



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

www.fridayharbor.org

Period ending: Mar 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

Water - use MTDsourceDate
3 / 2019

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

Water Class	Accounts	Gallons
Spe	3	17,517
Sfr	988	2,041,730
PA	75	559,420
Mfr	121	1,397,840
Ind	15	75,040
Com	220	1,241,570
TOTAL	1,422	5,333,117

Water use MTD - accounts with sewersourceDate
3 / 2019

Sewer Class	Accounts	Gallons
Location: IN		
Mfr In/low Strength	48	355,640
Com In/lo Strength	160	626,040
Dot In/lo Strength	3	26,640
Ind In/hi Strength	1	20,970
Ind In/lo Strength	10	46,100
Lmf In/lo Strength	1	3,000
Com In/hi Strength	45	488,150
Mfr In/lo Strength	62	634,760
Mhp In/lo Strength	2	305,200
PA In/hi Strength	3	62,380
PA In/lo Strength	42	212,440
Sfr IN Town	613	1,427,010
Low Rate / IN Town	6	8,310
	<hr/> 996	<hr/> 4,216,640
Location: Out		
UW Out/hi Strength	1	198,900
Mfr Out/lo Strength	1	4,800
Sfr Out of Town	4	4,360
	<hr/> 6	<hr/> 208,060
TOTAL	1002	4,424,700

Water - use MTD by LocationsourceDate
3 / 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	17,517
Sfr	634	1,452,540
PA	68	345,910
Mfr	116	1,355,020
Ind	13	71,460
Com	216	1,164,870
	<hr/>	<hr/>
	1,050	4,407,317
Location: Out		
Sfr	354	589,190
PA	7	213,510
Mfr	5	42,820
Ind	2	3,580
Com	4	76,700
	<hr/>	<hr/>
	372	925,800
TOTAL	1,422	5,333,117

Refuse - pickups by ClasssourceDate
3 / 2019

Location	Class	Pickups
IN	Sfr	1,324.0
	RefuseOnly	221.0
	PA	170.0
	Mfr	367.0
	Ind	18.0
	Com	1,767.5
		<hr/> 3,867.5
Out	Sfr	0.0
	Mfr	4.0
		<hr/> 4.0
TOTAL		<hr/> 3,871.5

Refuse - active accounts

sourceDate
3 / 2019

Location	Refuse Type	Accounts
IN	Small Dumpster	48
	PA	39
	Medium Dumpste	51
	Large Dumpster	61
	Compactors	3
	Cans Low Rate	6
	Cans	823
		<hr/>
	1,031	
Out	Large Dumpster	1
	Cans	1
		<hr/>
	2	
	<hr/>	
	TOTAL	1,033

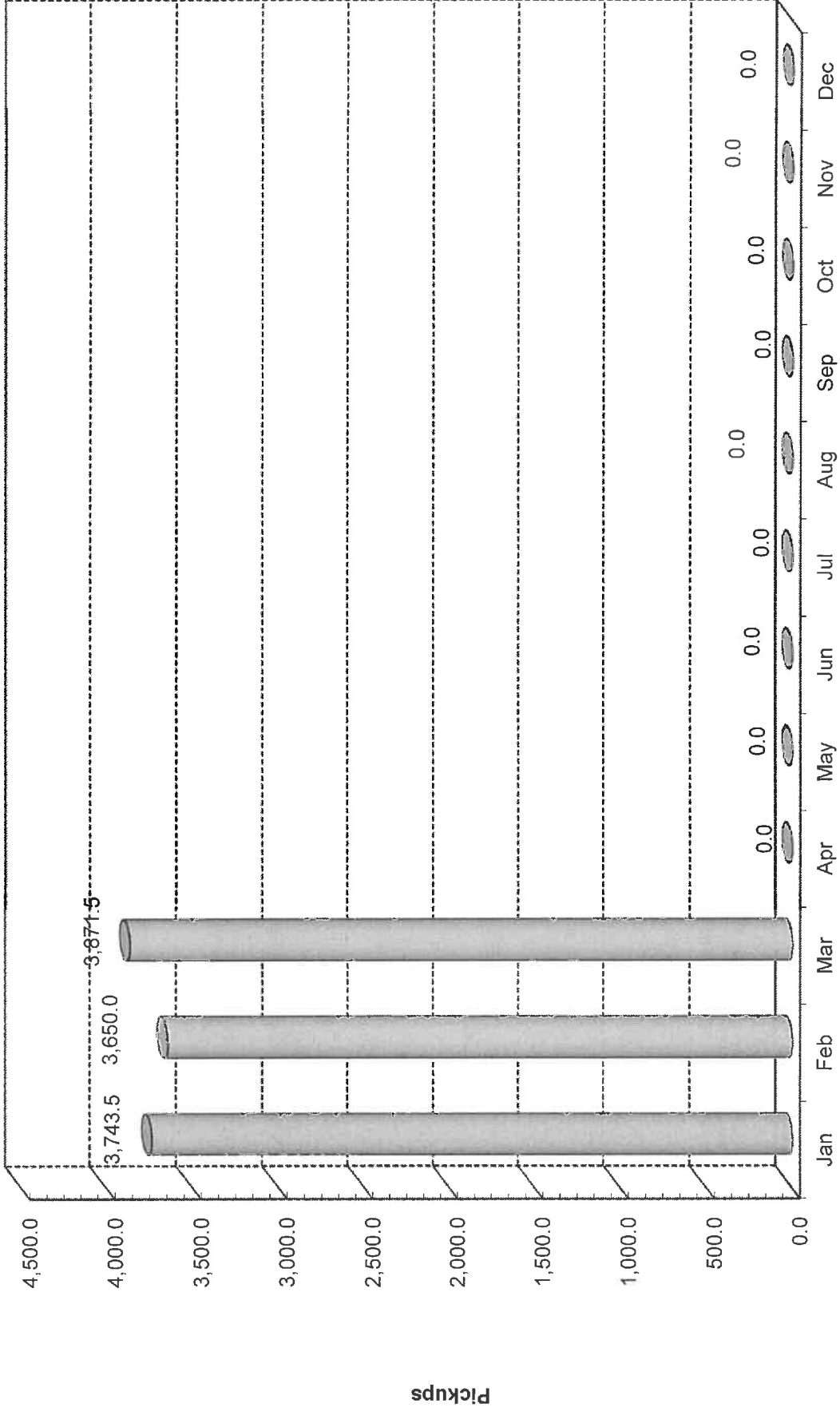
Recycle - pickups by ClasssourceDate
3 / 2019

