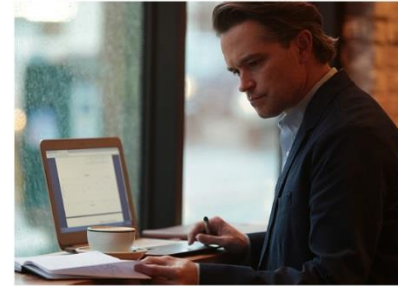


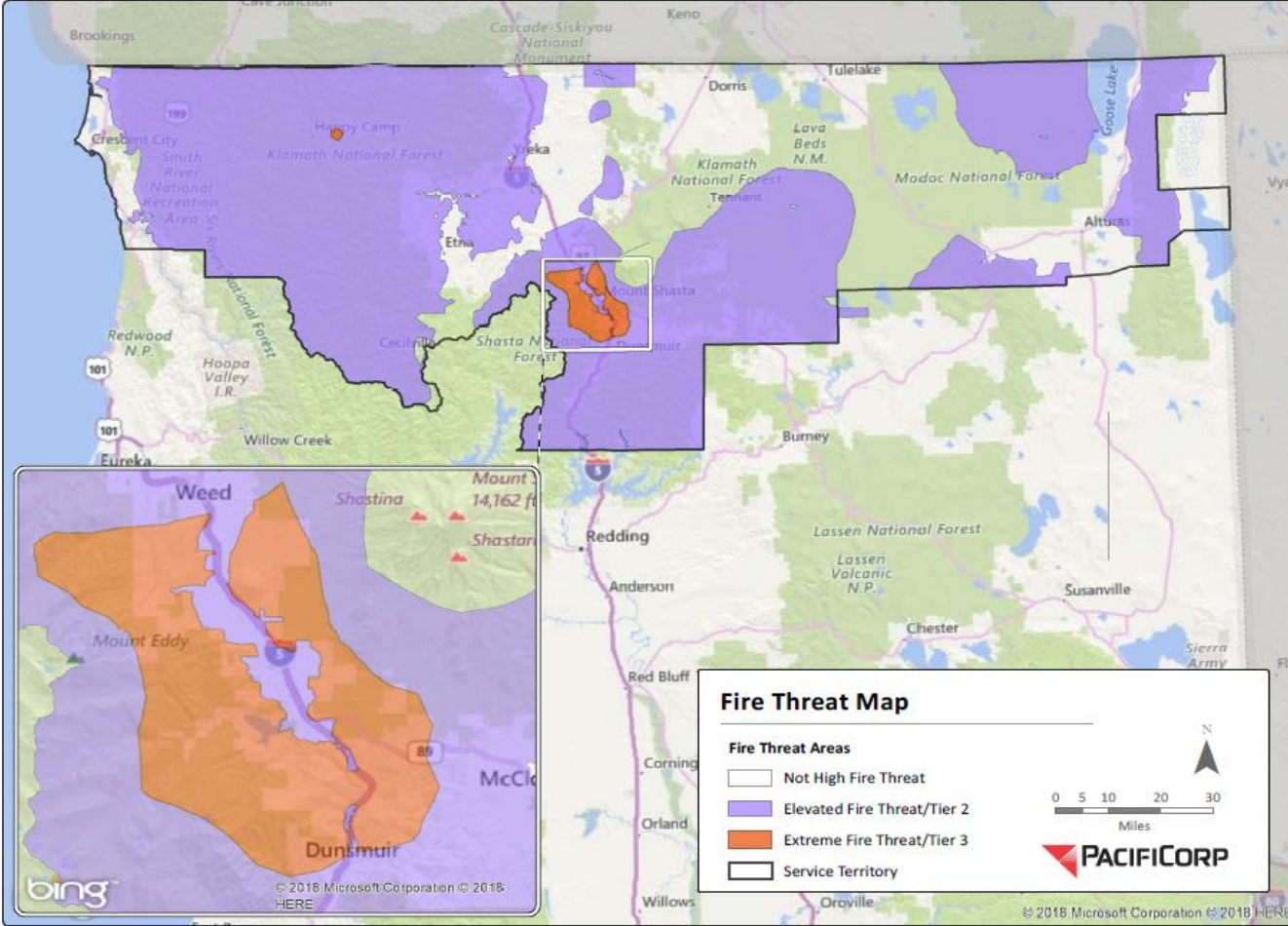
# PacifiCorp 2020 PSPS Performance

March 29, 2021

Joint Investor-Owned Utilities 2020 PSPS Workshop



# PacifiCorp's California Service Territory



## General Stats

PacifiCorp provides electricity to approximately **45,000 customers** via **63 substations**, **2,520 miles** of distribution lines, and