

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

www.fridayharbor.org

Period ending: Feb 2021

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
/
2 / 2021

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

Water Class	Accounts	Gallons
Spe	3	14,773
Sfr	1001	2,683,576
PA	81	424,210
Mfr	131	2,009,594
Ind	14	99,720
Com	221	1,019,552
TOTAL	1,451	6,251,425

Water use MTD - accounts with sewer

sourceDate

/

2 / 2021

Sewer Class	Accounts	Gallons
Location: IN		
Mfr Out/lo Strength	1	17,050
Com In/lo Strength	165	582,740
Dot In/lo Strength	3	45,140
Ind In/hi Strength	1	30,650
Ind In/lo Strength	10	60,620
Lmf In/lo Strength	1	3,260
Low Rate / IN Town	6	9,400
Com In/hi Strength	42	404,924
Mfr In/low Strength	49	686,713
Mhp In/lo Strength	2	413,000
PA In/hi Strength	3	40,170
PA In/lo Strength	45	167,340
Sfr IN Town	624	1,804,096
Mfr In/lo Strength	71	724,101
	1023	4,989,204

Location: Out

UW Out/hi Strength	1	53,000
Mfr Out/lo Strength	1	12,740
Sfr Out of Town	4	7,310
	6	73,050

Sewer Class	Accounts	Gallons
TOTAL	1029	5,062,254

Water - use MTD by Location

sourceDate

/
2 / 2021

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

Water Class	Accounts	Gallons
Location: IN		
Spe	2	13,903
Sfr	648	1,836,846
PA	72	346,940
Mfr	126	1,893,994
Ind	13	97,730
Com	218	1,009,082
	1,079	5,198,495
Location: Out		
Spe	1	870
Sfr	353	846,730
PA	9	77,270
Mfr	5	115,600
Ind	1	1,990
Com	3	10,470
	372	1,052,930
TOTAL	1,451	6,251,425

Refuse - pickups by Class

sourceDate

/
2 / 2021

Location	Class	Pickups
IN	Sfr	1,912.0
	RefuseOnly	196.0
	PA	103.5
	Mfr	548.5
	Ind	19.5
	Com	1,581.0
		4,360.5
Out	Mfr	8.0
		8.0
TOTAL		4,368.5

Refuse - active accounts

sourceDate
/
2 / 2021

Location	Refuse Type	Accounts
IN		
	Small Dumpster	46
	PA	42
	Medium Dumpste	49
	Large Dumpster	69
	Compactors	4
	Cans Low Rate	6
	Cans	863
		<hr/>
		1,079
Out		
	Large Dumpster	1
		<hr/>
		1
		<hr/>
	TOTAL	1,080

