

Non-Wires Pilot for South of Allston

June 13th, 2018



Agenda

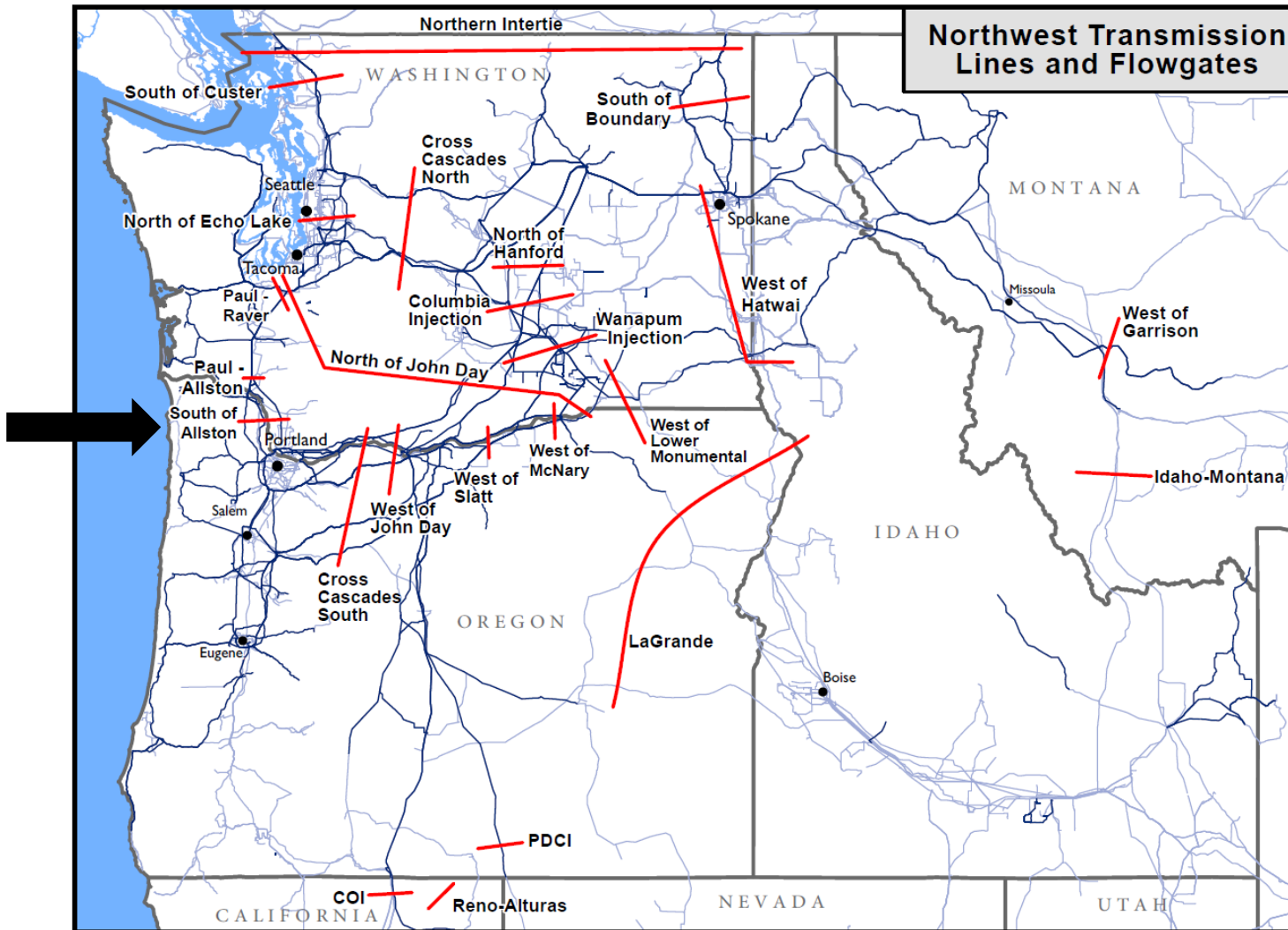
1. Share BPA's expanded congestion relief analysis achieved from the SOA Pilot last summer of 2017
2. Discuss enhancements made to BPA's forecasting tool used to trigger SOA pilot events for this summer 2018
3. Review how customers may access BPA's notification of SOA Pilot redispatch events this summer
4. Wrap up and next steps