about **800 miles** of transmission lines across nearly **11,000 square miles** of which just under half is classified as **HFTD**

## HFTD Stats

Approximately **1,200 miles** or **36%** of all overhead lines are located within the HFTD

**850 miles** of overhead distribution lines in the HFTD;

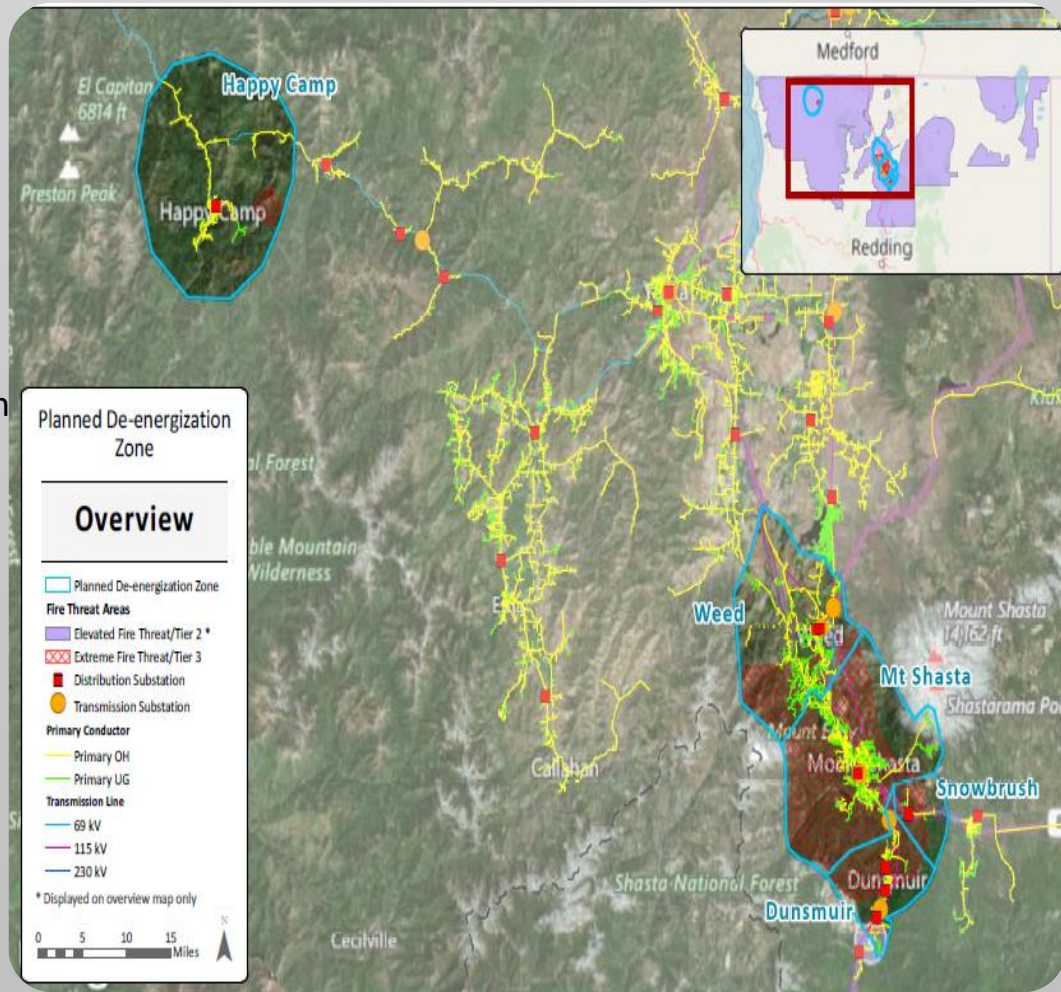
**350 miles** of transmission lines in the HFTD



