



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

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

**Period ending: March 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

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**Water - use MTD**sourceDate  
3 / 2020

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	2	15,009
Sfr	990	2,269,100
PA	77	597,760
Mfr	128	1,581,430
Ind	14	79,450
Com	221	1,269,760
<b>TOTAL</b>	<b>1,432</b>	<b>5,812,509</b>

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**Water use MTD - accounts with sewer**sourceDate  
3 / 2020

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<b>Sewer Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Mfr In/low Strength	47	454,130
Com In/lo Strength	162	661,090
Dot In/lo Strength	3	32,140
Ind In/hi Strength	1	27,150
Ind In/lo Strength	10	48,500
Lmf In/lo Strength	1	1,440
Com In/hi Strength	45	552,700
Mfr In/lo Strength	71	656,100
Mhp In/lo Strength	2	356,900
PA In/hi Strength	3	53,760
PA In/lo Strength	42	216,590
Sfr IN Town	615	1,521,960
Low Rate / IN Town	6	7,710
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	1008	4,590,170
<b>Location: Out</b>		
UW Out/hi Strength	1	95,100
Mfr Out/lo Strength	1	6,410
Sfr Out of Town	4	6,650
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	6	108,160
<b>TOTAL</b>	<b>1014</b>	<b>4,698,330</b>

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**Water - use MTD by Location**sourceDate  
3 / 2020

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	2	15,009
Sfr	636	1,549,300
PA	68	368,580
Mfr	123	1,512,110
Ind	13	79,450
Com	218	1,256,130
	<hr/>	
	1,060	4,780,579
<b>Location: Out</b>		
Sfr	354	719,800
PA	9	229,180
Mfr	5	69,320
Ind	1	0
Com	3	13,630
	<hr/>	
	372	1,031,930
<b>TOTAL</b>	<b>1,432</b>	<b>5,812,509</b>

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**Refuse - pickups by Class**sourceDate  
3 / 2020

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Location	Class	Pickups
IN	Sfr	1,482.0
	RefuseOnly	223.5
	PA	153.0
	Mfr	426.5
	Ind	19.0
	Com	1,883.5
		<hr/> 4,187.5
Out	Mfr	3.5
		<hr/> 3.5
	<b>TOTAL</b>	<b>4,191.0</b>

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**Refuse - active accounts**sourceDate  
3 / 2020

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<b>Location</b>	<b>Refuse Type</b>	<b>Accounts</b>
IN		
	Small Dumpster	46
	PA	38
	Medium Dumpste	54
	Large Dumpster	63
	Compactors	4
	Cans Low Rate	6
	Cans	838
		<hr/> 1,049
Out		
	Large Dumpster	1
		<hr/> 1
	<b>TOTAL</b>	<b>1,050</b>

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**Recycle - pickups by Class**sourceDate  
3 / 2020

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Location	Class	Pickups
IN	Sfr	653
	RefuseOnly	20
	PA	0
	Mfr	70
	Ind	3
	Com	6
		<hr/> 752
Out	Mfr	0
		<hr/> 0
	<b>TOTAL</b>	<b>752</b>