Pilot Objectives

1. Secure a non-wires portfolio to reduce flows on SOA flowgate during summer peak periods
2. Measure and validate post-event data to determine amount of flow reduction
3. Leverage learnings to inform future non-wires program design choices

BPA is on track to meet all SOA Pilot objectives for this coming summer 2018

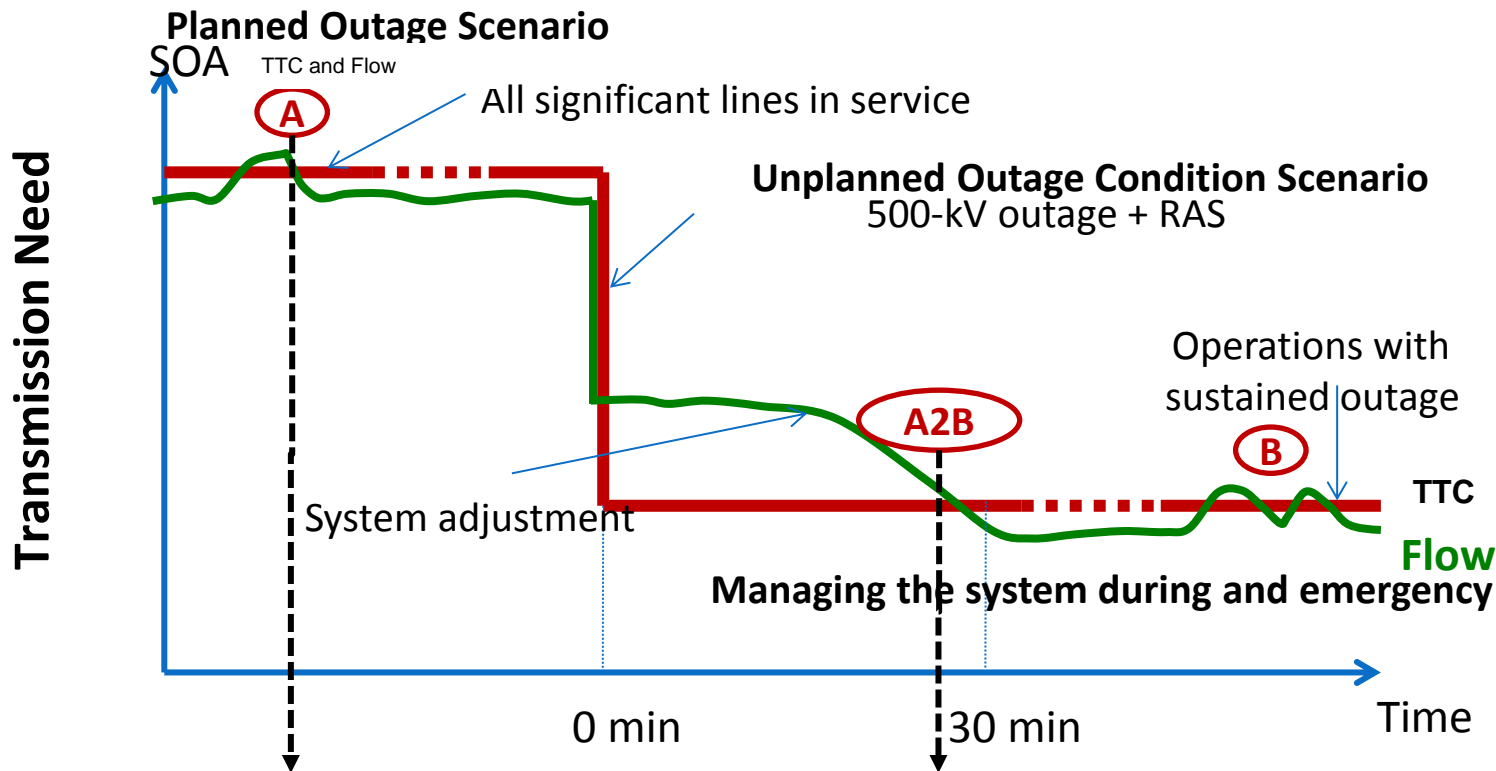
Map of PNW Transmission Paths



GIS Analyst: RLW Map Production Date: 6/23/2015

Map of flow gates highlighting SOA used by operations to monitor Portland metro area