Location	Class	Pickups
IN	Sfr	574
	RefuseOnly	21
	PA	0
	Mfr	50
	Ind	0
	Com	6
		<hr/> 651
Out	Sfr	0
	Mfr	0
		<hr/> 0
	TOTAL	651

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								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	4,038.5	600.0	470.5	1,087.5	57.5	5,002.5	8.5	11,265.0

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.

February 15, 2019		March 14, 2019	
day	flow (total flow)	day	flow (total flow)
15	279	1	263
16	435	2	363
17	342	3	254
18	238	4	241
19	239	5	212
20	237	6	282
21	247	7	272
22	264	8	276
23	228	9	284
24	250	10	241
25	221	11	223
26	268	12	278
27	254	13	241
28	255	14	281
29		15	
30		16	
31			

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: right;">days</td><td></td></tr> <tr><td style="text-align: right;">14</td><td style="text-align: right;">3757</td></tr> </table>	days		14	3757	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: right;">days</td><td></td></tr> <tr><td style="text-align: right;">14</td><td style="text-align: right;">3711</td></tr> </table>	days		14	3711
days									
14	3757								
days									
14	3711								
TOTAL DAYS	28								
TOTAL FLOW	7468								
	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	0	0	0
3% meter loss	164,951	197,550	159,994	0	0	0
Flushing	308,800	309,700	341,200			
SJC#3 FD use	5,000	5,000	5,000			
Leaks	216,000	316,000	226,000			
notes						
other non-metered use						
notes						
Additional water in storage						
notes						
Net production	6,287,249	7,036,750	6,735,806	0	0	0
Total other uses	-694,751	-828,250	-732,194	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						
notes						
other non-metered use						
notes						
notes						
Net production	0	0	0	0	0	0
Total other uses	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	
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	Cumulative Unaccounted 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	Cumulative Unaccounted 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	6,065,311	19,671,683	-1,402,689	22,315,000	240,903	
	Apr-19	0	19,671,683	0	22,315,000	0	
	May-19	0	19,671,683	0	22,315,000	0	
	Jun-19	0	19,671,683	0	22,315,000	0	
	Jul-19	0	19,671,683	0	22,315,000	0	YTD
	Aug-19	0	19,671,683	0	22,315,000	0	Unaccounted
	Sep-19	0	19,671,683	0	22,315,000	0	as % of Flow
Average	Oct-19	0	19,671,683	0	22,315,000	0	11.85%
Monthly Use	Nov-19	0	19,671,683	0	22,315,000	0	
6,557,228	Dec-19	0	19,671,683	0	22,315,000	0	-2,643,317
YEAR TOTAL:	3	19,671,683	Cumulative Metered/Other Use YTD	22,315,000	-2,643,317	Cumulative Unaccounted 3% meter loss	249,007 522,495

3 YEAR	Use	Flow	Daily Flow	3 Year Loss
AVERAGES:	4,825,926 :gal/month	9,499,037 :gal/month	190,795	as % of Flow 7.14%

source: Monthly Water Treatment Plant Report & utility.mdb's 3 yr cumulative flow 256,474,000
3 yr unaccounted -18,308,079

Utilization of Sustainable Annual Water System Capacity

Period start: Apr-18

Period end: Mar-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

119.5 million gallons
58.3%

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	
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	0.87					
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	6.50	0.00	0.00	0.00	0.00	0.00

Cumulative thru

DEC	29.05	26.45	25.82	26.54	6.50	0.00	0.00	0.00	0.00	0.00
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Prevention of Wastewater Facility Overloading

Period start: Mar-18
 Period end: Feb-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