



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

www.fridayharbor.org

Period ending: Feb 2019

Data provided by
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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

Recycle - pickups by ClasssourceDate
2 / 2019

Location	Class	Pickups
IN	Sfr	573
	RefuseOnly	15
	PA	0
	Mfr	44
	Ind	1
	Com	8
		<hr/> 641
Out	Sfr	0
	Mfr	0
		<hr/> 0
	TOTAL	641

Refuse - active accounts

sourceDate
2 / 2019

Location	Refuse Type	Accounts
IN		
	Small Dumpster	47
	PA	39
	Medium Dumpste	52
	Large Dumpster	61
	Compactors	3
	Cans Low Rate	6
	Cans	822
		<hr/>
		1,030
Out		
	Large Dumpster	1
	Cans	1
		<hr/>
		2
		<hr/>
	TOTAL	1,032

Refuse - pickups by ClasssourceDate
2 / 2019

Location	Class	Pickups
IN	Sfr	1,387.0
	RefuseOnly	182.5
	PA	152.0
	Mfr	367.0
	Ind	21.5
	Com	1,535.5
		<hr/> 3,645.5
Out	Sfr	0.0
	Mfr	4.5
		<hr/> 4.5
TOTAL		<hr/> 3,650.0

Water - use MTD by LocationsourceDate
2 / 2019

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	34,479
Sfr	634	1,786,700
PA	68	397,660
Mfr	116	1,559,610
Ind	13	71,290
Com	216	1,405,110
	<hr/>	<hr/>
	1,050	5,254,849
Location: Out		
Spe	1	6,720
Sfr	353	878,820
PA	7	290,340
Mfr	5	59,180
Ind	2	20
Com	4	95,060
	<hr/>	<hr/>
	372	1,330,140
TOTAL	1,422	6,584,989

Water use MTD - accounts with sewersourceDate
2 / 2019

Sewer Class	Accounts	Gallons
Location: IN		
Mfr In/low Strength	63	775,840
Com In/lo Strength	161	779,730
Dot In/lo Strength	3	52,970
Ind In/hi Strength	1	18,890
Ind In/lo Strength	10	48,840
Lmf In/lo Strength	1	2,240
Com In/hi Strength	44	587,210
Mfr In/lo Strength	47	388,910
Mhp In/lo Strength	2	342,300
PA In/hi Strength	3	68,210
PA In/lo Strength	42	191,240
Sfr IN Town	613	1,752,840
Low Rate / IN Town	6	11,950
	<hr/> 996	<hr/> 5,021,170
Location: Out		
UW Out/hi Strength	1	270,800
Mfr Out/lo Strength	1	6,000
Sfr Out of Town	4	7,860
	<hr/> 6	<hr/> 284,660
TOTAL	1002	5,305,830

Water - use MTDsourceDate
2 / 2019

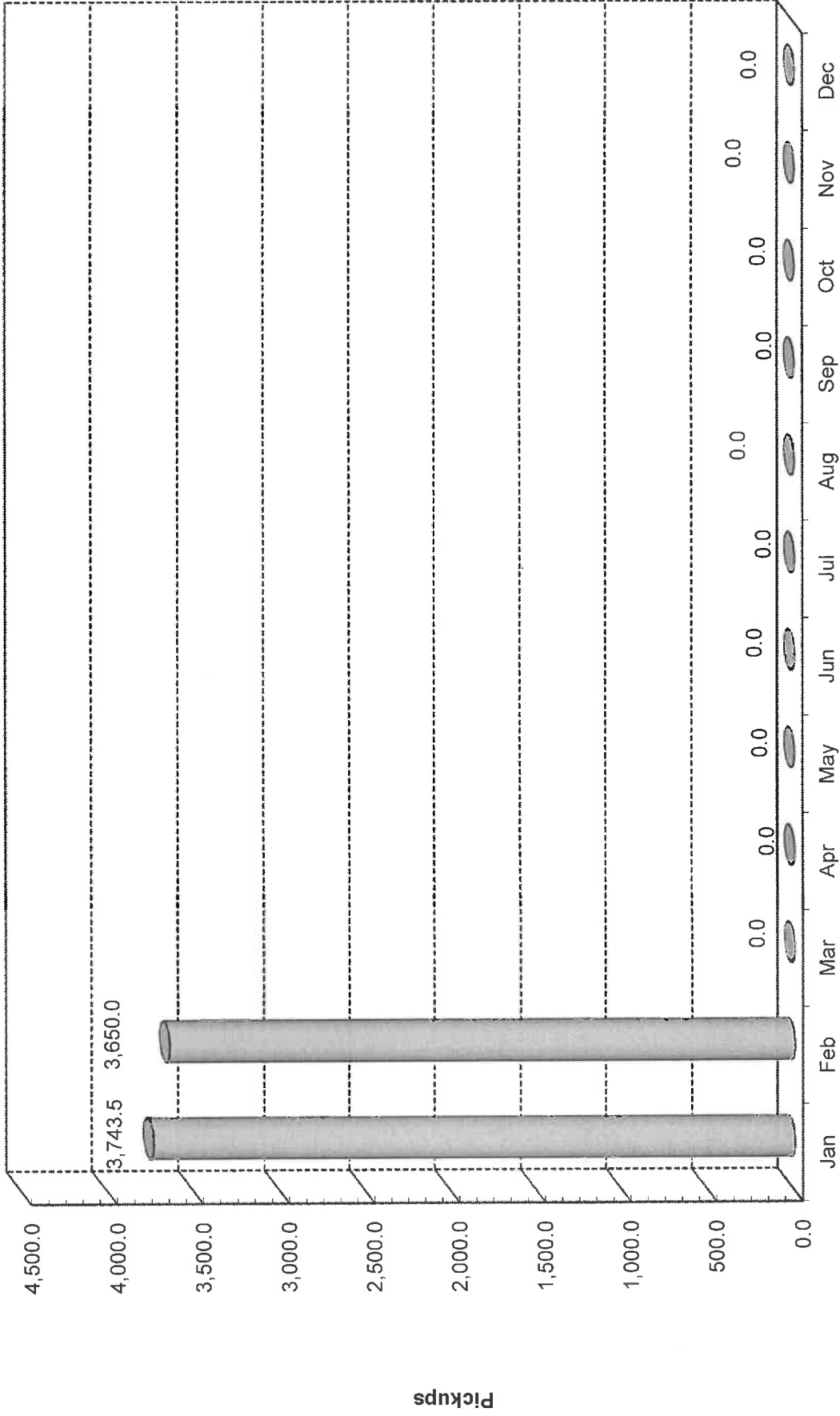
Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

