



# PacifiCorp's California Wildfire Mitigation Plan Update September 17, 2019 California Public Utilities Commission





# Agenda

- PacifiCorp's Objectives
- Identified Risk
- Plan Progress
- Challenges & Successes

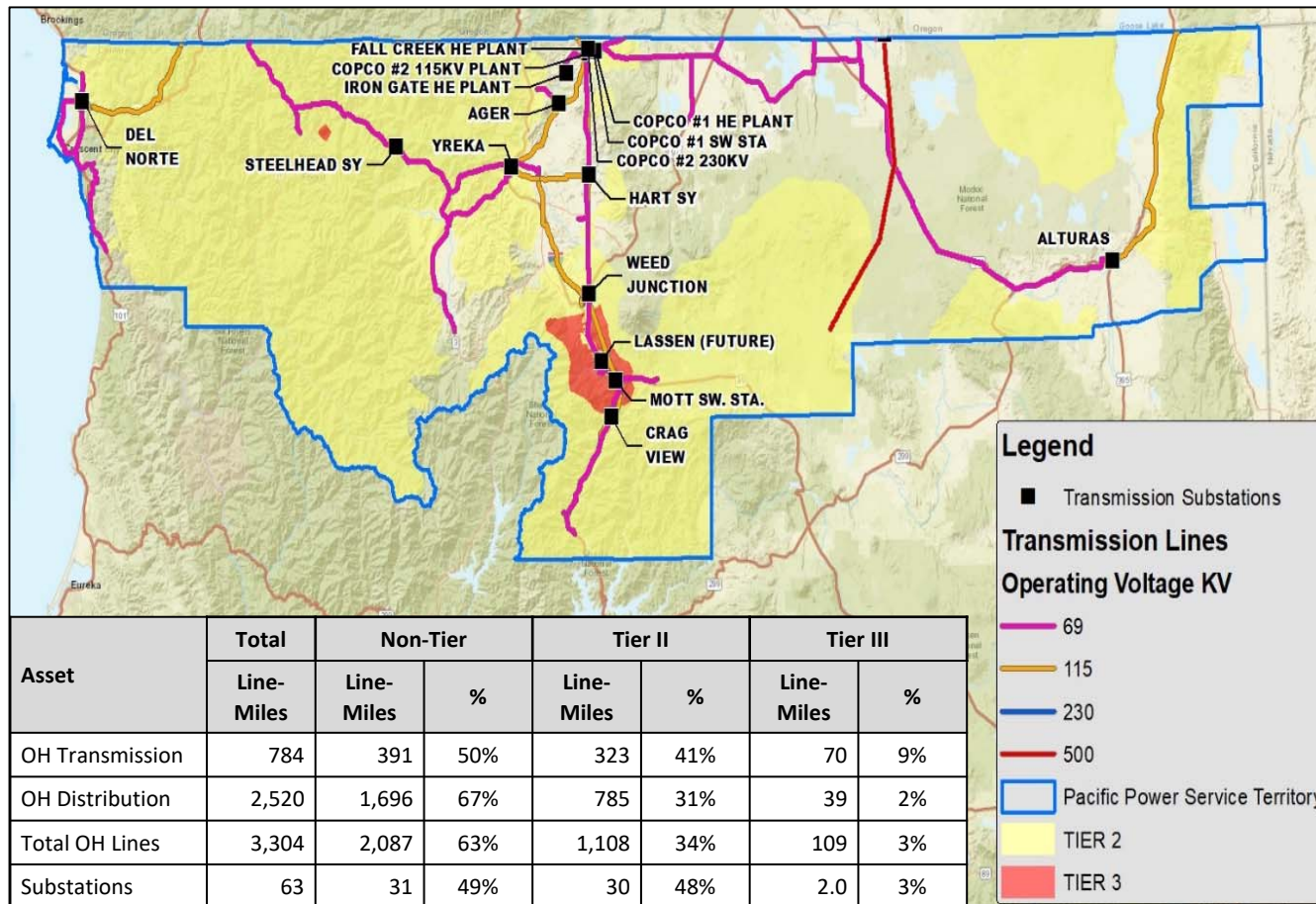


# Key Objectives of PacifiCorp's Plan

- More resilient systems with lower likelihood of fault events
- Better response when faults occur, including equipment and personnel plans to minimize scope and duration of the fault event
- Situational awareness and operational readiness designed to mitigate impacts to the system
- Maintenance of the plan, assessment of its effectiveness and review of impacts on stakeholders



