

Input Briefing: RWQC & Council Request for Performance Metrics

May 24, 2017



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Purpose of the request

- The RWQC and Council have requested WTD post metrics:
 - Present operational patterns
 - Highlight system dynamics and stresses
 - Identify approaching challenges
 - Share an overview of the system
 - Serve as a common status communications tool

Dashboard metrics requested

- Volumes of flows, solids and biosolids
- Sediment and water quality data
- Permit violations and reports to regulators
- Energy generation and usage (gas and electricity)
- Rate and capacity charge revenue and expenditures
- Significant cost changes of major capital projects

Dashboard update schedule

- Prepare and electronically post metrics monthly
- Metrics transmitted to the Council and the RWQC by September 1, 2017
- Regular monthly posting of the metrics shall begin by November 2017
- WTD goals is to have first summary report by August 2017

MWPAAC feedback

- What additional performance metrics do you believe would be helpful to ensure we are being responsive and accountable?
- What recommendations do you have regarding how best to graphically depict these measures so they are best understood?

Potential Dash Board Look

Wastewater Treatment Division Dashboard

The King County Wastewater Treatment Division Dashboard provides relevant information on operational, financial and regulatory performance of the utility. Much of the information provided is updated monthly. If you have any questions regarding the information on this dashboard, please contact:

Robert Tovar, Wastewater Treatment Division

206-477-5374

robert.tovar@kingcounty.gov

Potential Dash Board Look

Flows &
Volumes:



Solids &
Biosolids:



Energy
Generation:



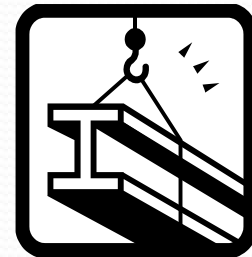
Regulatory
Compliance:



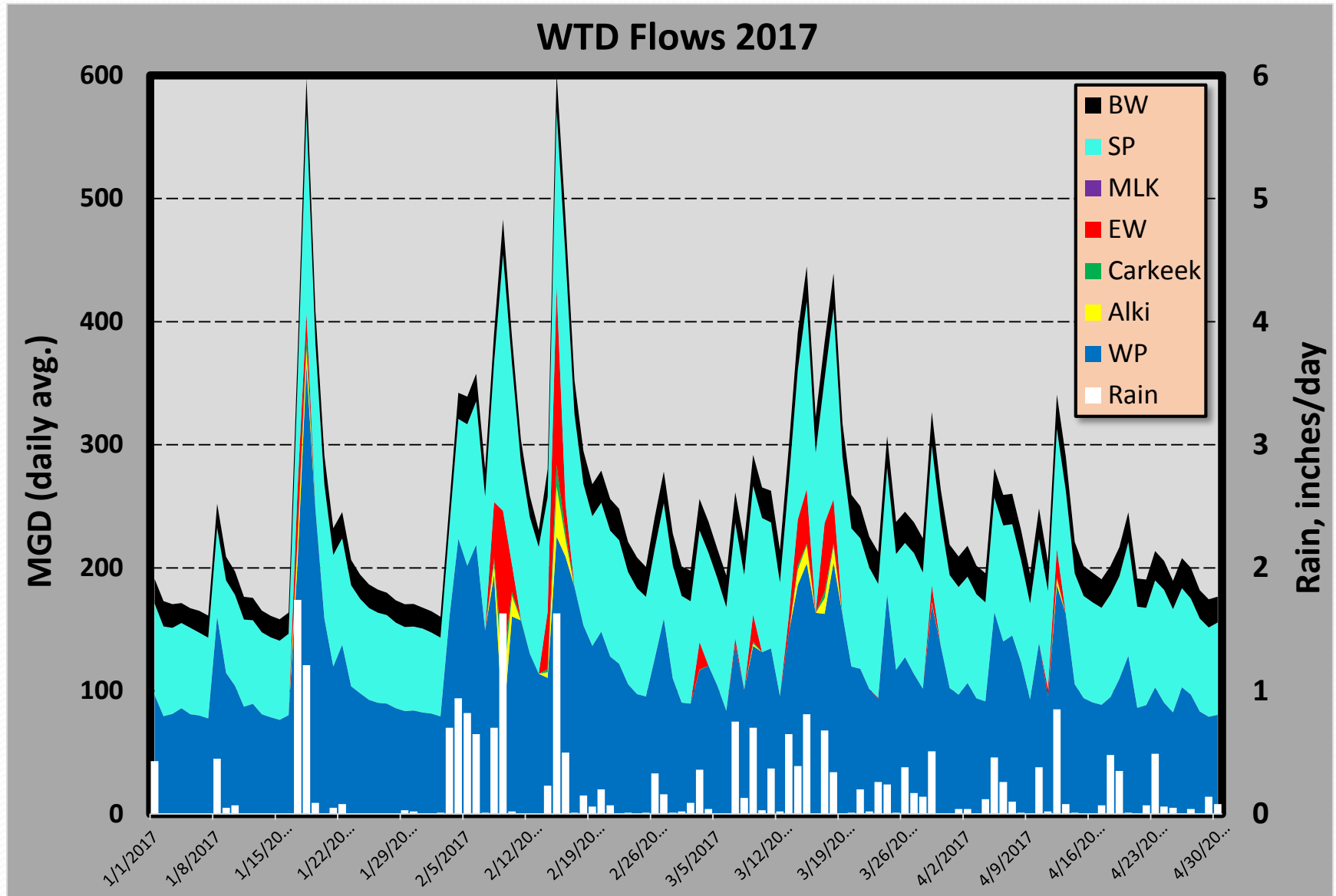
Financials:



Capital
Program:

