



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

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

**Period ending: July 2019**

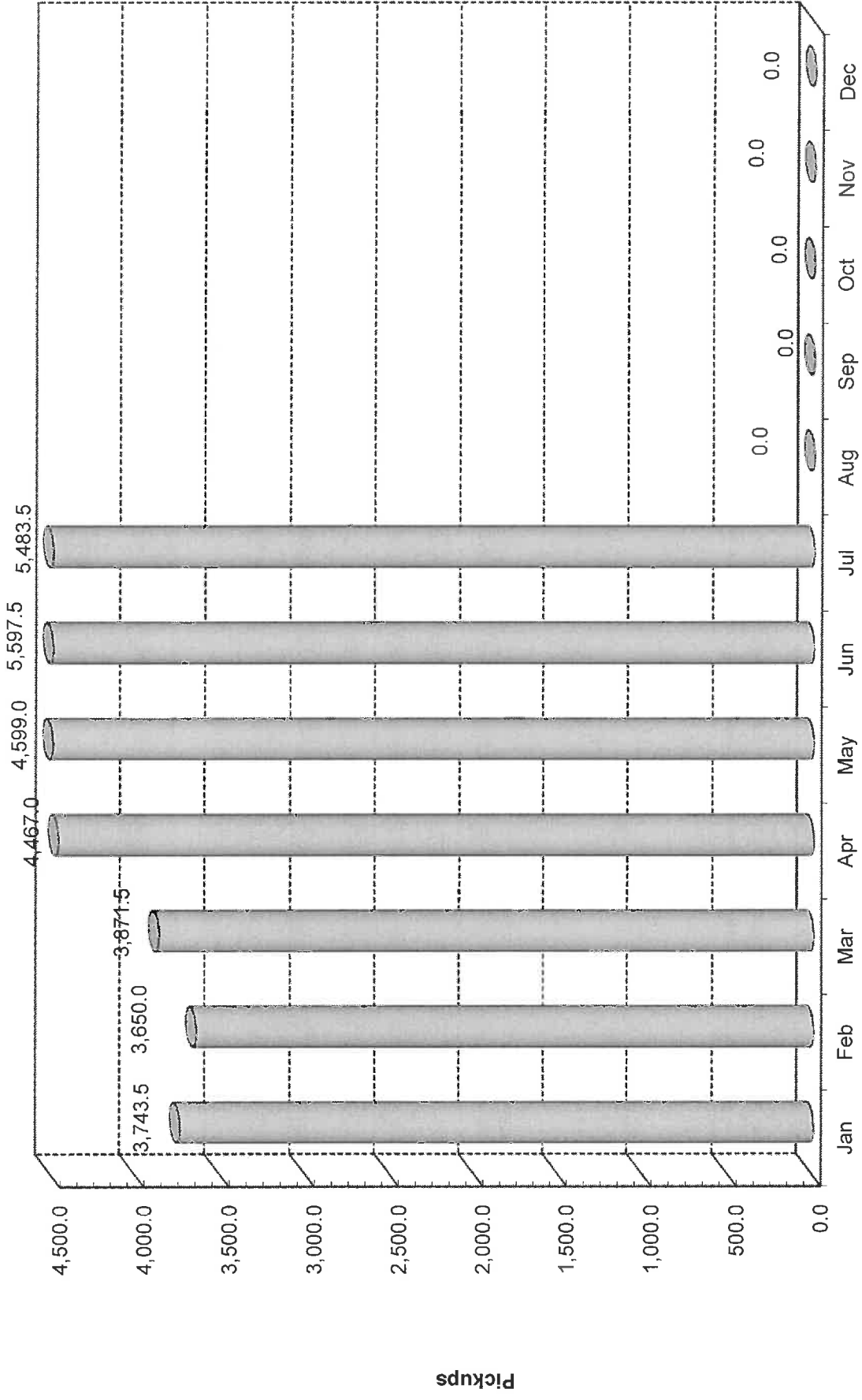
Data provided by  
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Water Utility, Mike Deegan, Water System Mgr.  
Frank Byrne, Water Treatment Plant Operator  
Wastewater Utility, Don Reitan, Leadman  
Solid Waste Utility, Dave Smith, Leadman

Analysis & Reports prepared by  
Mike Greene, System Administrator

## 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	1,324.0	221.0	170.0	367.0	18.0	1,767.5	4.0	3,871.5
Apr	1,617.0	271.0	180.5	426.5	21.0	1,947.0	4.0	4,467.0
May	1,486.0	292.5	205.5	412.0	19.0	2,178.0	6.0	4,599.0
Jun	2,033.0	397.5	227.5	502.5	16.5	2,413.5	7.0	5,597.5
Jul	1,827.0	420.0	192.0	454.0	16.0	2,565.5	9.0	5,483.5
Aug								0.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	11,001.5	1,981.0	1,276.0	2,882.5	130.0	14,106.5	34.5	31,412.0

# 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.

28 :count of days in reporting period.