# Public Safety Power Shutoff Overview

PacifiCorp's plan for proactive de-energization is currently limited to Tier 3 areas

Breaking the two main areas into five PSPS Areas was done to minimize customer impact where appropriate, based on weather monitoring capability and circuit topology.



	PSPS Name	Substation	# of Circuits	Customers	Distribution OH	Distribution UG
1	Happy Camp	Seiad, Happy Camp	3	865	48.4	5.9
2	Weed	Weed, International Paper	5	2,589	90.5	62.1
3	Mt. Shasta	Mt. Shasta	6	5,074	86.4	76.7
4	Dunsmuir	N & S Dunsmuir, Nutglade	5	1,806	30.0	8.6
5	Snowbrush	Snowbrush	1	17	4.2	1.2
	<b>Total</b>	<b>9 Substations</b>	<b>20</b>	<b>10,351</b>	<b>259.5</b>	<b>154.5</b>

## PSPS – Watch Event

KBDI Mainly: KBDI  $\geq$  622  
 KBDI & VPD: KBDI  $\geq$  575 & Localized VPD  $>$  94<sup>th</sup>  
 VPD Mainly: Localized VPD  $\geq$  97<sup>th</sup> & KBDI  $\geq$  480  
 FFWI6  $\geq$  30 and  
 Wind gusts  $\geq$  25 mph OR  
 Sustained wind  $\geq$  16

## PSPS – EOC Activation

KBDI & VPD: KBDI  $\geq$  650 & Localized VPD  $>$  94<sup>th</sup>  
 FFWI6  $\geq$  30 and  
 Wind gusts  $\geq$  31 mph

# PSPS is Used as a Measure of Last Resort

Protocols ensure PSPS is a measure of last resort to minimize frequency and impact

- Customers notified based on forecasts
- De-energized on real time conditions
- Circuit segmentation created for Tier 3 circuits
- Pre-event review of current system conditions and vegetation work plans

Additional pre-event actions include:

- Engagement of critical customers
- Engagement with local emergency responders

Date	Location	Total Customers Notified	Total Customers De-energized	Medical Customer De-energized	Counties De-energized	Total Tribes De-energized
9/13/2020	Weed	2,559	2,559	6	1	0
9/17/2020	Weed	Original – 2,500 Revised - 600	0	0	0	0
10/25/2020	Happy Camp	848	0	0	0	0

\* 9/17 & 10/25 – Watch Events no de-energization

## September 13 Event

- Duration 7 hours & 49 minutes (10:01 a.m. until 17:50 p.m.)
- Field inspections and patrols instituted in the affected area, recording wind observations, submitting weather observations, videos, and pictures of the current conditions
- Final inspection of the de-energized circuits performed in sections prior to re-energization
- The company did not identify any equipment that was damaged during the September 13 event
- Event affected two distribution circuits (5G83, 5G45)

# Circuit 5G83

- Total Customers – 1,976
- Residential – 1,693
- Commercial/ Industrial – 263
- Medically Sensitive – 3
- Other - 17

