



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

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

**Period ending: May 2020**

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 MTD**sourceDate  
5 / 2020

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

---

<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
Spe	3	102,507
Sfr	993	3,435,470
PA	78	673,160
Mfr	128	1,960,930
Ind	14	83,580
Com	220	979,450
<b>TOTAL</b>	<b>1,436</b>	<b>7,235,097</b>

---

---

**Water use MTD - accounts with sewer**sourceDate  
5 / 2020

---

<b>Sewer Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Mfr In/low Strength	62	686,910
Com In/lo Strength	161	583,600
Dot In/lo Strength	3	20,800
Ind In/hi Strength	1	12,380
Ind In/lo Strength	10	59,440
Lmf In/lo Strength	1	2,160
Com In/hi Strength	44	319,000
Mfr In/lo Strength	56	661,510
Mhp In/lo Strength	2	383,500
PA In/hi Strength	3	34,500
PA In/lo Strength	43	338,540
Sfr IN Town	620	2,252,010
Low Rate / IN Town	6	7,170
	<b>1012</b>	<b>5,361,520</b>
<b>Location: Out</b>		
UW Out/hi Strength	1	50,000
Mfr Out/lo Strength	1	8,530
Sfr Out of Town	4	7,510
	<b>6</b>	<b>66,040</b>
<b>TOTAL</b>	<b>1018</b>	<b>5,427,560</b>

---

---

**Water - use MTD by Location**sourceDate  
5 / 2020

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

---

<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Spe	2	102,247
Sfr	640	2,281,100
PA	69	483,720
Mfr	123	1,794,230
Ind	13	81,700
Com	217	975,460
	<hr/>	
	1,064	5,718,457
<b>Location: Out</b>		
Spe	1	260
Sfr	353	1,154,370
PA	9	189,440
Mfr	5	166,700
Ind	1	1,880
Com	3	3,990
	<hr/>	
	372	1,516,640
<b>TOTAL</b>	<b>1,436</b>	<b>7,235,097</b>

---

**Refuse - pickups by Class**sourceDate  
5 / 2020

---

Location	Class	Pickups
IN		
	Sfr	2,175.0
	RefuseOnly	181.5
	PA	64.5
	Mfr	550.0
	Ind	18.0
	Com	1,321.5
		<hr/>
		4,310.5
Out		
	Mfr	8.5
		<hr/>
		8.5
		<hr/>
	<b>TOTAL</b>	<b>4,319.0</b>

---

**Refuse - active accounts**sourceDate  
5 / 2020

---

Location	Refuse Type	Accounts
IN		
	Small Dumpster	45
	PA	39
	Medium Dumpste	53
	Large Dumpster	62
	Compactors	4
	Cans Low Rate	6
	Cans	841
		<hr/> 1,050
Out		
	Large Dumpster	1
		<hr/> 1
	<b>TOTAL</b>	<b>1,051</b>