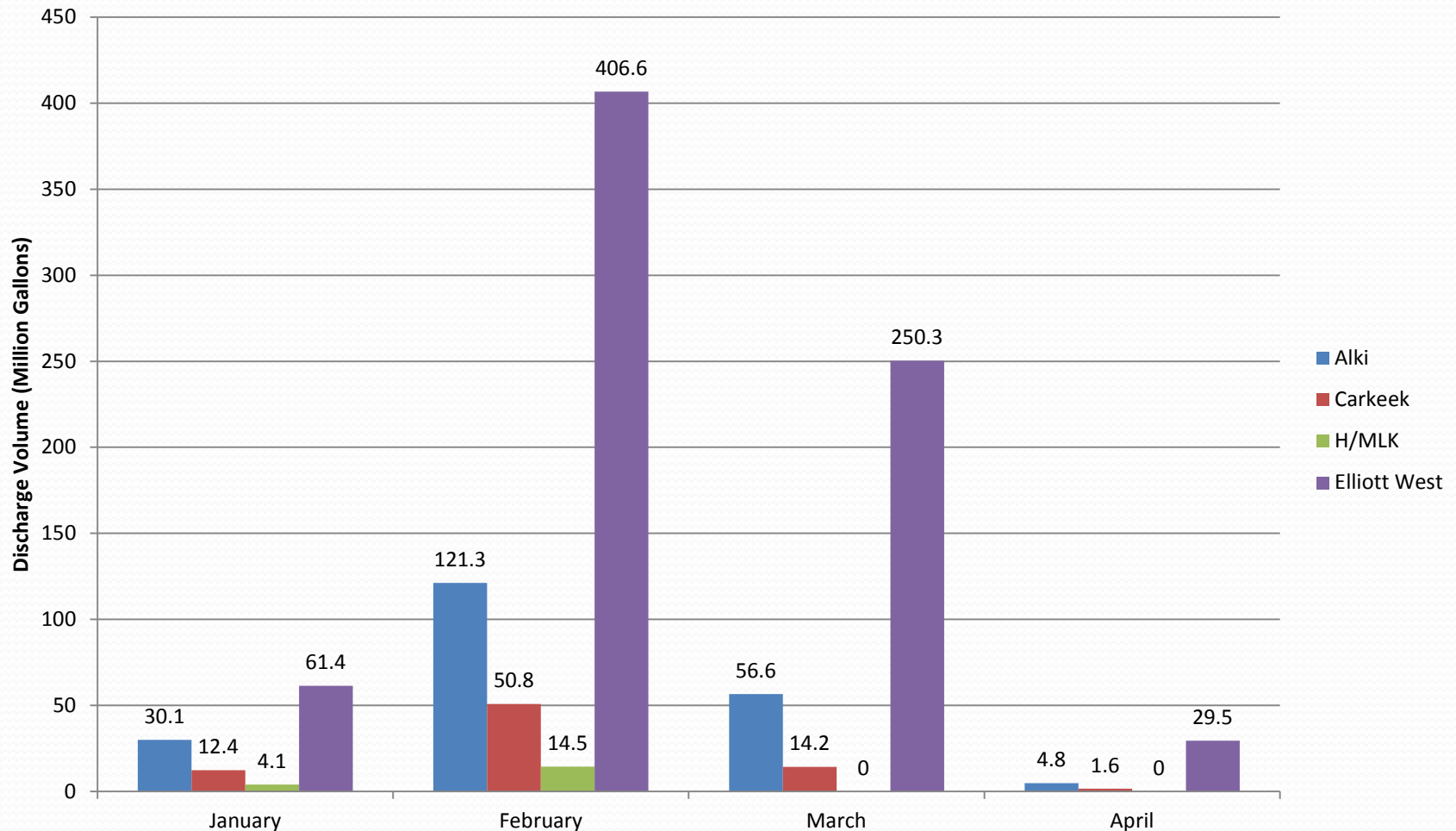


Example – Flows & Volumes



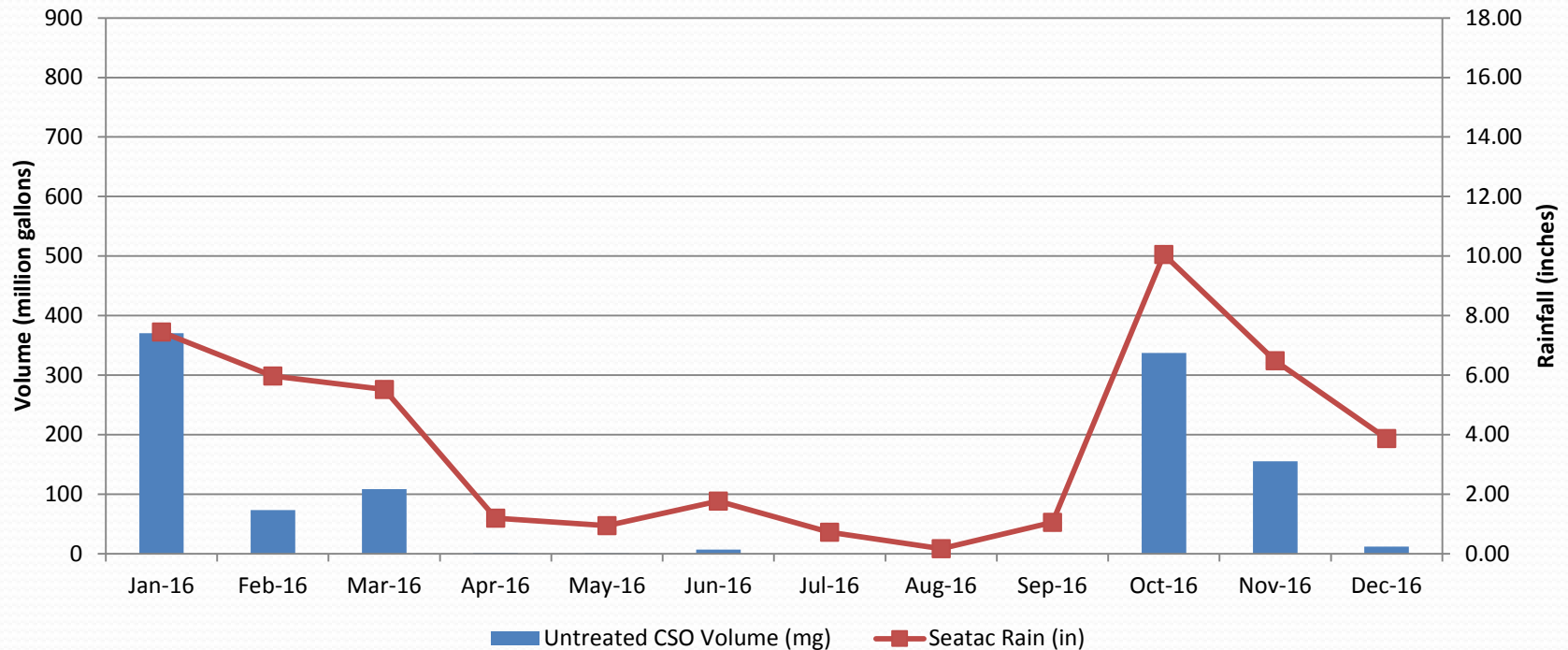
Examples – Flows & Volumes

West Section Treated CSO TP Discharge Volumes (January - April 2017)