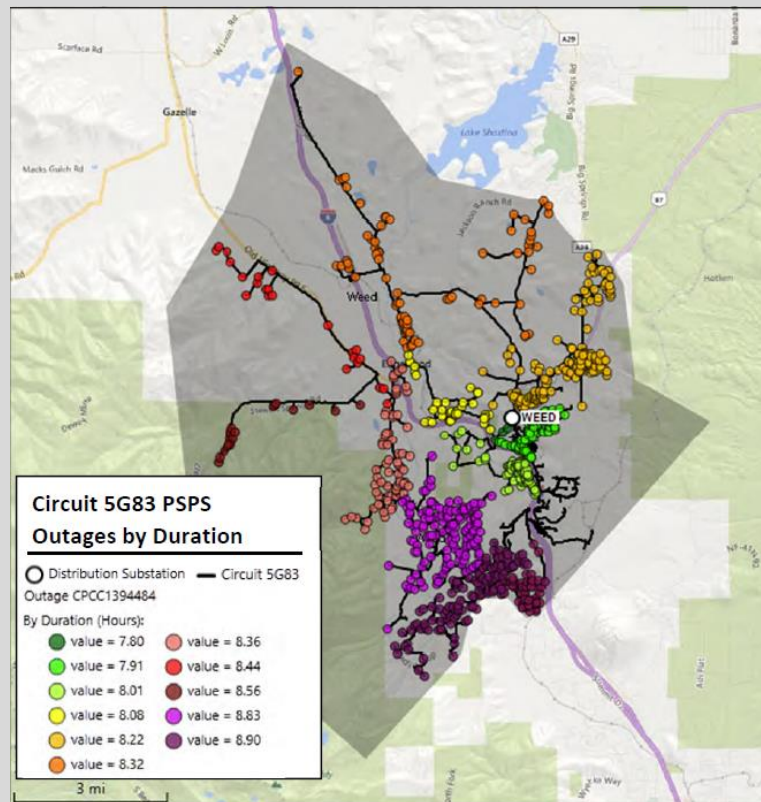


Figure 2. Circuit 5G83 PSPS transformer outages by duration.

# Circuit 5G45

- Total Customers – 581
- Residential – 444
- Commercial/ Industrial – 135
- Medically Sensitive – 2
- Other - 0

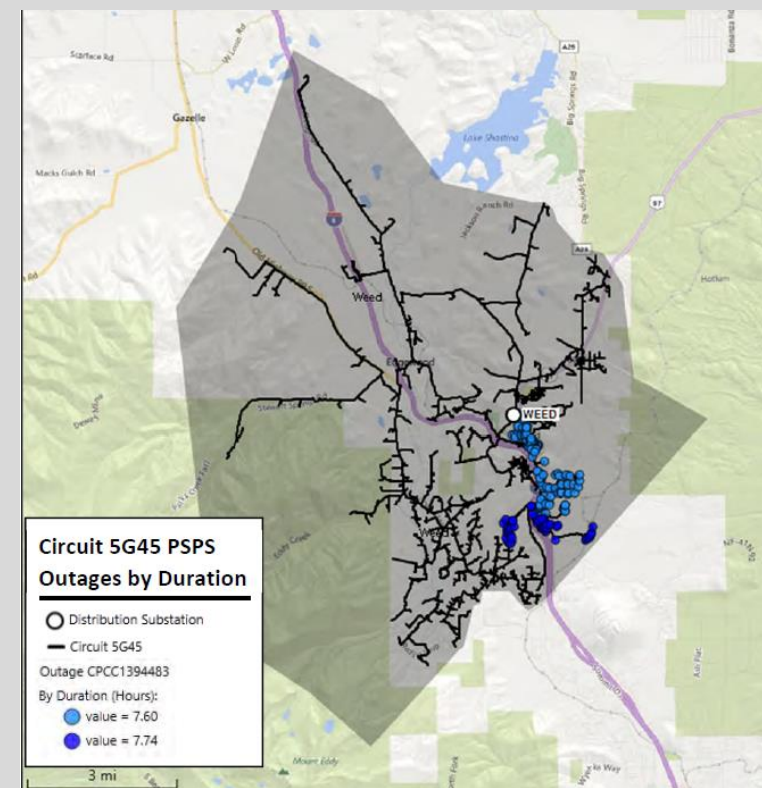


Figure 1. Circuit 5G45 PSPS transformer outages by duration.