Water Class	Accounts	Gallons
Spe	4	41,199
Sfr	987	2,665,520
PA	75	688,000
Mfr	121	1,618,790
Ind	15	71,310
Com	220	1,500,170
TOTAL	1,422	6,584,989

Refuse Pickups - 2019 YTD

Account Type	SFR	Refuse Only	P.A	MFR	IND	COM	Other	Total
Jan	1,327.5	196.5	148.5	353.5	18.0	1,699.5		3,743.5
Feb	1,387.0	182.5	152.0	367.0	21.5	1,535.5	4.5	3,650.0
Mar								0.0
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
YTD	2,714.5	379.0	300.5	720.5	39.5	3,235.0	4.5	7,393.5

Refuse Pickups by Month - 2019



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.

January 15, 2019		February 14, 2019	
day	flow (total flow)	day	flow (total flow)
15	223	1	255
16	260	2	272
17	222	3	232
18	243	4	237
19	276	5	253
20	263	6	244
21	260	7	279
22	206	8	318
23	263	9	395
24	245	10	250
25	240	11	210
26	276	12	229
27	231	13	272
28	228	14	247
29	250		
30	232		
31	254		

<u>days</u> 17	<u>days</u> 14
4172	3693
TOTAL DAYS	31
TOTAL FLOW	7865
	1,000's gallons

Net Water Production - 2019

amounts in gallons

	Jan	Feb	Mar	Apr	May	Jun
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	6,982,000	7,865,000	0	0	0	0
3% meter loss	164,951	197,550	0	0	0	0
Flushing	308,800	309,700				
SJC#3 FD use	5,000	5,000				
Leaks	216,000	316,000				
<i>notes</i>						
other non-metered use						
<i>notes</i>						
Additional water in storage						
<i>notes</i>						
<i>Total other uses</i>	-694,751	-828,250	0	0	0	0
Net production	6,287,249	7,036,750	0	0	0	0

	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						
Flushing						
SJC#3 FD use						
Leaks						
<i>notes</i>						
other non-metered use						
<i>notes</i>						
<i>notes</i>						
<i>Total other uses</i>	0	0	0	0	0	0
Net production	0	0	0	0	0	0