Examples – Flows & Volumes

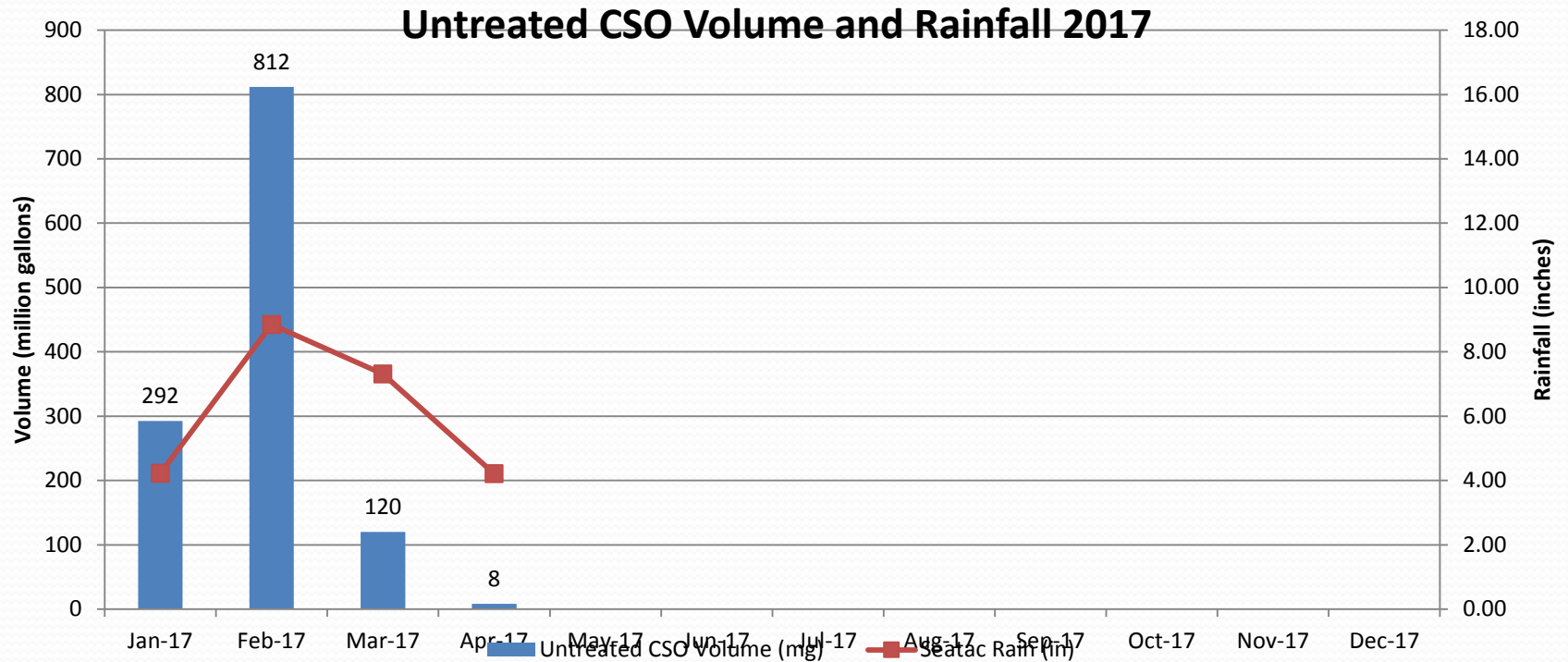
Untreated CSO Volume and Rainfall



The sources are the 39 County CSO locations that discharge to Lake Washington, Lake Union, the Lake Washington Ship Canal, the Duwamish River, Elliott Bay, and Puget Sound as shown on this map...