# 2020 Lessons Learned

- PacifiCorp is continuing to improve its notification and documentation of events to increase communication between various departments involved in PSPS events
- Access to GIS data through shape files will be made available during notifications to public safety partners and provide such files upon request
- Improving company website to include weather forecast data to improve transparency on a PSPS potential event

## Check if you're in a Public Safety Power Shutoff area

The outlined areas on the map represent potential Public Safety Power Shutoff areas. Enter your address below to see if you are located within one.\* You can click on an area of the map to see the zone name that corresponds to the table below.

Search Map

Status

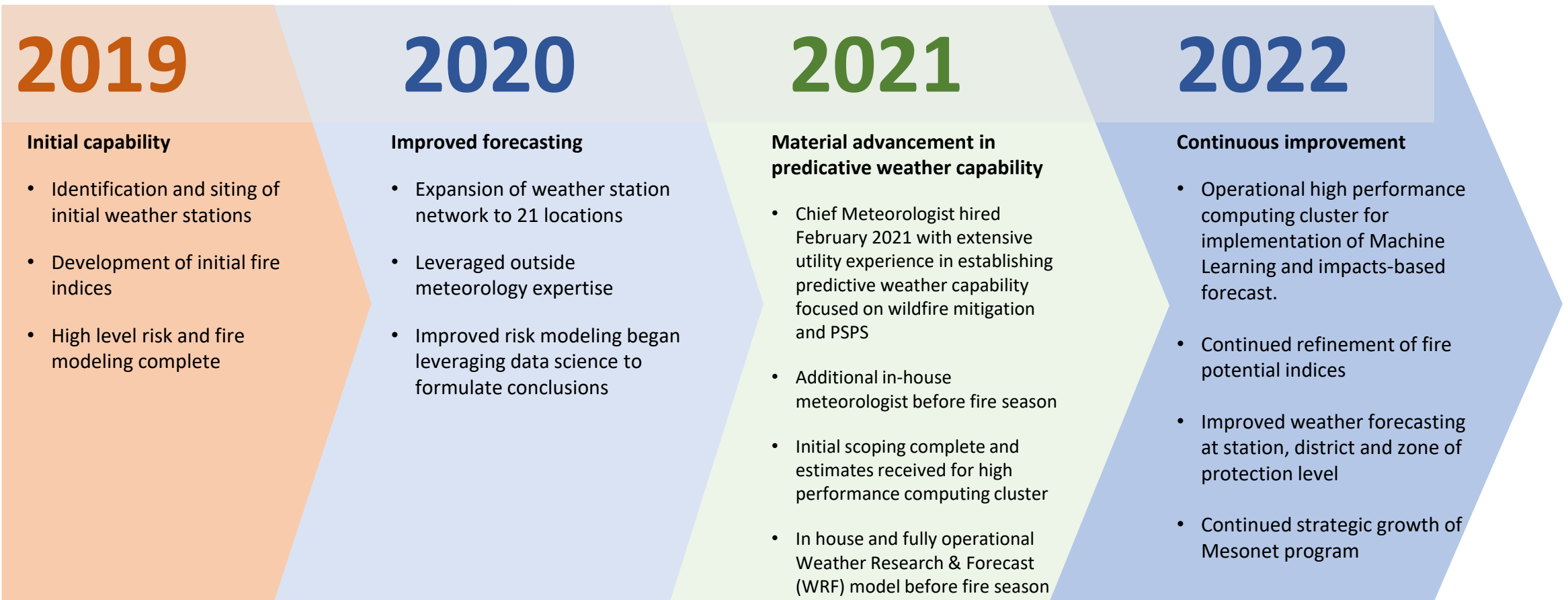
- Normal
- Watch
- Event

Map Satellite

Map data ©2021 Google Terms of Use Report a map error

# Public Safety Power Shutoff Improvements

*PacifiCorp is committed to further improve its predicative weather and PSPS forecasting capability*