---

---

**Recycle - pickups by Class**sourceDate  
5 / 2020

---

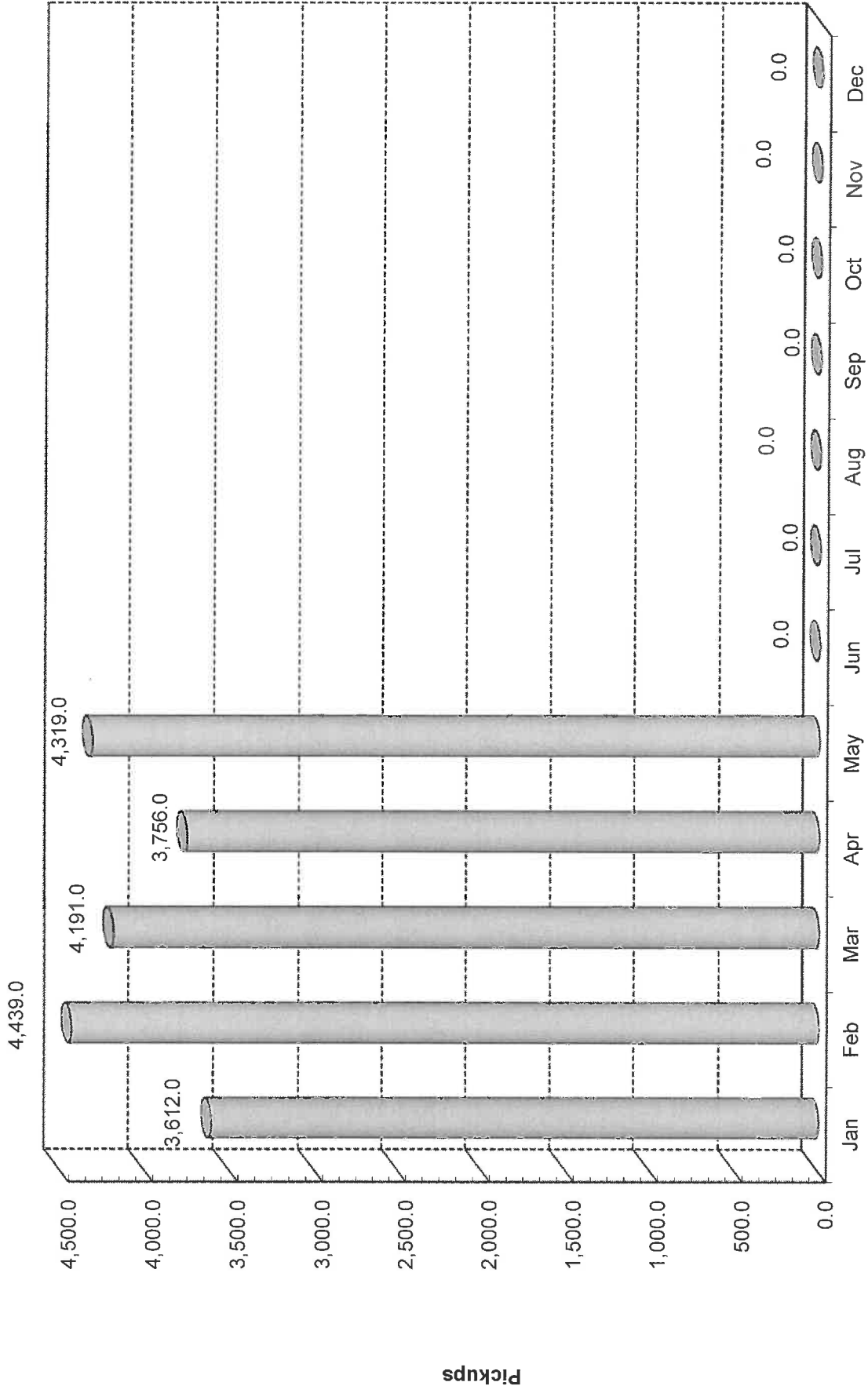
Location	Class	Pickups
IN	Sfr	748
	RefuseOnly	29
	PA	0
	Mfr	65
	Ind	6
	Com	7
		<hr/> 855
Out	Mfr	0
		<hr/> 0
	<b>TOTAL</b>	<hr/> <b>855</b>

## Refuse Pickups - 2020 YTD

Account Type	SFR	Refuse Only	P.A	MFR	IND	COM	Other	Total
Jan	1,273.0	188.0	143.5	410.0	15.5	1,578.5	3.5	3,612.0
Feb	1,593.0	239.5	166.0	473.0	21.5	1,943.0	3.0	4,439.0
Mar	1,482.0	223.5	153.0	426.5	19.0	1,883.5	3.5	4,191.0
Apr	1,785.0	164.5	59.0	501.5	16.5	1,221.5	8.0	3,756.0
May	2,175.0	181.5	64.5	550.0	18.0	1,321.5	8.5	4,319.0
Jun								0.0
Jul								0.0
Aug								0.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	8,308.0	997.0	586.0	2,361.0	90.5	7,948.0	26.5	20,317.0



