

Power Association of Northern California

Annual Spring Seminar – Wildfire: Risks and response

Jennifer Davidson

SMUD Chief Financial Officer

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Current approach isn't working

- 2018 California wildfires: \$12.4 billion in insured losses and growing
- 2018 California wildfires could cost the state \$400 billion in economic loss

Deadliest wildfires in California recorded history over the last 13 months

- #1 **Camp Fire** (Butte): 88 deaths (November 2018)
- #4 **Tubbs Fire** (Napa/Sonoma): 22 deaths (October 2017)
- #11 **Redwood Valley Fire** (Mendocino): 9 deaths (October 2017)
- #14 **Carr Fire** (Shasta/Tehama/Trinity): 7 deaths (July 2018)
- #15 **Atlas Fire** (Napa/Solano): 6 deaths (October 2017)

Source: [CALFIRE](#) plus Camp Fire [incident update](#) (as of 11/24/18)

Most destructive wildfires in California recorded history over the last 13 months

- #1 **Camp Fire**: 18,804 structures destroyed
- #2 **Tubbs Fire**: 5,636 structures destroyed
- #7 **Carr Fire**: 1,604 structures destroyed
- #8 **Woosley Fire** (Los Angeles/Ventura): 1,500 structures destroyed (November 2018)
- #9 **Nuns Fire** (Sonoma): 1,353 structures destroyed (October 2017)
- #10 **Thomas Fire** (Ventura/Santa Barbara): 1,063 structures destroyed (December 2017)
- #14 **Atlas Fire** : 783 structures destroyed
- #20 **Redwood Valley Fire** (Mendocino): 546 structures destroyed (October 2017)

Source: [CALFIRE](#) plus Camp Fire [incident update](#) (as of 11/24/18)

<https://www.mercurynews.com/2019/01/28/california-wildfires-12-4-billion-in-insured-losses-and-growing/>

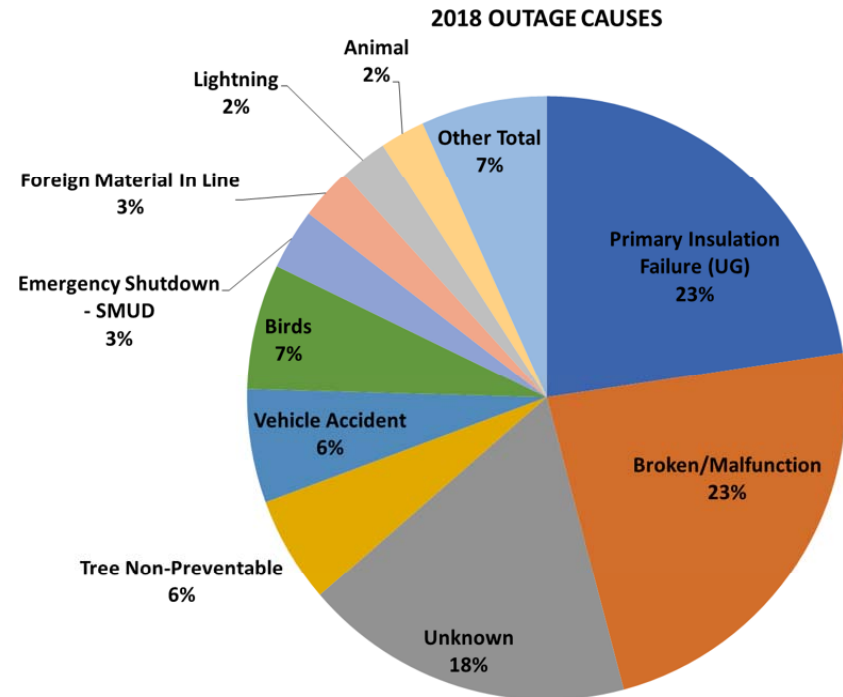
<https://www.accuweather.com/en/weather-news/accuweather-predicts-2018-wildfires-will-cost-california-total-economic-losses-of-400-billion/70006691>



Wildfire ignition

1 in 10 wildfires is related to utility infrastructure

- Objects contacting lines
 - Vegetation
 - Animals
 - Foreign materials (mylar balloons etc.)
- Power lines slapping together
- Equipment failure
 - Poles and attachments
 - Connections
- Downed power lines



SMUD's 2018 Outage Report

Environmental impact

“The 2018 wildfire season in California is estimated to have released emissions equivalent to roughly 68 million tons of carbon dioxide. This number equates to about 15% of all California emissions, and it is on par with the annual emissions produced by generating enough electricity to power the entire state for a year.”