<http://www.kingcounty.gov/services/environment/wastewater/cso/library/map.aspx>

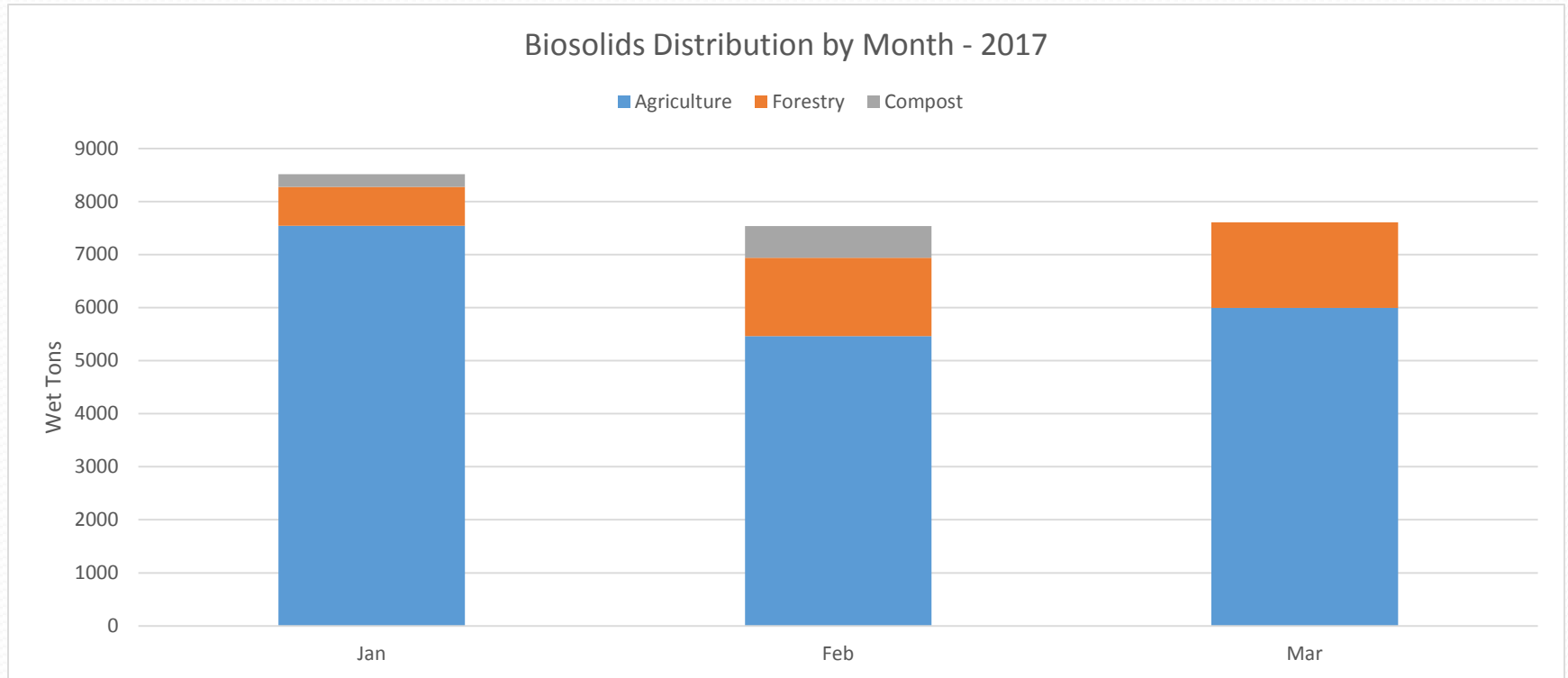
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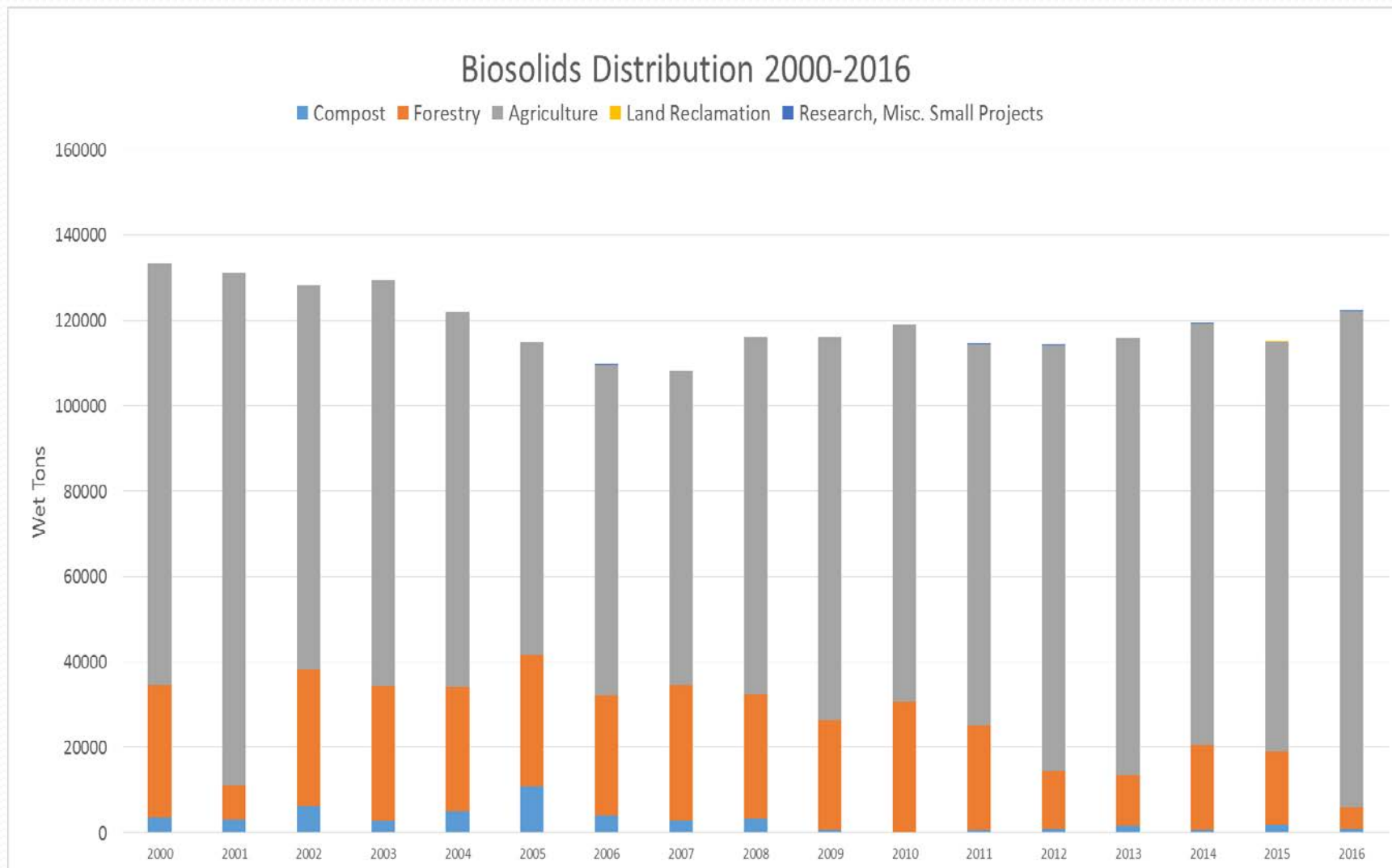
Examples - Biosolids



Activity Description:

Q1 of 2017 saw more precipitation (rain and snow) than previous years, which limits distribution options. During winter we send biosolids to Natural Selection Farms (NSF) for storage and GroCo. We were challenged this year at our storage site in Yakima (NSF) which required us to divert solids to Boulder Park Incorporated (BPI). Heavy snow followed by rain near BPI made roads and fields difficult to travel, leaving many trucks stranded. We anticipate the forestry sites to increase application as the mountains dry.

