use	Flow	Daily Flow	3 Year Loss
<b>AVERAGES:</b>	5,621,256 :gal/month	9,399,750 :gal/month	213,530	as % of Flow 3.76%

source: Monthly Water Treatment Plant Report & utility.mdb's      3 yr cumulative flow 300,792,000  
3 yr unaccounted -11,308,764

## Utilization of Sustainable Annual Water System Capacity

Period start: Sep-17

Period end: Aug-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

116.0 million gallons  
56.6%

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

<b>AUG</b>	<b>15.21</b>	<b>13.71</b>	<b>18.54</b>	<b>11.94</b>	<b>12.74</b>	<b>14.76</b>	<b>19.85</b>	<b>16.57</b>	<b>15.77</b>	<b>15.32</b>
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*all figures in inches*

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
JAN	3.97	2.17	1.60	5.10						
FEB	2.95	4.83	2.99	3.80						
MAR	3.62	2.88	3.27	1.48						
APR	0.51	0.75	2.20	3.10						
MAY	0.30	0.48	1.61	0.07						
JUN	0.14	1.22	0.75	0.72						
JUL	0.36	0.32	0.15	0.18						
AUG	0.94	0.11	0.11	0.01						
SEP	1.28	1.40	0.71							
OCT	3.53	4.80	4.28							
NOV	6.19	3.47	4.32							
DEC	5.26	4.02	3.83							
Total	29.05	26.45	25.82	14.46	0.00	0.00	0.00	0.00	0.00	0.00

Cumulative thru

<b>AUG</b>	<b>12.79</b>	<b>12.76</b>	<b>12.68</b>	<b>14.46</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
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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	-29.50
Aug-12	-32.75	Aug-15	-42.25	Aug-18	-42.00
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: Aug-17  
 Period end: Jul-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 <b>35%</b>	% of Design Criteria <b>59%</b>	% of Design Criteria <b>44%</b>
exceeds Design Criteria? <b>No</b>	exceeds Design Criteria? <b>No</b>	exceeds Design Criteria? <b>No</b>
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? <b>No</b>	exceeds Planning Threshold for 3 consecutive months? <b>No</b>	exceeds Planning Threshold for 3 consecutive months? <b>No</b>