# Refuse Pickups by Month - 2020



**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.

	April 15, 2020		May 14, 2020
day	flow (total flow)	day	flow (total flow)
13		1	265
14		2	301
15	251	3	241
16	318	4	227
17	303	5	217
18	269	6	308
19	263	7	271
20	270	8	230
21	265	9	298
22	293	10	313
23	231	11	307
24	276	12	336
25	245	13	281
26	202	14	217
27	225	15	
28	270	16	
29	265		
30	213		
31			
days	4159	days	3812
	16		14
TOTAL DAYS		30	
TOTAL FLOW			7971
			1,000's gallons

TOWN OF FRIDAY HARBOR

## Flow to Town (Gross Water Production) 2020

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>				
16-Dec	<i>to</i>	12-Jan	28	6,771,000	6,771
13-Jan		13-Feb	32	7,991,000	7,991
14-Feb		15-Mar	31	7,169,000	7,169
16-Mar		14-Apr	30	6,984,000	6,984
15-Apr		14-May	30	7,971,000	7,971
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			151	36,886,000	36886.0

## Net Water Production - 2020

*amounts in gallons*

	Jan	Feb	Mar	Apr	May	Jun
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	6,771,000	7,991,000	7,169,000	6,984,000	7,971,000	0
3% meter loss	179,127	203,162	174,375	181,651	217,053	0
Flushing	129,200	155,800	282,600	126,975	212,000	0
SJC#3 FD use	5,000	5,000	5,000	5,000	5,000	5,000
Leaks	206,582	222,800	206,100	308,146	196,400	196,400
notes						
other non-metered use						
notes						
Additional water in storage						
notes						
notes						
Total other uses	-519,909	-586,762	-688,075	-621,772	-630,453	0
<b>Net production</b>	<b>6,251,091</b>	<b>7,404,238</b>	<b>6,500,925</b>	<b>6,362,228</b>	<b>7,340,547</b>	<b>0</b>