# Stakeholder Engagement and further improvements in Emergency Management

- Continued improvement in stakeholder coordination
- Emergency Management Director hired March 2021
- Responsible for overall strategy to improve training, communication and response to PSPS event coordination
- Further expansion of Emergency Management Team in 2021 to provide additional community outreach and 24/7 monitoring
- Identify communities beyond Tier 2 and Tier 3 for wildfire preparedness workshops





# Customer Impact Reduction & Community Resiliency Programs

Pacific Power’s Community Resiliency Program includes a portfolio of resources for communities seeking to enhance their emergency management and disaster preparedness capabilities. These resources include:

- **Technical assessments** to evaluate the potential costs and benefits of adding energy storage and associated technologies to critical facilities
  - Applications are currently being accepted.
  - Assessments are initiated on a first come, first served basis
- Grants are available for the purchase of portable **renewable backup generators** and the **installation of energy storage at critical facilities**
  - Grant requests will be accepted July - November 2021
  - Approximately \$400,000 of available funding in 2021
  - Funding requests are competitively evaluated
  - Working with local emergency managers throughout our service territory to identify potential projects.

Zone	Low Income	Life Support	Medical	AFN*	Medical Baseline
NON-PDZ	9,546	30	30	71	77
PDZ	2,671	2	1	23	16
<b>TOTAL</b>	<b>12,217</b>	<b>32</b>	<b>31</b>	<b>94</b>	<b>93</b>

All Customers in PDZ	
All customers in CA PDZ:	10,289
Critical Customers in CA PDZs:	210

\*AFN include customers self certified as needing additional notification. All Life Support, Medical, and Medical Baseline Customers are contacted individually prior to a PSPS.



# Continued WMP Focus

Customer preparedness	Situational Awareness	Asset Inspections	Grid Hardening
<ul style="list-style-type: none"> <li>✓ Customer Communication regarding wildfire mitigation and preparedness education</li> <li>✓ Website customer engagement tools; such as PSPS map and weather forecast summary</li> <li>✓ Updating of customer contact preference information</li> <li>✓ Communication on process of self-identifying as an AFN customer</li> </ul>	<ul style="list-style-type: none"> <li>✓ Mesonet network expansion               <ul style="list-style-type: none"> <li>• Total Program Target: 46 weather stations</li> </ul> </li> <li>✓ Further improve risk assessment and mapping</li> <li>✓ Improved in house weather modeling</li> </ul>	<ul style="list-style-type: none"> <li>✓ Complete Tier 2/3 Inspections prior to Fire Season</li> <li>✓ Identify fire threat conditions and accelerate correction</li> <li>✓ Refreshed focus on QA/QC of Inspections:               <ul style="list-style-type: none"> <li>• Incorporate fire risk identification into annual inspector training</li> <li>• Prioritization of higher risk (Tier 2/3) locations first</li> <li>• Complete desktop review on 50% of planned detail/intrusive inspections (~6,500)</li> <li>• Field audit at least 5% (680) of planned detailed inspections</li> </ul> </li> <li>✓ Infrared Inspections Planned on Approximately 700 line-miles of overhead transmission in 2021</li> <li>✓ Continuation of vegetation inspection pilot program</li> </ul>	<ul style="list-style-type: none"> <li>✓ Installation of covered conductor               <ul style="list-style-type: none"> <li>• Total Program Target: 221 line-miles</li> <li>• 2021 Program Target: 85.2 line-miles</li> </ul> </li> <li>✓ Replacement or reinforcement of wood poles               <ul style="list-style-type: none"> <li>• Total Program Target: 4,326 poles</li> <li>• 2021 Program Target: 128 poles</li> </ul> </li> <li>✓ Installation of System Automation Equipment               <ul style="list-style-type: none"> <li>• 2021 Target – 27 devices</li> <li>• Program Target – 68 devices</li> </ul> </li> <li>✓ Replacement of small diameter conductor beginning in 2022               <ul style="list-style-type: none"> <li>• Total Program Targets: 53 line-miles (begins in 2022)</li> <li>• 2021 Program Target: 0 line-miles (begins in 2022)</li> </ul> </li> </ul>

Thank you