Examples - Biosolids



Example – Regulatory Compliance

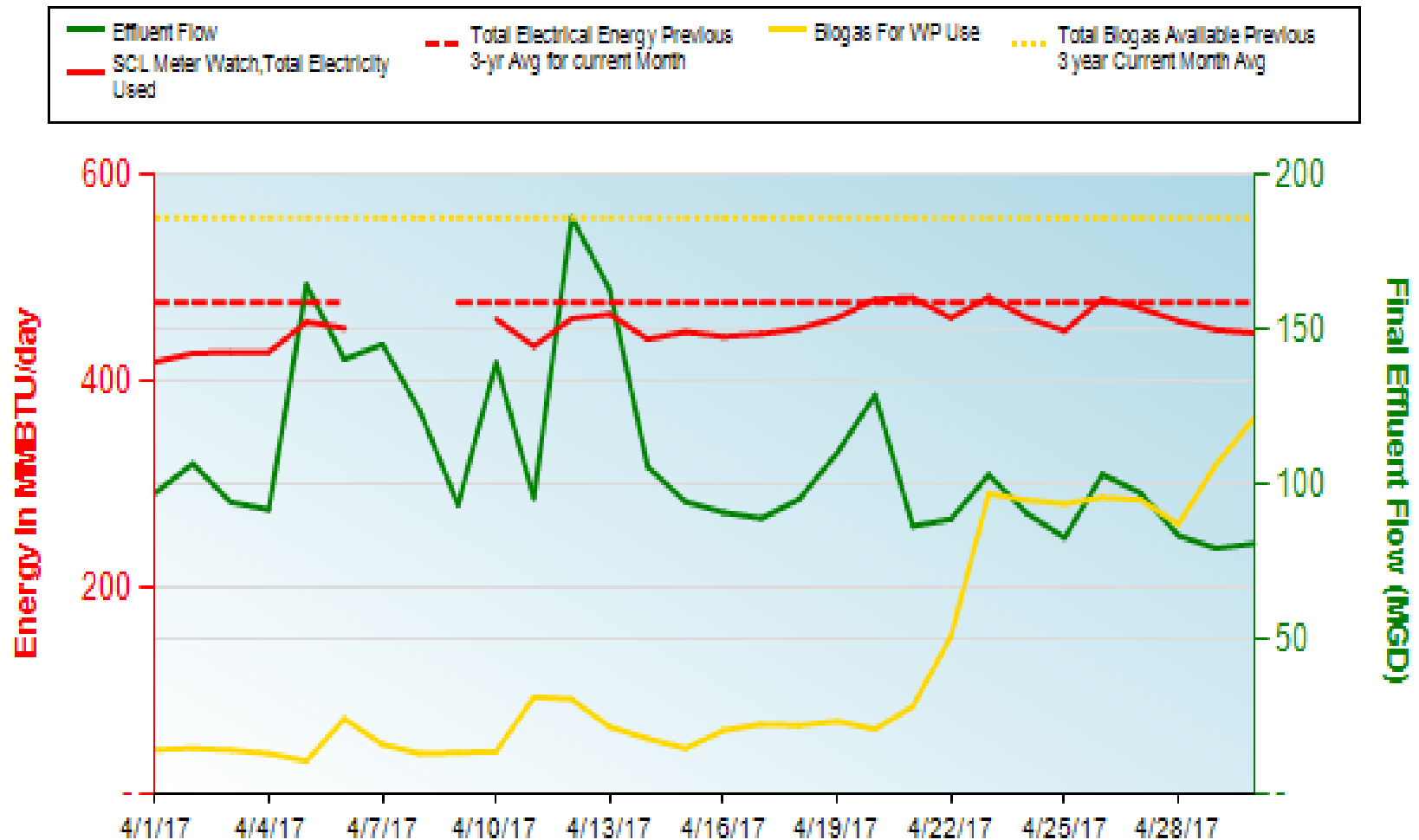
NPDES Permit Exceedances (Reportable Events Subject to Potential Penalties) – Wastewater Treatment Facilities or Conveyance System			
Facility	January 2017	February 2017	March 2017
<i>Effluent Limitations at Wastewater Treatment Facilities (number of exceedances)</i>			
West Point	0	14 *	21 *
South Plant	0	0	0
Brightwater	0	0	0
Vashon	0	0	0
Carnation	0	0	0
Henderson/MLK CSO	0	0	0
Alki CSO	2	3	1
Carkeek CSO	0	0	2
Elliott West CSO	4	3	4
<i>Dry Weather Overflows in Combined or Separated Systems</i>			
West Division – Dry Weather Overflows at CSO Outfalls	0	1	0
West Division – Sanitary Sewer Overflows	1	0	0
East Division – Sanitary Sewer Overflows	1 (TBD)	0	0

* Effluent limitation exceedances as a result of West Point flooding and equipment damage incident.

Notes: Goal for compliance for all events is “zero”, and all exceedances have potential to be assessed penalties.