Recycle - pickups by Class

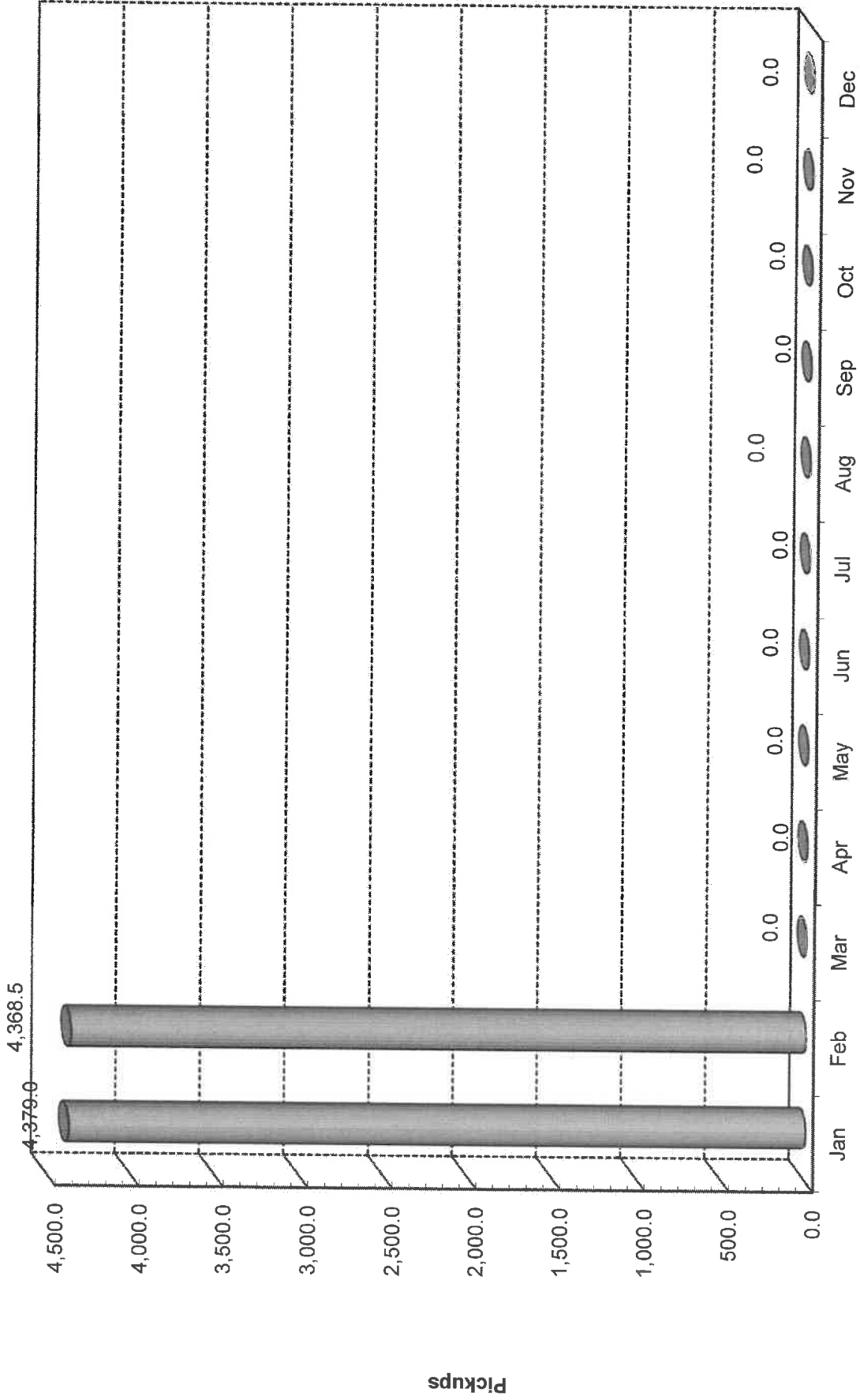
sourceDate
/
2 / 2021

Location	Class	Pickups
IN	Sfr	886
	RefuseOnly	33
	PA	0
	Mfr	71
	Ind	6
	Com	3
		999
Out	Mfr	0
		0
TOTAL		999

Refuse Pickups - 2021 YTD

Account Type	SFR	Refuse Only	P.A	MFR	IND	COM	Other	Total
Jan	1,990.0	221.0	90.0	613.0	14.0	1,444.0	7.0	4,379.0
Feb	1,912.0	196.0	103.5	548.5	19.5	1,581.0	8.0	4,368.5
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	3,902.0	417.0	193.5	1,161.5	33.5	3,025.0	15.0	8,747.5

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.

	January 15, 2021		February 14, 2021
day	flow (total flow)	day	flow (total flow)
13		1	217
14		2	270
15	211	3	267
16	288	4	292
17	197	5	267
18	282	6	277
19	222	7	268
20	300	8	213
21	278	9	248
22	220	10	226
23	133	11	240
24	236	12	266
25	260	13	281
26	172	14	254
27	211	15	
28	235	16	
29	241		
30	191		
31	276		
days	3953	days	3586
	TOTAL DAYS	31	
	TOTAL FLOW	7539	
		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. & Finish Flow to Town Report</i>					
15-Dec	<i>to</i>	14-Jan	31	7,320,000	7,320
15-Jan	<i>to</i>	14-Feb	31	7,539,000	7,539
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
	<i>to</i>		0	0	
			62	14,859,000	14859.0

TOWN OF FRIDAY HARBOR

WATER CONSUMPTION (Use) BY CUSTOMER CLASS

source: utilTry08 & 13.mdb

2020

CLASS:	COM	IND	MFR	P.A	SFR	Special	other uses	TOTAL	% of Use	Avg. Daily Use
JAN	1,245,000	106,800	1,477,460	778,750	2,353,930	8,953	519,909	6,490,802	6.4%	209,381
FEB	1,472,570	103,550	1,708,290	877,370	2,579,290	31,010	586,762	7,358,842	7.2%	253,753
MAR	1,269,760	79,450	1,581,430	597,760	2,269,100	15,009	668,075	6,480,584	6.4%	209,051
APR	855,070	67,640	1,845,470	421,860	2,823,760	41,241	621,772	6,676,813	6.6%	222,560
MAY	979,450	83,580	1,960,930	673,160	3,435,470	102,507	630,453	7,865,550	7.7%	253,727
JUN	1,163,080	85,270	2,111,320	827,450	3,654,370	42,123	699,038	8,582,651	8.4%	286,088
JUL	1,887,081	227,720	2,157,360	1,425,030	4,208,750	64,034	730,079	10,700,054	10.5%	345,163
AUG	2,827,729	284,390	2,761,380	2,072,320	5,553,590	139,076	800,183	14,438,668	14.2%	465,763
SEP	2,207,410	222,810	2,194,420	1,543,250	4,211,890	112,212	579,688	11,071,680	10.9%	369,056
OCT	1,679,380	128,740	2,014,950	1,065,460	2,981,580	41,258	675,971	8,587,339	8.4%	277,011
NOV	1,265,230	97,420	1,931,840	618,010	2,785,370	30,930	557,304	7,286,104	7.1%	242,870
DEC	993,490	89,190	1,717,840	424,420	2,518,610	28,300	604,796	6,376,646	6.3%	205,698
TOTAL	17,845,250	1,576,560	23,462,690	11,324,840	39,375,710	656,653	7,674,030	101,915,733	100.0%	278,458
AVERAGE	1,487,104	131,380	1,955,224	943,737	3,281,309	54,721	639,503	8,492,978	-4,520,267 :LOSS for Year	
% of USE	17.5%	1.5%	23.0%	11.1%	38.6%	0.6%	7.5%	100.0%	106,436,000 :FLOW (User+Loss)	
% of FLOW	16.8%	1.5%	22.0%	10.6%	37.0%	0.6%	7.2%	95.8%	-4.2% Loss as % of Flow	