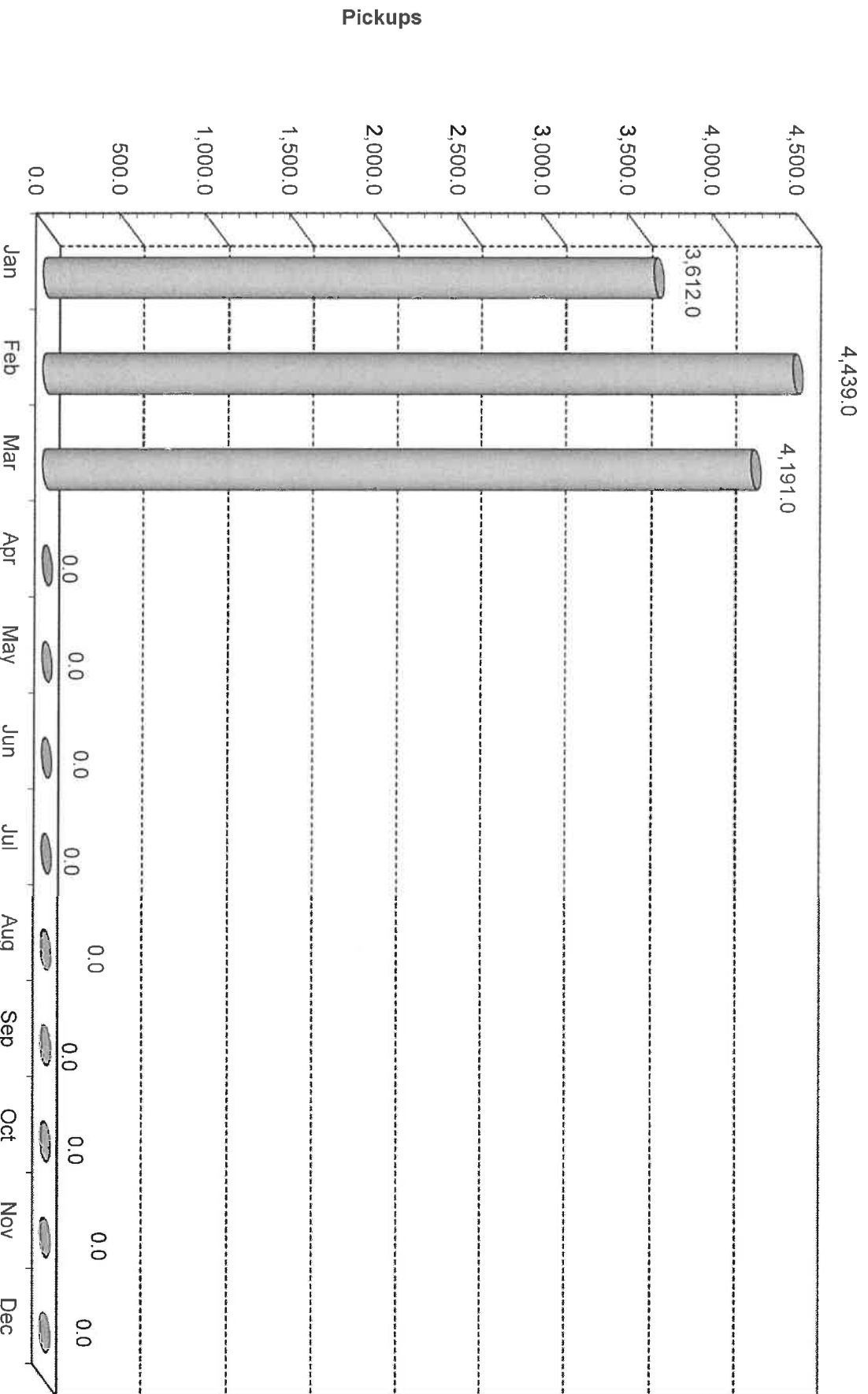
Town of Friday Harbor

# 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								0.0
May								0.0
Jun								0.0
Jul								0.0
Aug								0.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
<b>YTD</b>	<b>4,348.0</b>	<b>651.0</b>	<b>462.5</b>	<b>1,309.5</b>	<b>56.0</b>	<b>5,405.0</b>	<b>10.0</b>	<b>12,242.0</b>



# 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.

31 :count of days in reporting period.

	February 14, 2020		March 15, 2020
day	flow (total flow)	day	flow (total flow)
13		1	209
14	226	2	238
15	304	3	230
16	228	4	255
17	237	5	216
18	220	6	227
19	226	7	197
20	159	8	257
21	263	9	232
22	231	10	257
23	203	11	234
24	240	12	229
25	222	13	249
26	226	14	241
27	231	15	230
28	182	16	
29	270		
30			
31			
days		days	
16	3668	15	3501
TOTAL DAYS		31	
TOTAL FLOW			7169
			1,000's gallons



# 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	0	0	0
3% meter loss	179,127	203,162	174,375	0	0	0
Flushing	129,200	155,800	282,600			
SJC#3 FD use	5,000	5,000	5,000			
Leaks	206,582	222,800	206,100			
notes						
other non-metered use						
notes						
Additional water in storage						
notes						
Total other uses	-519,909	-586,762	-668,075	0	0	0
<b>Net production</b>	<b>6,251,091</b>	<b>7,404,238</b>	<b>6,500,925</b>	<b>0</b>	<b>0</b>	<b>0</b>

Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report  
 3% meter loss  
 Flushing  
 SJC#3 FD use  
 Leaks  
 notes  
 other non-metered use  
 notes  
 Additional water in storage  
 notes  
 Total other uses  
**Net production**

	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>

Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report  
 3% meter loss  
 Flushing  
 SJC#3 FD use  
 Leaks  
 notes  
 other non-metered use  
 notes  
 notes  
 Total other uses  
**Net production**

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	-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	12,454,526	85,291,133	-1,314,474	92,408,000	458,967	as % of Flow
Average	Oct-18	8,624,468	93,915,601	-551,532	101,584,000	296,000	5.10%
Monthly Use	Nov-18	7,401,706	101,317,307	-920,294	109,906,000	277,400	
9,031,729	Dec-18	7,063,439	108,380,746	-1,161,561	118,131,000	265,323	-5,914,508
<b>YEAR TOTAL:</b>	12	108,899,956	Cumulative Metered/Other Use YTD	118,131,000	-9,750,254	Cumulative Unaccounted 3% meter loss	323,377 2,915,731
<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	-451,761	14,847,000	280,893	
	Mar-19	6,065,311	19,671,683	-1,402,689	22,315,000	240,903	
	Apr-19	7,852,517	27,524,200	-751,483	30,919,000	286,800	
	May-19	8,660,158	36,184,358	-861,842	40,441,000	307,161	
	Jun-19	12,028,022	48,212,379	-466,978	52,936,000	416,500	
	Jul-19	12,121,969	60,334,348	-37,031	65,095,000	392,226	YTD
	Aug-19	13,865,988	74,200,336	-111,012	79,072,000	450,871	Unaccounted
	Sep-19	12,170,164	86,370,500	-552,836	91,795,000	424,100	as % of Flow
Average	Oct-19	8,415,461	94,785,961	-452,539	100,663,000	286,065	8.25%
Monthly Use	Nov-19	7,281,193	102,067,154	-426,807	108,371,000	256,933	
9,060,242	Dec-19	6,655,754	108,722,907	-760,246	115,787,000	239,226	-9,750,254
<b>YEAR TOTAL:</b>	12	108,722,907	Cumulative Metered/Other Use YTD	115,787,000	-7,064,093	Cumulative Unaccounted 3% meter loss	317,242 2,989,222
<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	-632,158	14,762,000	285,393	
	Mar-20	6,480,584	20,330,228	-688,416	21,931,000	231,258	
	Apr-20	0	20,330,228	0	21,931,000	0	
	May-20	0	20,330,228	0	21,931,000	0	
	Jun-20	0	20,330,228	0	21,931,000	0	
	Jul-20	0	20,330,228	0	21,931,000	0	YTD
	Aug-20	0	20,330,228	0	21,931,000	0	Unaccounted
	Sep-20	0	20,330,228	0	21,931,000	0	as % of Flow
Average	Oct-20	0	20,330,228	0	21,931,000	0	7.30%
Monthly Use	Nov-20	0	20,330,228	0	21,931,000	0	
6,776,743	Dec-20	0	20,330,228	0	21,931,000	0	-1,600,772
<b>YEAR TOTAL:</b>	3	20,330,228	Cumulative Metered/Other Use YTD	21,931,000	-1,600,772	Cumulative Unaccounted 3% meter loss	245,023 556,664

<b>3 YEAR</b>	Use	Flow	Daily Flow	3 Year Loss
<b>AVERAGES:</b>	4,786,303 :gal/month	9,475,889 :gal/month	187,422	as % of Flow <b>6.75%</b>

source: Monthly Water Treatment Plant Report & utility.mdb's      3 yr cumulative flow 255,849,000  
 3 yr unaccounted -17,265,533

## Utilization of Sustainable Annual Water System Capacity

Period start: Apr-19

Period end: Mar-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

115.4 million gallons  
56.3%

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	
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	

# 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>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>
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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	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					
MAY	0.30	0.48	1.61	0.07	1.29					
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					
Total	29.05	26.45	25.82	26.54	23.40	13.91	0.00	0.00	0.00	0.00

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>13.91</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
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# Prevention of Wastewater Facility Overloading

Period start: Mar-19  
 Period end: Feb-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	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 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>