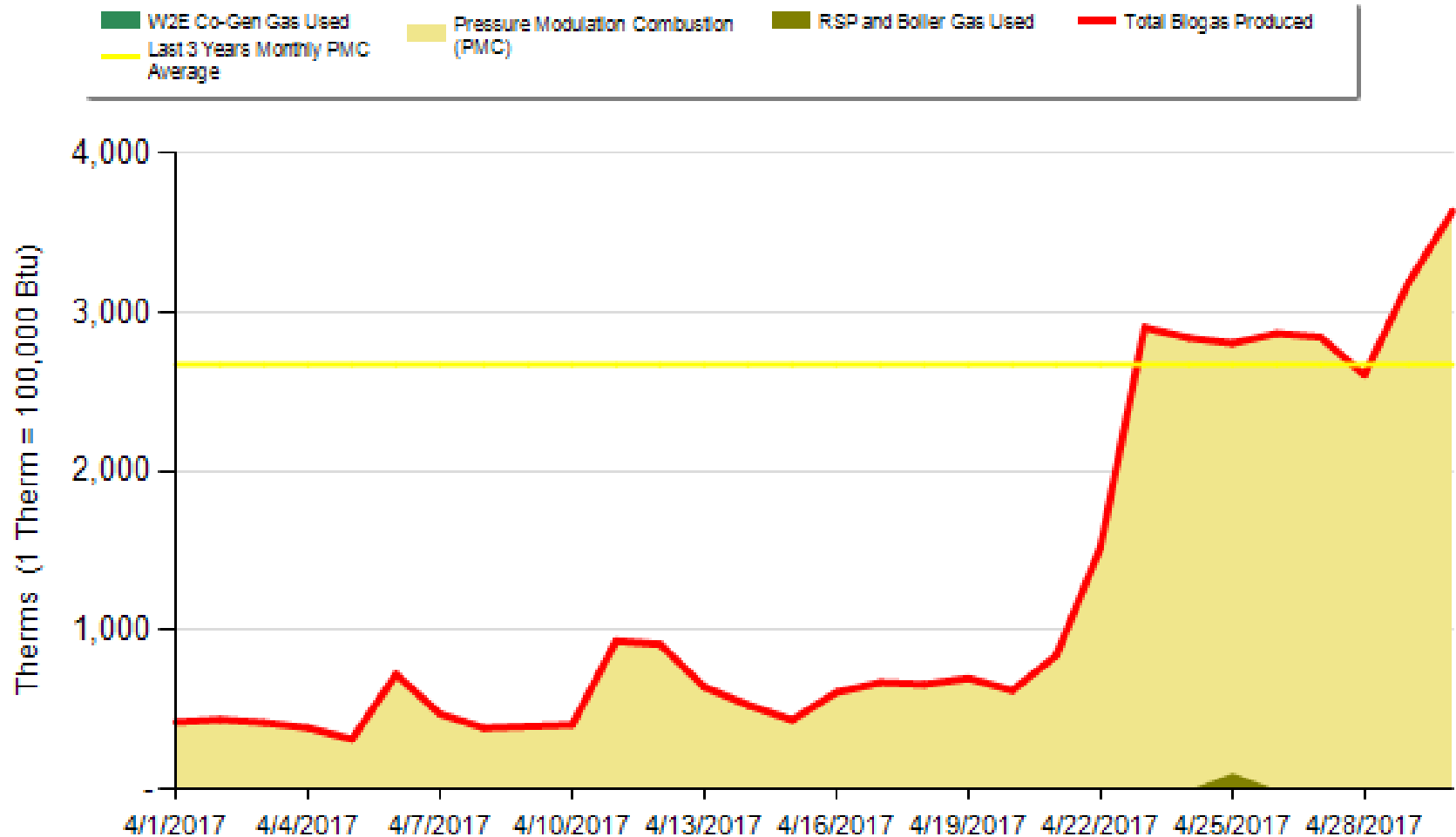
Example – Energy

West Point Biogas Production and Use



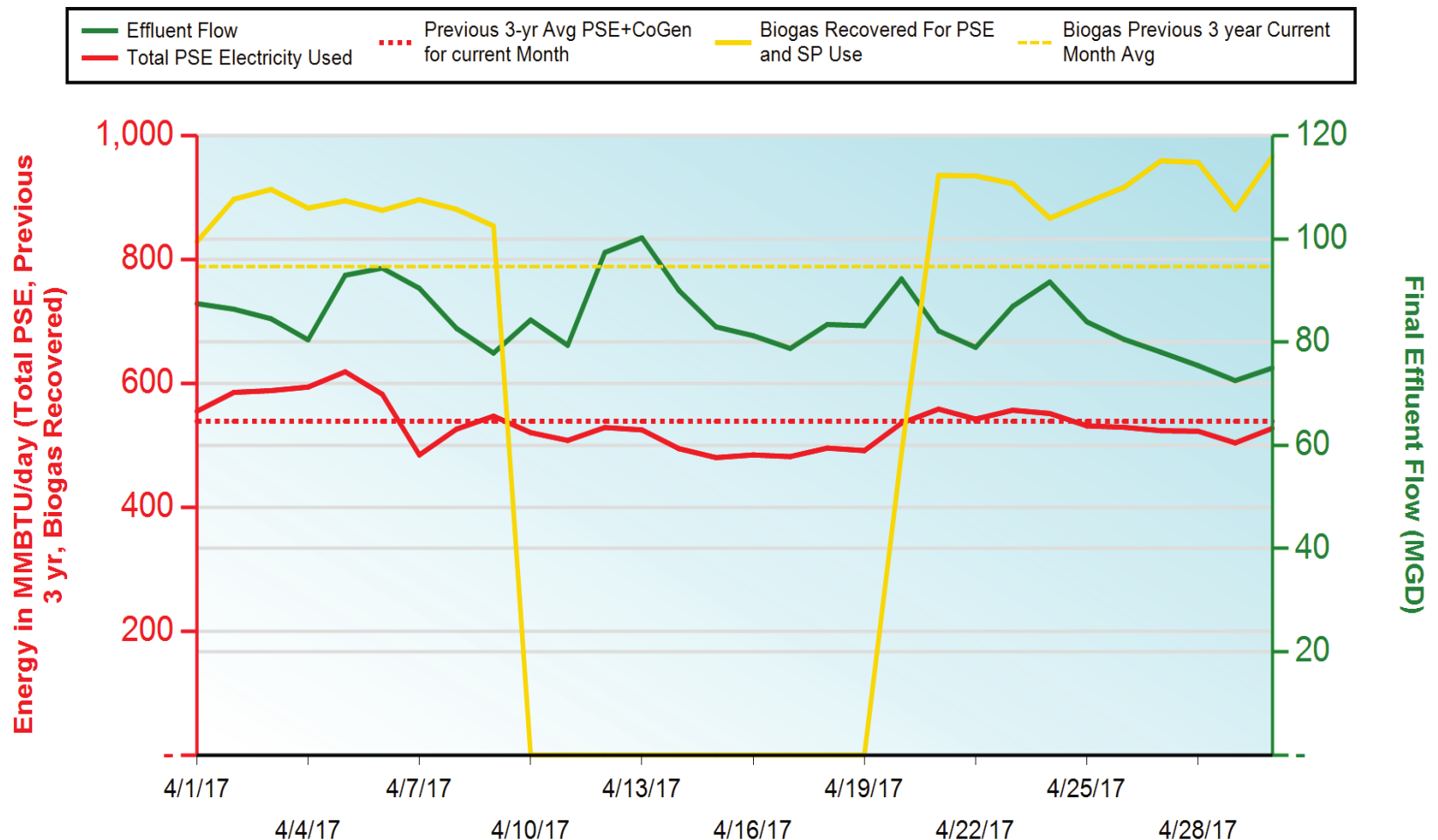
Example – Energy