	June 17, 2019		July 14, 2019
day	flow (total flow)	day	flow (total flow)
15		1	429
16		2	557
17	383	3	481
18	510	4	472
19	366	5	416
20	455	6	471
21	431	7	476
22	475	8	366
23	442	9	332
24	363	10	464
25	382	11	370
26	484	12	438
27	455	13	427
28	417	14	467
29	430	15	
30	400	16	
31			
days		days	
	14		6166
	TOTAL DAYS		
		28	
	TOTAL FLOW		12159
			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	7,468,000	8,604,000	9,522,000	12,495,000
3% meter loss	164,951	197,550	159,994	208,847	234,165	334,827
Flushing	308,800	309,700	341,200	245,100	183,500	144,000
SJC#3 FD use	5,000	5,000	5,000	5,000	5,000	35,900
Leaks	216,000	316,000	226,000	432,000	432,000	352,400
other non-metered use						
Additional water in storage						
<i>notes</i>						
<i>notes</i>						
<i>notes</i>						
Total other uses	-694,751	-828,250	-732,194	-890,947	-854,665	-867,127
<b>Net production</b>	<b>6,287,249</b>	<b>7,036,750</b>	<b>6,735,806</b>	<b>7,713,053</b>	<b>8,667,335</b>	<b>11,627,873</b>
	Jul	Aug	Sep	Oct	Nov	Dec
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	12,159,000	0	0	0	0	0
3% meter loss	340,444	0	0	0	0	0
Flushing	201,600					
SJC#3 FD use	5,000					
Leaks	226,800					
other non-metered use						
<i>notes</i>						
<i>notes</i>						
Total other uses	-773,844	0	0	0	0	0
<b>Net production</b>	<b>11,385,156</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Utilization of Sustainable Annual Water System Capacity

Period start: Aug-18

Period end: Jul-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

120.0 million gallons  
58.5%

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	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	-16.00
Jul-13	-21.00	Jul-16	-21.00	Jul-19	-26.25
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
<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>
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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	0.87					
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						
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						
<b>Total</b>	<b>29.05</b>	<b>26.45</b>	<b>25.82</b>	<b>26.54</b>	<b>10.76</b>	<b>0.00</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>10.76</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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**Water - use MTD**sourceDate  
7 / 2019

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	4	117,755
Sfr	987	4,135,760
PA	75	2,149,290
Mfr	124	2,060,480
Ind	15	261,470
Com	221	2,623,370
<b>TOTAL</b>	<b>1,426</b>	<b>11,348,125</b>

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**Water - use MTD by Location**sourceDate  
7 / 2019

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	114,255
Sfr	634	2,433,390
PA	68	1,656,800
Mfr	119	1,838,090
Ind	13	261,470
Com	217	2,545,820
	<hr/>	
	1,054	8,849,825
<b>Location: Out</b>		
Spe	1	3,500
Sfr	353	1,702,370
PA	7	492,490
Mfr	5	222,390
Ind	2	0
Com	4	77,550
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	372	2,498,300
<b>TOTAL</b>	<b>1,426</b>	<b>11,348,125</b>

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**Water use MTD - accounts with sewer**sourceDate  
7 / 2019

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<b>Sewer Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Mfr In/low Strength	62	738,190
Com In/lo Strength	161	1,406,220
Dot In/lo Strength	3	79,640
Ind In/hi Strength	1	50,280
Ind In/lo Strength	10	198,740
Lmf In/lo Strength	1	3,110
Com In/hi Strength	45	1,046,120
Mfr In/lo Strength	52	681,070
Mhp In/lo Strength	2	361,900
PA In/hi Strength	3	121,560
PA In/lo Strength	42	962,790
Sfr IN Town	613	2,353,450
Low Rate / IN Town	6	10,180
	<hr/>	
	1001	8,013,250
<b>Location: Out</b>		
UW Out/hi Strength	1	439,000
Mfr Out/lo Strength	1	3,170
Sfr Out of Town	4	16,690
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	6	458,860
<b>TOTAL</b>	<b>1007</b>	<b>8,472,110</b>

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**Refuse - pickups by Class**sourceDate  
7 / 2019

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Location	Class	Pickups
IN	Sfr	1,827.0
	RefuseOnly	420.0
	PA	192.0
	Mfr	454.0
	Ind	16.0
	Com	2,565.5
		<hr/> 5,474.5
Out	Sfr	0.0
	Mfr	9.0
		<hr/> 9.0
	<b>TOTAL</b>	<b>5,483.5</b>

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**Refuse - active accounts**sourceDate  
7 / 2019

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Location	Refuse Type	Accounts
IN		
	Small Dumpster	47
	PA	39
	Medium Dumpste	54
	Large Dumpster	63
	Compactors	3
	Cans Low Rate	6
	Cans	825
		<hr/> 1,037
Out		
	Large Dumpster	1
	Cans	1
		<hr/> 2
	<b>TOTAL</b>	<hr/> <b>1,039</b>

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**Recycle - pickups by Class**sourceDate  
7 / 2019

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Location	Class	Pickups
IN	Sfr	671
	RefuseOnly	20
	PA	0
	Mfr	71
	Ind	4
	Com	7
		<hr/> 773
Out	Sfr	0
	Mfr	0
		<hr/> 0
	<b>TOTAL</b>	<b>773</b>

# Prevention of Wastewater Facility Overloading

Period start: Jul-18  
 Period end: Jun-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 <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 Following month's loading 509 524	Previous month's flow Following month's flow 0.2541 0.2799	Previous month's loading Following month's loading 319 245
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>