2021

CLASS:	COM	IND	MFR	P.A	SFR	Special	other uses	TOTAL	% of Use	Avg. Daily Use
JAN	943,778	86,800	1,925,507	421,580	2,857,180	14,797	568,569	6,818,211	48.9%	219,942
FEB	1,019,552	99,720	2,009,594	424,210	2,683,576	14,773	873,443	7,124,868	51.1%	245,685
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	1,963,330	186,520	3,935,101	845,790	5,540,756	29,570	1,442,012	13,943,079	100.0%	232,385
AVERAGE	981,665	93,260	1,967,551	422,895	2,770,378	14,785	120,168	1,161,923	-915,921 :LOSS for Year	
% of USE	14.1%	1.3%	28.2%	6.1%	39.7%	0.2%	10.3%	100.0%	14,859,000 :FLOW (User+Loss)	
% of FLOW	13.2%	1.3%	26.5%	5.7%	37.3%	0.2%	9.7%	93.8%	-6.2% Loss as % of Flow	

Net Water Production - 2021

amounts in gallons

	Jan	Feb	Mar	Apr	May	Jun
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	7,320,000	7,539,000	0	0	0	0
3% meter loss	187,489	187,543	0	0	0	0
Flushing	172,750	555,250				
SJC#3 FD use	5,000	5,000				
Leaks	203,330	125,650				
notes						
other non-metered use						
notes						
Additional water in storage						
notes						
Total other uses	-568,569	-873,443	0	0	0	0
Net production	6,751,431	6,665,557	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	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

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		
2019								
<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	Nov-19	7,281,193	102,067,154	7,708,000	-426,807	108,371,000	256,933	
9,060,242	Dec-19	6,655,754	108,722,907	7,416,000	-760,246	115,787,000	239,226	-9,750,254
YEAR TOTAL:	12	108,722,907	Cumulative	115,787,000	-7,064,093	Cumulative	317,242	
		Metered/Other	Use YTD		Unaccounted	3% meter loss	2,989,222	
2020								
<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	8,582,651	43,455,243	9,137,000	-554,349	46,023,000	304,567		
Jul-20	10,700,054	54,155,297	10,903,000	-202,946	56,926,000	351,710	YTD	
Aug-20	14,438,668	68,593,965	14,737,000	-298,332	71,663,000	475,387	Unaccounted	
Sep-20	11,071,680	79,665,645	11,463,000	-391,320	83,126,000	382,100	as % of Flow	
Average	8,587,339	88,252,984	8,823,000	-235,661	91,949,000	284,613	4.25%	
Monthly Use	Nov-20	7,286,104	95,539,088	7,733,000	-446,896	99,682,000	257,767	
8,492,978	Dec-20	6,376,646	101,915,733	6,754,000	-377,355	106,436,000	217,871	-4,520,267
YEAR TOTAL:	12	101,915,733	Cumulative	106,436,000	-4,520,267	Cumulative	291,584	
		Metered/Other	Use YTD		Unaccounted	3% meter loss	2,827,251	
2021								
<i>gallons</i>								
Jan-21	6,818,211		7,320,000	-501,789		236,129		
Feb-21	7,124,868	13,943,079	7,539,000	-414,132	14,859,000	269,250		
Mar-21	0	13,943,079	0	0	14,859,000	0		
Apr-21	0	13,943,079	0	0	14,859,000	0		
May-21	0	13,943,079	0	0	14,859,000	0		
Jun-21	0	13,943,079	0	0	14,859,000	0		
Jul-21	0	13,943,079	0	0	14,859,000	0	YTD	
Aug-21	0	13,943,079	0	0	14,859,000	0	Unaccounted	
Sep-21	0	13,943,079	0	0	14,859,000	0	as % of Flow	
Average	Oct-21	0	13,943,079	0	14,859,000	0	6.16%	
Monthly Use	Nov-21	0	13,943,079	0	14,859,000	0		
6,971,540	Dec-21	0	13,943,079	0	14,859,000	0	-915,921	
YEAR TOTAL:	2	13,943,079	Cumulative	14,859,000	-915,921	Cumulative	252,690	
		Metered/Other	Use YTD		Unaccounted	3% meter loss	375,032	