West Point Biogas Production and Use



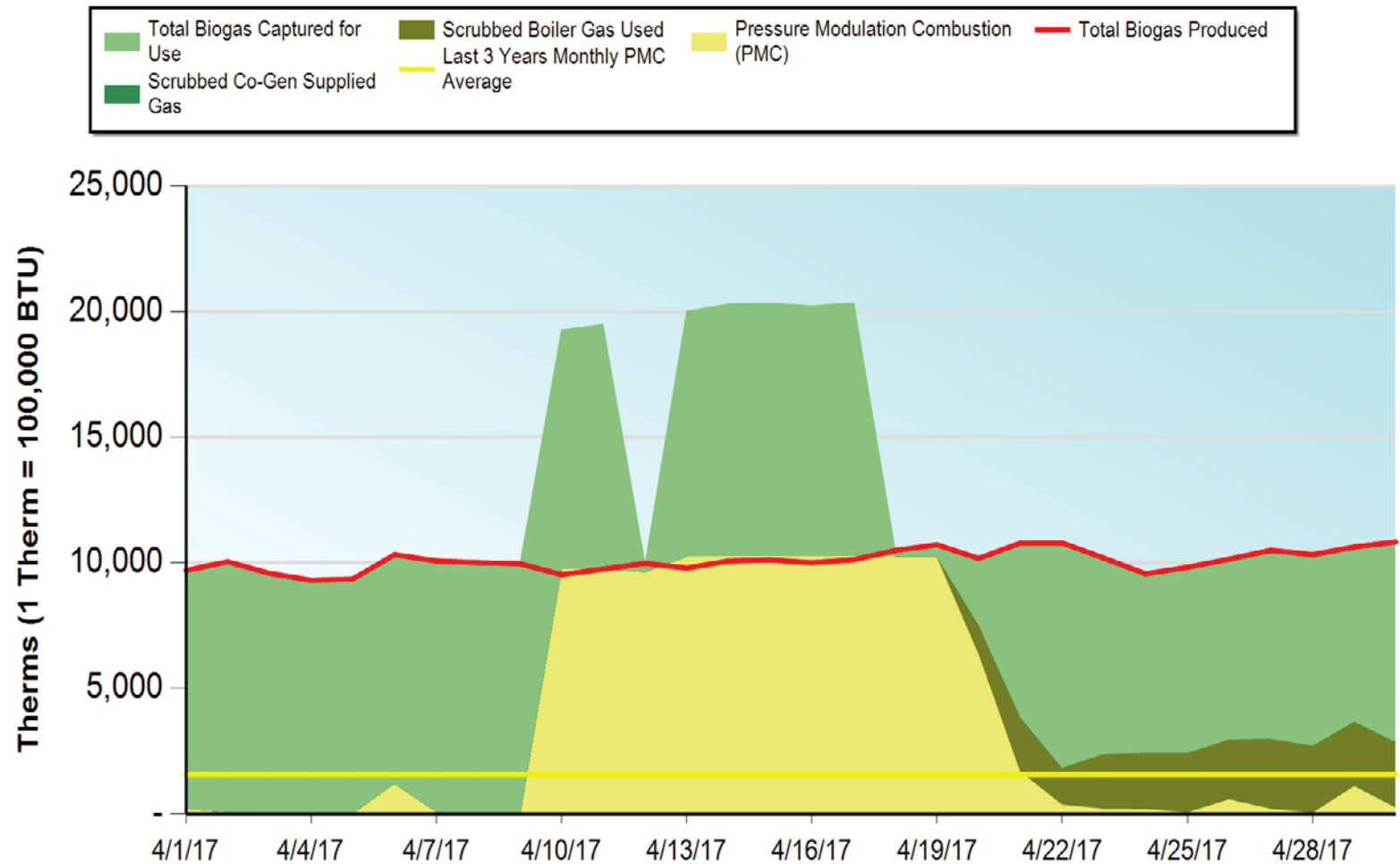
Example – Energy

Graph SP2 - South Plant Electricity Use and Biogas Produced (MMBTU/day)