	Jul	Aug	Sep	Oct	Nov	Dec
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						
notes						
Total other uses	0	0	0	0	0	0
<b>Net production</b>	<b>0</b>	<b>0</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>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	7,054,000	-735,177	14,401,000	251,929	
Mar-18	5,860,732	18,653,389	6,566,000	-705,268	20,967,000	211,806	
Apr-18	7,416,815	26,070,204	8,256,000	-839,185	29,223,000	275,200	
May-18	7,687,108	33,757,312	7,932,000	-244,892	37,155,000	255,871	
Jun-18	11,419,190	45,176,502	11,939,000	-519,810	49,094,000	397,967	
Jul-18	13,151,864	58,328,366	14,181,000	-1,029,136	63,275,000	457,452	YTD
Aug-18	14,508,241	72,836,607	15,364,000	-855,759	78,639,000	495,613	Unaccounted
Sep-18	12,454,526	85,291,133	13,769,000	-1,314,474	92,408,000	458,967	as % of Flow
Average	8,624,468	93,915,601	9,176,000	-551,532	101,584,000	296,000	5.10%
Monthly Use	7,401,706	101,317,307	8,322,000	-920,294	109,906,000	277,400	
9,031,729	7,063,439	108,380,746	8,225,000	-1,161,561	118,131,000	265,323	-5,914,508
<b>YEAR TOTAL:</b>	<b>12</b>	<b>108,899,956</b>	<b>Cumulative</b>	<b>118,131,000</b>	<b>-9,750,254</b>	<b>Cumulative</b>	<b>323,377</b>
		<b>Metered/Other</b>	<b>Use YTD</b>		<b>Unaccounted</b>	<b>3% meter loss</b>	<b>2,915,731</b>
<b>2019</b>							
<i>gallons</i>							
Jan-19	6,193,133		6,982,000	-788,867		225,226	
Feb-19	7,413,239	13,606,372	7,865,000	-451,761	14,847,000	280,893	
Mar-19	6,065,311	19,671,683	7,468,000	-1,402,689	22,315,000	240,903	
Apr-19	7,852,517	27,524,200	8,604,000	-751,483	30,919,000	286,800	
May-19	8,660,158	36,184,358	9,522,000	-861,842	40,441,000	307,161	
Jun-19	12,028,022	48,212,379	12,495,000	-466,978	52,936,000	416,500	
Jul-19	12,121,969	60,334,348	12,159,000	-37,031	65,095,000	392,226	YTD
Aug-19	13,865,988	74,200,336	13,977,000	-111,012	79,072,000	450,871	Unaccounted
Sep-19	12,170,164	86,370,500	12,723,000	-552,836	91,795,000	424,100	as % of Flow
Average	8,415,461	94,785,961	8,868,000	-452,539	100,663,000	286,065	8.25%
Monthly Use	7,281,193	102,067,154	7,708,000	-426,807	108,371,000	256,933	
9,060,242	6,655,754	108,722,907	7,416,000	-760,246	115,787,000	239,226	-9,750,254
<b>YEAR TOTAL:</b>	<b>12</b>	<b>108,722,907</b>	<b>Cumulative</b>	<b>115,787,000</b>	<b>-7,064,093</b>	<b>Cumulative</b>	<b>317,242</b>
		<b>Metered/Other</b>	<b>Use YTD</b>		<b>Unaccounted</b>	<b>3% meter loss</b>	<b>2,989,222</b>
<b>2020</b>							
<i>gallons</i>							
Jan-20	6,490,802		6,771,000	-280,198		218,419	
Feb-20	7,358,842	13,849,644	7,991,000	-632,158	14,762,000	285,393	
Mar-20	6,480,584	20,330,228	7,169,000	-688,416	21,931,000	231,258	
Apr-20	6,676,813	27,007,042	6,984,000	-307,187	28,915,000	232,800	
May-20	7,865,550	34,872,592	7,971,000	-105,450	36,886,000	257,129	
Jun-20	0	34,872,592	0	0	36,886,000	0	
Jul-20	0	34,872,592	0	0	36,886,000	0	YTD
Aug-20	0	34,872,592	0	0	36,886,000	0	Unaccounted
Sep-20	0	34,872,592	0	0	36,886,000	0	as % of Flow
Average	0	34,872,592	0	0	36,886,000	0	5.46%
Monthly Use	0	34,872,592	0	0	36,886,000	0	
6,974,518	0	34,872,592	0	0	36,886,000	0	-2,013,408
<b>YEAR TOTAL:</b>	<b>5</b>	<b>34,872,592</b>	<b>Cumulative</b>	<b>36,886,000</b>	<b>-2,013,408</b>	<b>Cumulative</b>	<b>245,000</b>
		<b>Metered/Other</b>	<b>Use YTD</b>		<b>Unaccounted</b>	<b>3% meter loss</b>	<b>955,369</b>

3 YEAR	Use	Flow	Daily Flow	3 Year Loss as % of Flow
<b>AVERAGES:</b>	4,957,674 :gal/month	9,338,069 :gal/month	187,414	<b>6.53%</b>

source: Monthly Water Treatment Plant Report & utility.mdb's  
 3 yr cumulative flow 270,804,000  
 3 yr unaccounted -17,678,170

# Utilization of Sustainable Annual Water System Capacity

Period start: Jun-19

Period end: May-20

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

112.2 million gallons  
54.7%

Exceeds Sustainable Yield?