# PacifiCorp's California Service Territory



PacifiCorp provides electricity to approximately **45,000 customers** via **63 substations** and **2,520 miles** of distribution lines and about **800 miles** of transmission lines across nearly **11,000 square miles**

# PacifiCorp's WMP Progress



	Completed	Underway
Sit'l Aware	Weather stations installed (10)	Lightning data in final stages of procurement
	Extreme weather forecast method developed	
	Develop method to share weather data collected with local weather and fire teams	Developing method to share weather analysis with scientific community
Operating Practices	Staff additions	Staff additions
	-Line patrol	-Fire data scientist
	Fire risk tools; water trailers, pulaski, chain saw, shovels, 10 gal extinguishers, retrofitting portions of fleet with fire shielding on undercarriage	-Risk data scientist
	Fire prevention training as well as reclosing practices during fire risk periods, also modified work hours during periods of elevated fire risk	Developing probabilistic fuse coordination software
Inspect / Maintai	Two enhanced transmission inspection using IR/corona completed; one pre-fire season, second during summer heavy loading conditions; one California condition found and corrected as of week of August 12, 2019	Evaluating radio frequency (RF) and LiDAR imaging for improving inspection and vegetation programs
	Begin additional detail device inspections, including downloading operational data	Enhance outage-initiated inspection within Tier 3
Asset Hardening	Pole replacement prioritization criteria developed	LiDAR pilot for strength modeling underway
	Historically butt clad and treat with fire proofing spray in targeted Tier 3 areas	10.8 miles of aerial cable is in design and will be constructed in advance of next fire season
	Detailed relay/recloser replacement plan and key delivery dates (largely completed fall/winter 2019 & spring/summer 2020)	25 modern reclosers with alternate settings being installed beginning this month
	Standard for composite and steel poles in place and able to be utilized as dictated by prioritization process	10 modern substation relays designed; construction beginning next month
	Standard for non-expulsion fusing installation developed & being used on all new construction	13 transmission line relays on 8 transmission lines designed; construction starting next month
		Fiber reinforced polymer (FRP) emergency stock quantities and combinations have been developed for use during pole replacements and post fires
Veg Mgmt	Tier 2 clearance deadline (6/30/2019) met (Tier 3 completed 9/1/2018)	Incorporating additional overhang removal into work plans during vegetation cycle work
	Conduct pre-fire season patrol evaluating for proper vegetation and conductor clearances	
	Fuel removal completed in limited areas	Began implementation of annual vegetation inspection for off-cycle facilities within HFTD
	Develop criteria for targeting higher risk tree removal during vegetation cycle work	Began implementation of additional risk tree removal in HFTD
Alt Tech		Leveraging asset health framework which includes HFTD, in addition to a variety of other factors, to prioritize asset replacement
		Piloting technologies including RF, LiDAR, drones and (in Oregon) use of HD cameras in collaboration with response personnel

# Situational Awareness: Weather

## SHORT TERM FORECAST

TODAY	KBDI	FFW6	6HrMax Spd	Wind Gust	Wind Dir	Max Temp	Min RH	Synopsis:
Happy Camp	749	10	5	12	W	75	27%	A large trough across the West Coast will bring below average temperatures but only a slight chance of afternoon showers. Winds will be breezy at times for exposed areas around Weed & Mt Shasta City.
Weed	642	15	9	18	NW	69	29%	
Mt. Shasta	679	15	9	18	SE-SW	68	31%	
Dunsmuir	717	12	6	15	SW	73	27%	
Snowbrush	635	10	5	12	S-SE	65	30%	

TONIGHT	Wind Spd	Wind Gust	Wind Dir	Min Temp	Min RH	Synopsis:		
Happy Camp	--	--	1	4	Var	47-53	55%	Cool with light winds.
Mt. Shasta Area	--	--	2	5	NE-N	45-51	50%	

Tuesday	KBDI	FFW6	Wind Spd	Wind Gust	Wind Dir	Max Temp	Min RH	Synopsis:
Happy Camp	750	9	6	14	W-NW	74	30%	The trough will migrate more to the east Tuesday but keep cool temperatures around and the risk of some showers.
Weed	644	16	10	20	NW	68	30%	
Mt. Shasta	681	15	10	20	NW-SW	67	32%	
Dunsmuir	718	10	6	14	SW	72	28%	
Snowbrush	637	9	6	14	SW-SE	63	34%	