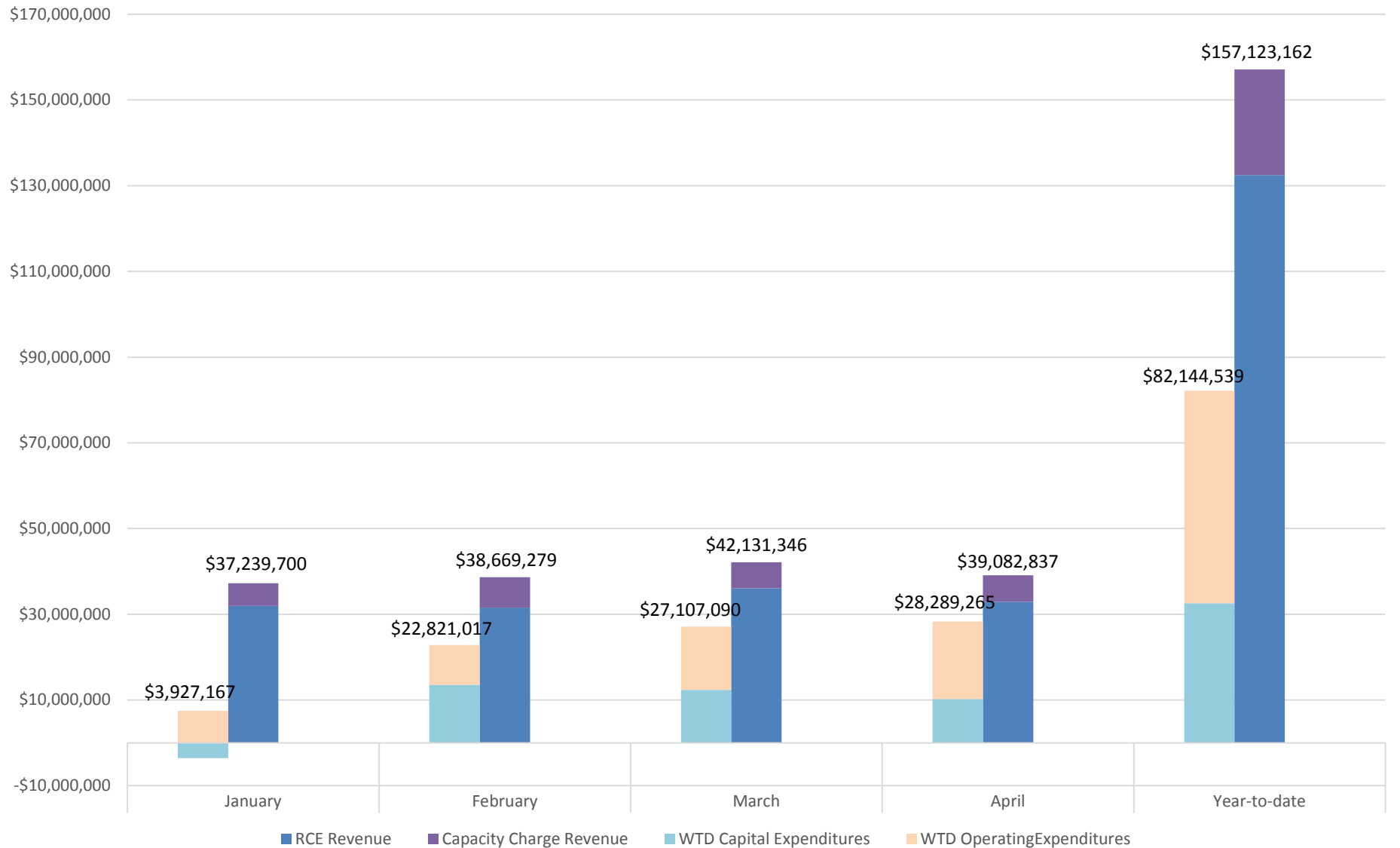
Example – Energy

Graph SP3 - South Plant Biogas Production and Use



Example – Rate & Capacity Charge

WTD Revenue and Expenditures Y-T-D



Example – Capital Costs Changes

REPORT: Baseline Summary – Master Projects Quarter 1 2017

King County
Department of Natural Resources and Parks
Wastewater Treatment Division



Project	EBS No.	Phase	Baseline Name	Budget Baseline	Baseline Schedule Duration	Budget Variance	
Assess & Refurbish or Replace Duty Pump's VFDs at SP ETS	1114373	Implementation	Gate 3-Baseline (8/10/2014)	\$4,138,186	1,056	\$234,677	6%
CSO Control & Improvements - Magnolia	1038448	Implementation	Gate 3-Baseline (10/09/2012)	\$48,208,833	1,211	\$7,563,712	16%
CSO Control & Improvements - Murray	1038126	Close Out	Gate 3-Baseline (10/09/2012)	\$50,394,779	1,576	-\$2,928,960	-6%
East County WTD Fleet Repair & Maintenance Facility Replacement	1123517	Final Design	Gate 3-Baseline (10/11/2016)	\$9,999,584	750	-\$731	0%
Environmental Lab - Energy Improvements	1048077	Final Design	Gate 3-Baseline (10/11/2016)	\$5,850,874	566	\$0	0%
Fremont Siphon	1047697	Implementation	Gate 3-Baseline (08/12/2012)	\$45,877,738	1,618	\$0	0%
Georgetown Wet Weather Treatment Station	1121402	Final Design	Gate 3-Baseline (4/19/2016)	\$260,713,113	2,141	\$1,244,740	1%
Hanford at Rainier and Bayview North	1116802	Implementation	Gate 3-Baseline (5/13/2014)	\$33,107,404	1,287	\$1,082,614	3%
Kent Auburn Phase B	1123632	Final Design	Gate 3-Baseline (9/8/2015)	\$40,861,397	1,369	-\$3,136,982	-8%
Liberty Boat Replacement	1123628	Implementation	Gate 3-Baseline (7/17/2014)	\$2,723,248	531	-\$97,203	-4%
Murray Pump Station Upgrade	1037515	Close Out	Gate 3-Baseline (10/9/2012)	\$6,517,203	1,422	-\$848,069	-13%
North Creek Interceptor	1114382	Implementation	Gate 3-Baseline (07/16/2012)	\$56,590,659	1,604	\$34,967,304	62%
South Plant ETS Peaking Pumps VFDs, Assess & Replace	1114368	Implementation	Gate 3-Baseline (8/10/2014)	\$3,941,503	1,056	\$698,064	18%
SP Assess & Replace Raw Sewage Pumps, Motors, Drives	1114367	Implementation	Gate 3-Baseline (5/17/2013)	\$12,118,097	1,413	\$3,630,628	30%
SP Biogas and Heat Systems Improvements	1123626	Final Design	Gate 3-Baseline (4/11/2017)	\$59,897,304	1,410	\$0	0%
SP Localized Hypo and Caustic Chemical Storage	1123625	Final Design	Gate 3-Baseline (7/12/2016)	\$6,574,030	786	-\$1,053,698	-16%
SP Reclaimed Water Facility Modifications	1116796	Final Design	Gate 3-Baseline (10/13/2015)	\$3,914,248	925	-\$104	0%
STP Digesters 2, 3 & 4 Roof Equipment Replacement & Coating	1121403	Implementation	Gate 3-Baseline (1/14/2014)	\$5,752,015	897	-\$1,140,397	-20%
Sunset/Heathfield Pump Station Replacement & Forcemain Upgrade	1038122	Final Design	Gate 3-Baseline (4/14/2015)	\$69,754,491	1,813	\$5,570,217	8%
West Point Liquids Control System Replacement	1114376	Close Out	Gate 3-Baseline (05/05/2011)	\$17,918,329	1,880	-\$2,050,523	-11%
West Point Solids Control System Replacement	1114374	Close Out	Gate 3-Baseline (05/05/2011)	\$14,493,970	1,880	-\$869,542	-6%
WP Intermediate & EPS VFD & Dewatering Energy Project	1117748	Implementation	Gate 3-Baseline (8/14/2012)	\$33,541,919	1,142	-\$8,722,002	-26%
WPTP Digester Floating Lids	1038124	Hold	Gate 3-Baseline (12/11/2012)	\$3,820,277	1,503	-\$2,138,878	-56%
WPTP OGADS Replacement	1116798	Final Design	Gate 3-Baseline (7/12/2016)	\$51,734,135	1,802	-\$844,122	-2%

Questions and feedback

Contact Robert Tovar,

robert.tovar@kingcounty.gov

(206) 477-5374