WATER CONSUMPTION (Use) BY CUSTOMER CLASS

source: utilTrn08 & 13.mdb

2018

CLASS:	COM	IND	MFR	P.A	SFR	Special	other uses	TOTAL	% of Use	Avg Daily Use
JAN	1,312,140	61,070	1,614,762	626,860	2,424,228	18,020	416,754	6,473,834	6.0%	208,833
FEB	1,236,460	75,520	1,683,748	602,090	2,294,360	16,927	409,718	6,318,823	5.8%	217,890
MAR	1,154,050	65,030	1,497,650	428,330	2,161,960	28,836	524,876	5,860,732	5.4%	189,056
APR	1,670,940	100,680	1,702,730	749,850	2,426,860	18,042	747,713	7,416,815	6.8%	247,227
MAY	1,687,460	116,990	1,615,500	967,770	2,720,851	51,359	527,178	7,687,108	7.1%	247,971
JUN	2,455,402	283,510	2,064,240	1,538,400	4,436,044	104,540	537,054	11,419,190	10.5%	380,640
JUL	2,787,218	298,920	2,032,360	2,420,850	4,846,845	307,361	458,310	13,151,864	12.1%	424,254
AUG	3,089,539	316,650	2,133,950	2,668,710	5,545,970	348,102	405,320	14,508,241	13.4%	468,008
SEP	2,904,901	310,320	2,073,900	2,052,880	4,579,190	163,934	369,401	12,454,526	11.5%	415,151
OCT	1,895,490	113,160	1,478,860	1,131,560	3,550,430	66,688	388,280	8,624,468	8.0%	278,209
NOV	1,674,600	82,860	1,517,110	995,910	2,552,950	43,275	535,001	7,401,706	6.8%	246,724
DEC	1,524,720	77,270	1,547,240	984,510	2,557,150	24,649	347,900	7,063,439	6.5%	227,853
TOTAL	23,392,920	1,901,980	20,962,050	15,167,720	40,096,838	1,191,733	5,667,505	108,380,746	100.0%	296,122
AVERAGE	1,949,410	158,498	1,746,838	1,263,977	3,341,403	99,311	472,292	9,031,729	-9,750,254	:LOSS for Year

% of USE
% of FLOW

:FLOW (User+Loss)
Loss as % of Flow

2019

CLASS:	COM	IND	MFR	P.A	SFR	Special	other uses	TOTAL	% of Use	Avg Daily Use
JAN	1,250,270	69,660	1,349,580	607,870	2,203,780	17,222	694,751	6,193,133	45.5%	199,778
FEB	1,500,170	71,310	1,618,790	688,000	2,665,520	41,199	828,250	7,413,239	54.5%	255,629
MAR								0	0.0%	0
APR								0	0.0%	0
MAY								0	0.0%	0
JUN								0	0.0%	0
JUL								0	0.0%	0
AUG								0	0.0%	0
SEP								0	0.0%	0
OCT								0	0.0%	0
NOV								0	0.0%	0
DEC								0	0.0%	0
TOTAL	2,750,440	140,970	2,968,370	1,295,870	4,869,300	58,421	1,523,001	13,606,372	100.0%	226,773
AVERAGE	1,375,220	70,485	1,484,185	647,935	2,434,650	29,211	126,917	1,133,864	-1,240,628	:LOSS for Year

% of USE
% of FLOW

:FLOW (User+Loss)
Loss as % of Flow

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	
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	110,628,322	Cumulative Metered/Other Use YTD	116,028,000	-5,914,508 Unaccounted	Cumulative 3% meter loss	317,735 2,915,731
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	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	8.25%
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	-9,750,254
YEAR TOTAL:	12	108,380,746	Cumulative Metered/Other Use YTD	118,131,000	-9,750,254 Unaccounted	Cumulative 3% meter loss	323,377 2,989,222
2019							
<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	0	13,606,372	0	14,847,000	0	
	Apr-19	0	13,606,372	0	14,847,000	0	
	May-19	0	13,606,372	0	14,847,000	0	
	Jun-19	0	13,606,372	0	14,847,000	0	
	Jul-19	0	13,606,372	0	14,847,000	0	YTD
	Aug-19	0	13,606,372	0	14,847,000	0	Unaccounted
	Sep-19	0	13,606,372	0	14,847,000	0	as % of Flow
Average	Oct-19	0	13,606,372	0	14,847,000	0	8.36%
Monthly Use	Nov-19	0	13,606,372	0	14,847,000	0	
6,803,186	Dec-19	0	13,606,372	0	14,847,000	0	-1,240,628
YEAR TOTAL:	2	13,606,372	Cumulative Metered/Other Use YTD	14,847,000	-1,240,628 Unaccounted	Cumulative 3% meter loss	253,059 362,501

3 YEAR AVERAGES:	Use 4,778,257 :gal/month	Flow 9,577,154 :gal/month	Daily Flow 192,146	3 Year Loss as % of Flow 6.79%
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source: Monthly Water Treatment Plant Report & utility.mdb's 3 yr cumulative flow 249,006,000
3 yr unaccounted -16,905,389

Utilization of Sustainable Annual Water System Capacity

Period start: Mar-18

Period end: Feb-19

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

118.6 million gallons
57.8%

exceeds Sustainable Yield?

No

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	-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	
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	

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

DEC	26.82	30.92	28.11	23.46	28.12	29.98	29.24	31.20	27.04	28.03
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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					
FEB	2.95	4.83	2.99	3.80	1.76					
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	1.27						
OCT	3.53	4.80	4.28	2.23						
NOV	6.19	3.47	4.32	4.32						
DEC	5.26	4.02	3.83	4.26						
Total	29.05	26.45	25.82	26.54	5.63	0.00	0.00	0.00	0.00	0.00

Cumulative thru

DEC	29.05	26.45	25.82	26.54	5.63	0.00	0.00	0.00	0.00	0.00
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Prevention of Wastewater Facility Overloading

Period start: Feb-18
 Period end: Jan-19

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 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