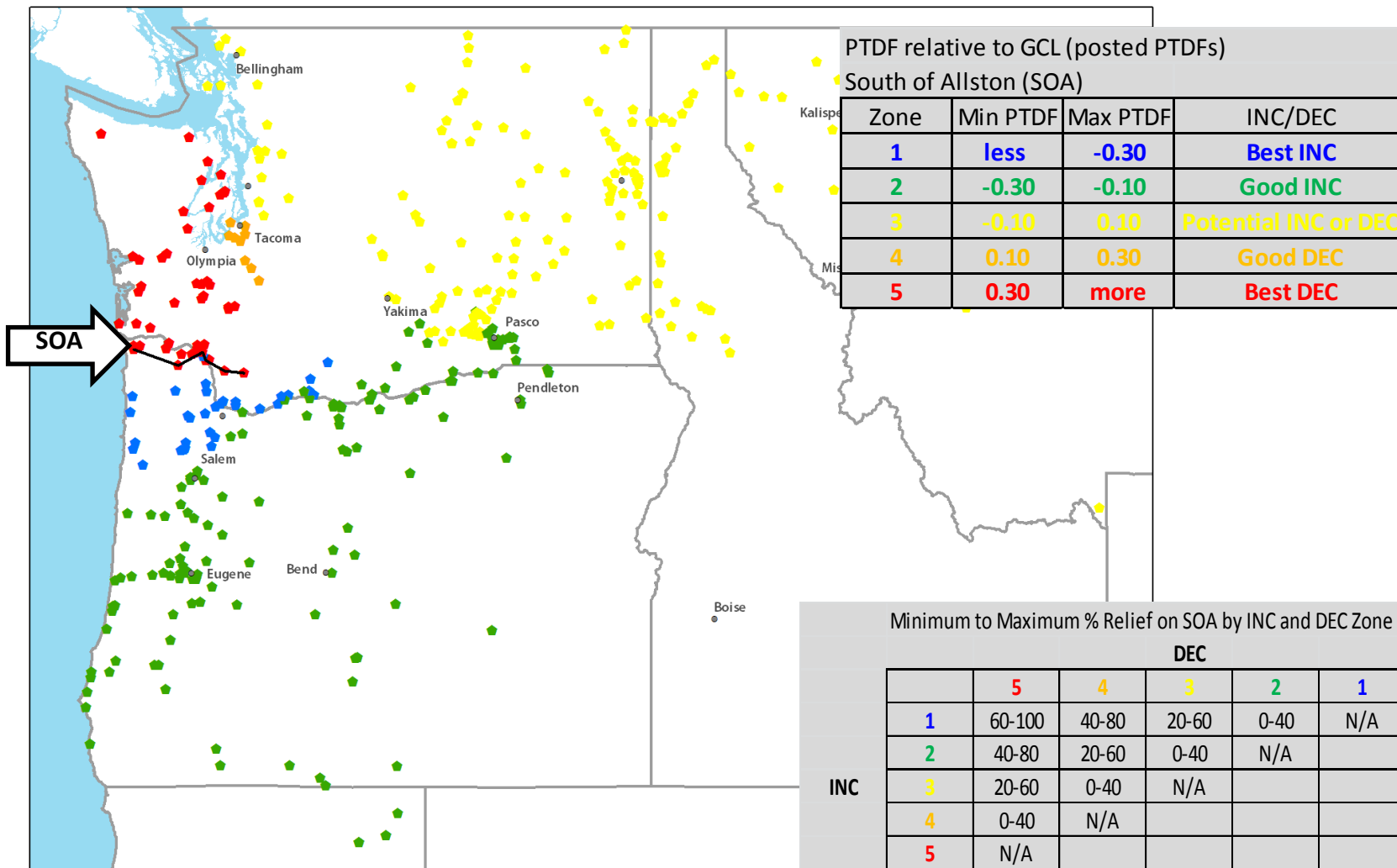
Scope of the SOA Pilot



Non-Wires	Non-Outage (A)	Outage (A2B)
	Day Ahead Notice Incremental capacity, Decremental capacity, DSM/Demand Response	Within Hour notice used to manage the transmission system post contingency. This is outside of the scope of BPA's SOA Pilot.

Scope of RFO on "A problem" to mitigate high flow risk (preventative, pre-contingency focus)

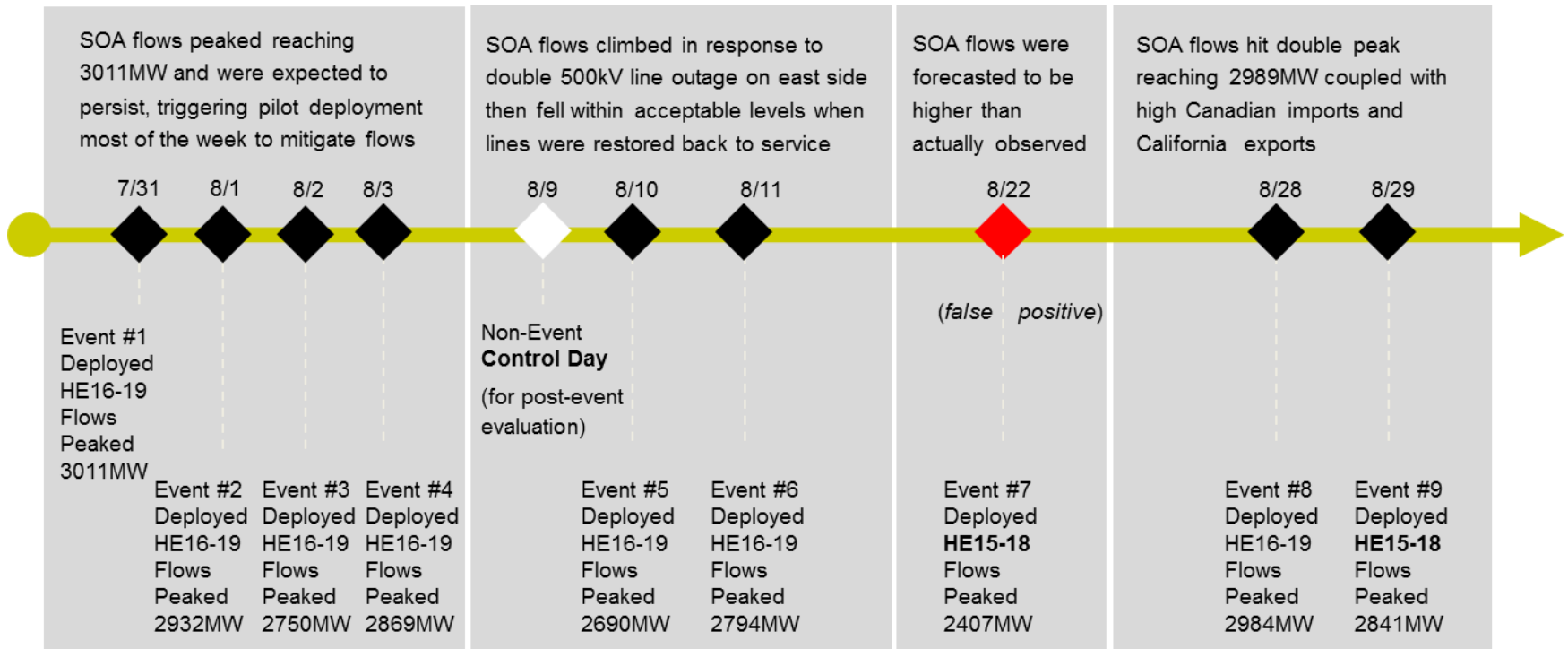
Congestion Map



This map was created by BPA for prospective bidders to respond to BPA's RFO seeking non-wires

Pilot Event Days

- BPA purchased the right to deploy 10 events totaling 40 hours (each event deployed in four-hour blocks).
- A total of nine events were deployed and are represented on the time line below.
- Since our last meeting on 12/6, staff have completed post-event analysis on all nine event days.