3 YEAR AVERAGES:	Use	Flow	Daily Flow	3 Year Loss as % of Flow
	4,717,923 :gal/month	9,118,538 :gal/month	181,425	6.41%

source: Monthly Water Treatment Plant Report & utility.mdb's
 3 yr cumulative flow 237,082,000
 3 yr unaccounted -15,186,441

Utilization of Sustainable Annual Water System Capacity

Period start: Mar-20

Period end: Feb-21

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

106.5 million gallons
52.0%

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.

end of	Inches above/(below) original spillway	end of	Inches above/(below) original spillway	end of	Inches above/(below) original spillway
Jan-15	0.00	Jan-18	0.00	Jan-21	0.00
Feb-15	0.00	Feb-18	0.00	Feb-21	0.00
Mar-15	0.00	Mar-18	8.75	Mar-21	
Apr-15	6.50	Apr-18	8.25	Apr-21	
May-15	0.00	May-18	1.50	May-21	
Jun-15	-13.00	Jun-18	-10.50	Jun-21	
Jul-15	-29.50	Jul-18	-29.50	Jul-21	
Aug-15	-42.25	Aug-18	-42.00	Aug-21	
Sep-15	-49.50	Sep-18	-50.00	Sep-21	
Oct-15	-54.50	Oct-18	-54.50	Oct-21	
Nov-15	-17.25	Nov-18	-55.50	Nov-21	
Dec-15	0.00	Dec-18	-26.00	Dec-21	
Jan-16	0.00	Jan-19	0.00	Jan-22	
Feb-16	0.00	Feb-19	0.00	Feb-22	
Mar-16	0.00	Mar-19	2.75	Mar-22	
Apr-16	6.00	Apr-19	2.75	Apr-22	
May-16	-2.50	May-19	-0.75	May-22	
Jun-16	-11.00	Jun-19	-2.00	Jun-22	
Jul-16	-21.00	Jul-19	-16.00	Jul-22	
Aug-16	-36.50	Aug-19	-26.25	Aug-22	
Sep-16	-49.50	Sep-19	-40.00	Sep-22	
Oct-16	-51.00	Oct-19	-46.25	Oct-22	
Nov-16	-45.50	Nov-19	-49.75	Nov-22	
Dec-16	-10.35	Dec-19	-49.50	Dec-22	
Jan-17	0.00	Jan-20	-11.00	Jan-23	
Feb-17	0.00	Feb-20	0.00	Feb-23	
Mar-17	2.75	Mar-20	0.00	Mar-23	
Apr-17	9.00	Apr-20	4.00	Apr-23	
May-17	4.75	May-20	0.00	May-23	
Jun-17	-4.00	Jun-20	-0.75	Jun-23	
Jul-17	-19.00	Jul-20	-8.50	Jul-23	
Aug-17	-32.00	Aug-20	-22.50	Aug-23	
Sep-17	-43.00	Sep-20	-34.00	Sep-23	
Oct-17	-50.50	Oct-20	-42.50	Oct-23	
Nov-17	-48.00	Nov-20	-45.25	Nov-23	
Dec-17	-11.50	Dec-20	-28.25	Dec-23	

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
------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

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	4.36			
FEB	2.95	4.83	2.99	3.80	1.76	5.34	3.41			
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	1.25				
JUL	0.36	0.32	0.15	0.18	0.75	0.86				
AUG	0.94	0.11	0.11	0.01	0.84	0.68				
SEP	1.28	1.40	0.71	1.27	2.74	2.34				
OCT	3.53	4.80	4.28	2.23	3.33	3.39				
NOV	6.19	3.47	4.32	4.32	2.1	4.68				
DEC	5.26	4.02	3.83	4.26	3.63	6.81				
Total	29.05	26.45	25.82	26.54	23.40	36.79	7.77	0.00	0.00	0.00

Cumulative thru

DEC	29.05	26.45	25.82	26.54	23.40	36.79	7.77	0.00	0.00	0.00
------------	--------------	--------------	--------------	--------------	--------------	--------------	-------------	-------------	-------------	-------------

Prevention of Wastewater Facility Overloading

Period start: Jan-20
 Period end: Dec-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	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