Tuesday Night	Wind Spd	Wind Gust	Wind Dir	Min Temp	Min RH	Synopsis:		
Happy Camp	--	--	1	4	Var	47-53	55%	Cool & dry with light winds
Mt. Shasta Area	--	--	2	5	N	45-51	50%	

Wednesday	KBDI	FFW6	Wind Spd	Wind Gust	Wind Dir	Max Temp	Min RH
Happy Camp	750	11	5	12	W-NW	79	18%
Weed	644	18	9	18	NW-SW	74	21%
Mt. Shasta	681	15	9	18	W-NW	73	23%
Dunsmuir	718	12	5	12	SW	77	20%
Snowbrush	637	10	5	12	W-NW	68	25%

7 Day	Happy Camp		Weed		Mt. Shasta	
	KBDI	FFW6	KBDI	FFW6	KBDI	FFW6
TODAY	749	10	642	15	679	15
Tuesday	750	9	644	16	681	15
Wednesday	750	11	644	15	681	15
Thursday	751	11	646			
Friday	752	11	647			
Saturday	753	15	648			
Sunday	754	13	647			
AVG KBDI						



## PacifiCorp Weather Station Network Daily Meteorological Summary Sunday, September 8, 2019

	Temperature				Rain		RH	Dew Pt	Fire Indices		WIND			Fuels	
	Max °F	Time occur	Min °F	Time occur	Today in	Seasonal in	Min %	Avg °F	6HrMax FFWI	KBDI	Avg mph	Gust mph	Gust Dir	Max Temp	Avg Moisture
Dunsmuir	76.3	15:01	55.3	06:47	0.00	0.00	30	44.8	4	750	1.8	17.8	N	102.1	6.8
Lake Siskiyou	73.0	15:36	51.1	07:10	0.00	0.00	35	44.2	3	649	1.5	13.7	W	-	-
Snowbrush	67.7	15:36	43.0	07:18	0.00	0.00	33	41.4	4	633	1.9	14.4	WSW	94.4	8.6
Pollard Flat															
North Mt Shasta City	70.4	15:12	51.0	07:00	0.00	0.01	35	42.5	8	679	7.0	24.0	NW	-	-
SW Weed	72.7	15:26	46.3	00:55	0.00	0.05	34	43.7	3	641	1.5	10.9	NW	105.8	6.1
West Weed	71.0	17:06	49.2	00:58	0.00	0.16	33	44.8	3	641	1.0	8.8	N	-	-
North Weed	72.5	16:09	50.3	00:54	0.00	0.07	31	43.2	14	641	4.5	18.0	N	-	-
Seiad	78.8	15:18	57.6	01:02	0.00	0.00	30	49.5	3	749	0.9	11.1	S	103.5	6.7
Happy Camp	78.1	14:55	56.2	01:01	0.00	0.01	29	49.4	12	749	3.7	19.5	SW	-	-





# Community/Public Safety Partner Outreach

- Held public meetings with emergency response and customer groups to review WMP and its various elements; targeted up-to-date contact information and soliciting input
- Developed wildfire webpage at <https://www.pacificpower.net/outages-safety/wildfire-safety.html>
- Posted updates to regulators, resources for customers, coordinated websites with public safety partners, sharing weather information broadly

**Resources for customers; info, update contacts, communicate about special needs for PSPS**

**10 minute weather data**

**PSPS Candidate Areas Available to Customers**





# Successes and Challenges

## ➤ Successes

- Substantial planning, engineering and construction has begun and has provided benefits during this fire season and is expected to provide benefits in the future
- Field teams continue to strengthen in their operational responses to wildfire mitigation

## ➤ Challenges

- Resources are heavily leveraged
  - Supply chains for resources and materials have tightened, resulting in constraints and impacting the cost of WMP implementation
  - Internal teams, engineering and construction resources and materials are being maximized
  - Other organizations are challenged by our timeframes



# Summary

- PacifiCorp appreciates the focus and guidance provided by legislators, regulators and other policy setters to address this important issue
- PacifiCorp recognizes it's at the beginning of a long journey but believes substantial progress has already been achieved
- PacifiCorp believes efforts it and others have made to make wildfire mitigation a top priority are making a difference for the better