As operating conditions drove flows up, the SOA Pilot acted to reduce peak flows and provide congestion relief

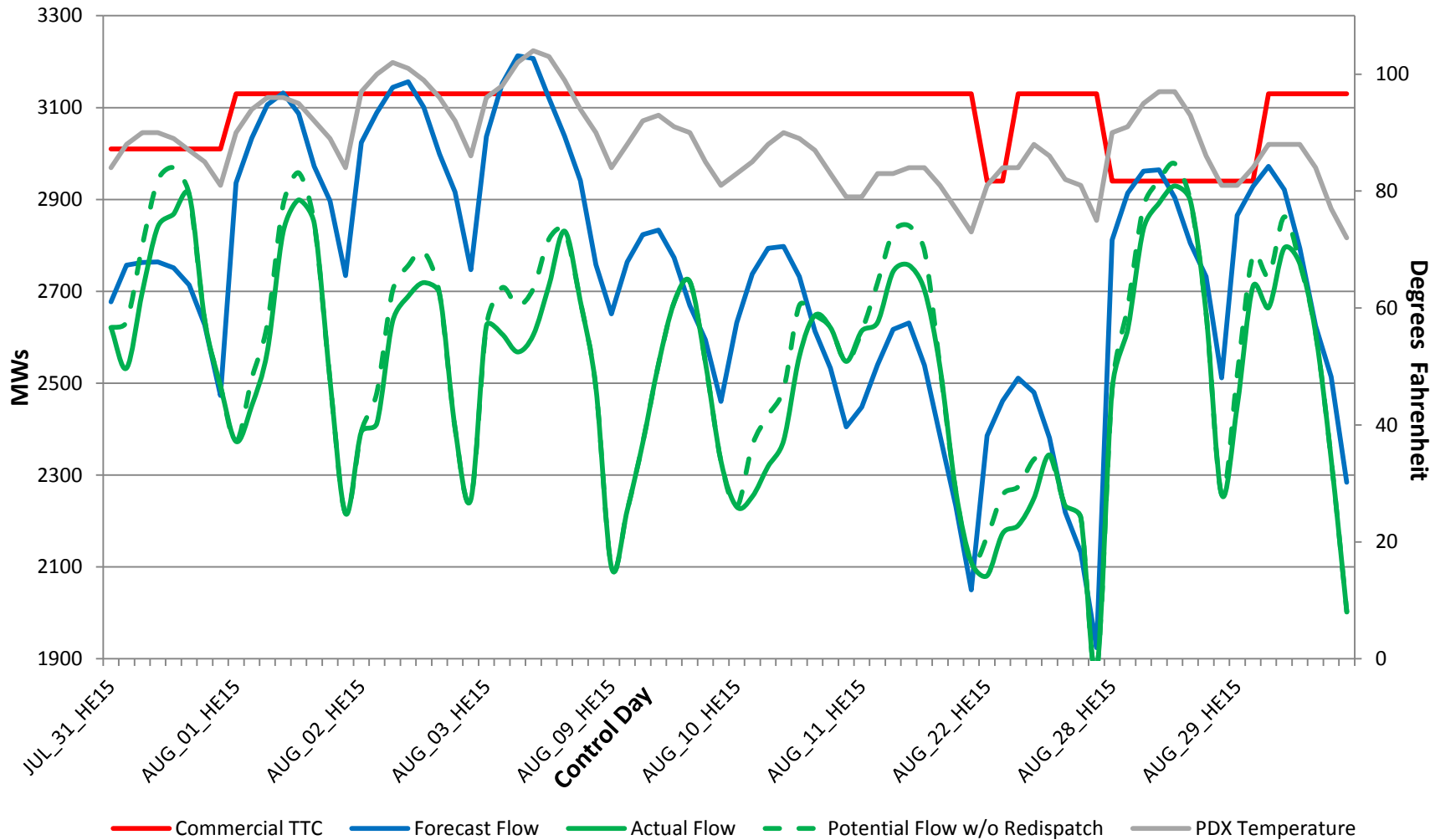
2017 SOA Pilot Results

- Analysis shows that summer 2017 flows on the SOA were reduced when the SOA Pilot was deployed
- The amount of flow reduction, attributable to the SOA Pilot, varies depending on whether or not the total portfolio was dispatched

	Total Portfolio Dispatch			Partial Portfolio Dispatch		
	Max	Avg	Min	Max	Avg	Min
Best Case Calculates impacts based on system topology, taking into account outages	-119	-118	-117	-87	-86	-85
Schedule Informed Calculates impacts based on schedules before and during events, including resupply schedules	-112	-105	-101	-86	-69	-49
Worst Case Calculates impacts based on the weighted average of all resources increasing generation around events	-68	-65	-61	-52	-48	-46

While flows did not reduce as much as expected, the net effect is lower flows attributable to the SOA Pilot

2017 SOA Pilot Reduced Flows Chart



SOA summer peak flows were lower with the SOA Pilot than without it!

Forecasting Tool

- BPA developed an in-house a trigger tool that generates a daily peak flow forecast on the SOA flowgate.
- The purpose of the tool is to maximize the value of the limited number of redispatch hours.
- The tool indicates when to deploy the SOA Pilot based on the next day's forecasted flow relative to forecasted TTC.
- The tool was developed using a statistical ridge regression model that leverages data back to 2012.
- The forecast is calculated at 04:00 on preschedule day for an eight hour window (14:00-22:00) .
- After considering system conditions and outages, BPA uses the tool to decide to deploy the SOA Pilot or not.

BPA's internal forecasting tool was used to inform pilot deployments to maximize performance of the SOA Pilot

2018 Forecasting Tool Enhancements

- Expanded data set by including last summer.
- Performed statistical analysis to update ridge regression model coefficients.