**No**

TOWN OF FRIDAY HARBOR

**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.*

<i>end of</i>	<i>Inches above/(below) original spillway</i>	<i>end of</i>	<i>Inches above/(below) original spillway</i>	<i>end of</i>	<i>Inches above/(below) original spillway</i>
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	-50.00
Oct-12	-48.00	Oct-15	-54.50	Oct-18	-54.50
Nov-12	-24.25	Nov-15	-17.25	Nov-18	-55.50
Dec-12	0.00	Dec-15	0.00	Dec-18	-26.00
Jan-13	0.00	Jan-16	0.00	Jan-19	0.00
Feb-13	0.00	Feb-16	0.00	Feb-19	0.00
Mar-13	0.00	Mar-16	0.00	Mar-19	2.75
Apr-13	8.50	Apr-16	6.00	Apr-19	2.75
May-13	3.75	May-16	-2.50	May-19	-0.75
Jun-13	-3.75	Jun-16	-11.00	Jun-19	-2.00
Jul-13	-21.00	Jul-16	-21.00	Jul-19	-16.00
Aug-13	-34.25	Aug-16	-36.50	Aug-19	-26.25
Sep-13	-39.25	Sep-16	-49.50	Sep-19	-40.00
Oct-13	-43.50	Oct-16	-51.00	Oct-19	-46.25
Nov-13	-44.75	Nov-16	-45.50	Nov-19	-49.75
Dec-13	-26.00	Dec-16	-10.35	Dec-19	-49.50
Jan-14	0.00	Jan-17	0.00	Jan-20	-11.00
Feb-14	0.00	Feb-17	0.00	Feb-20	0.00
Mar-14	0.00	Mar-17	2.75	Mar-20	0.00
Apr-14	8.25	Apr-17	9.00	Apr-20	4.00
May-14	5.00	May-17	4.75	May-20	0.00
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	

# 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
<b>Total</b>	<b>26.82</b>	<b>30.92</b>	<b>28.11</b>	<b>23.46</b>	<b>28.12</b>	<b>29.98</b>	<b>29.24</b>	<b>31.20</b>	<b>27.04</b>	<b>28.03</b>	<b>28.29</b>

Cumulative thru

<b>DEC</b>	<b>26.82</b>	<b>30.92</b>	<b>28.11</b>	<b>23.46</b>	<b>28.12</b>	<b>29.98</b>	<b>29.24</b>	<b>31.20</b>	<b>27.04</b>	<b>28.03</b>
------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

*all figures in inches*

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
JAN	3.97	2.17	1.60	5.10	3.87	7.32				
FEB	2.95	4.83	2.99	3.80	1.76	5.34				
MAR	3.62	2.88	3.27	1.48	0.87	1.25				
APR	0.51	0.75	2.20	3.10	1.61	1.38				
MAY	0.30	0.48	1.61	0.07	1.29	1.49				
JUN	0.14	1.22	0.75	0.72	0.61					
JUL	0.36	0.32	0.15	0.18	0.75					
AUG	0.94	0.11	0.11	0.01	0.84					
SEP	1.28	1.40	0.71	1.27	2.74					
OCT	3.53	4.80	4.28	2.23	3.33					
NOV	6.19	3.47	4.32	4.32	2.1					
DEC	5.26	4.02	3.83	4.26	3.63					
<b>Total</b>	<b>29.05</b>	<b>26.45</b>	<b>25.82</b>	<b>26.54</b>	<b>23.40</b>	<b>16.78</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Cumulative thru

<b>DEC</b>	<b>29.05</b>	<b>26.45</b>	<b>25.82</b>	<b>26.54</b>	<b>23.40</b>	<b>16.78</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
------------	--------------	--------------	--------------	--------------	--------------	--------------	-------------	-------------	-------------	-------------



# Prevention of Wastewater Facility Overloading

Period start: May-19  
 Period end: Apr-20

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  85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 1,360	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 0.69000  85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 0.58650	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) 944
Month with highest average loading in period Jan-19	Month with highest average flow in period Jan-19	Month with highest average loading in period Jan-19
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>