- Added logic in the model for within season correction to capture later afternoon peaks.
- Specific to stop firm sales forecasting:
 - Added June and weekends to forecast model
 - Includes data when stop firm sales policy is in effect outside of the SOA Pilot (including weekends)
- The new version of the trigger/forecasting tool is expected to realize the most value out of the 40 hours of congestion relief this summer.

A sharper forecast is expected to allow BPA to realize the most value out of the full 40 hours of congestion relief

Event Notification

BPA will conduct a live demonstration of how transmission customers can access notifications of SOA Pilot (redispatch events) from July through September 2018.

Step 1. From the [webSmartOASIS](#) website, click on “Notices”

Step 2. Select “Messages”

Step 3. Set “Filters” to view messages:

Select “ALL” or “BPAT”

Customer Code: Select “ALL” or “BPAT”

Category: “CURTAILMENT” for Firm TLR Avoidance notices

Category: “CONGESTION RELIEF OFFERS” for SOA Pilot Redispatch notices

Time: Select your time zone

BPA
provides
2 event
notice
postings

Step 4. Click “Misc” to set alarm notifications

Select “Alarm Preferences”

Option “soft” or “hard” “Sound” and/or “Email”

If Email selected you must also provide the “Email of User” at top

Similar to last summer, BPA plans to stop unlimited firm sales and redirects during SOA Pilot event periods

Next Steps

- We are well positioned to re-launch the SOA Pilot in July 2018 and run it through the end of September 2018.
- We are coordinating with transmission planning on how to integrate non-wires into cluster studies to meet long-term commercial demand.
- Our agency strategic plan states that “non-wire solutions will play a more important role in meeting service requests in the years ahead.”
- The results of the cluster study coupled with this summer’s SOA Pilot performance will inform future requirements for longer-term non-wires program development.

BPA is actively engaged in satisfying our strategic plan to have non-wires play a more important role in the years ahead!