U.S. Secretary of the Interior Ryan Zinke, based on data analyzed by the U.S. Geological Survey

Network of sensors around the world showed California had worse air during the wildfires than traditional smog hotspots in China and India.



<https://www.cnn.com/2018/11/16/health/san-francisco-wildfires-air-quality-worst-in-world/index.html>



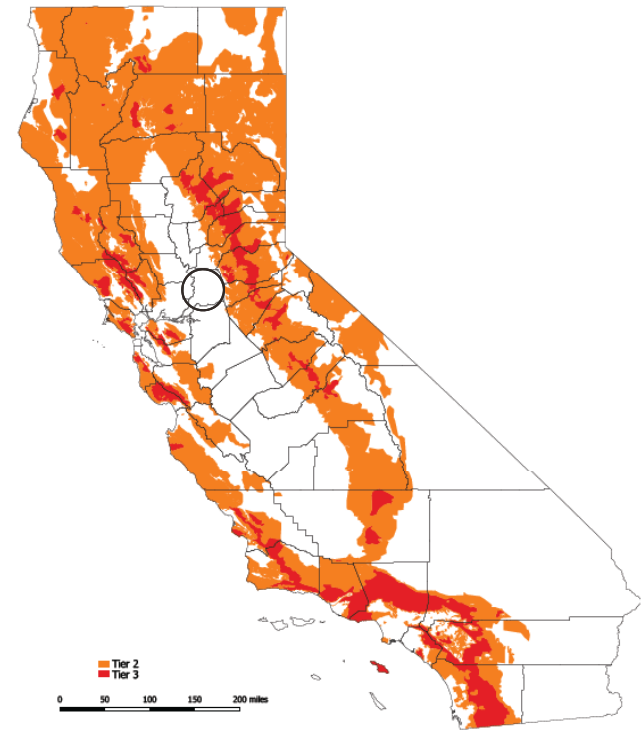
Wildfire risk impacts all California utilities, regardless of ownership structure or terrain

SMUD and Footprint

- No service territory in CPUC Tier 2 or Tier 3
- Transmission lines – slightly less than half in tier 2 & 3

Financial Risk to SMUD

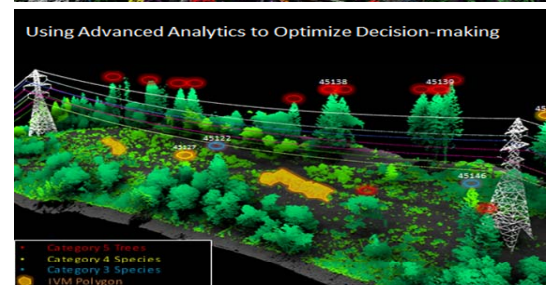
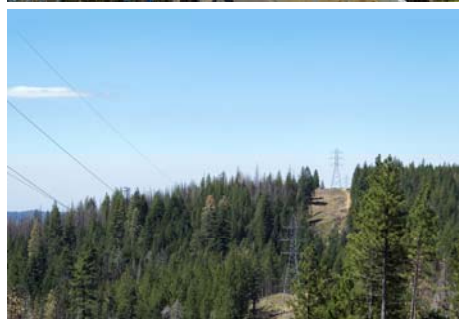
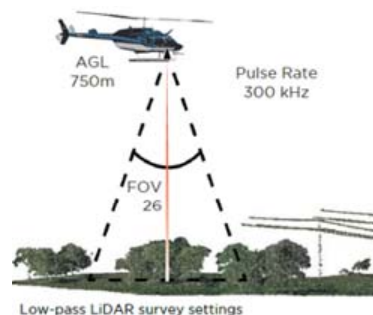
- Rates increase 1.5 - 2% due to wildfire mitigation efforts, including 0.5% due to 4-fold increase in insurance premiums
- Put on “negative outlook” by Moody’s even though we’ve never had a catastrophic wildfire (currently are AA by S&P and Fitch)
- Difference between A and AA costs SMUD \$300K annually for every \$100M borrowed, plus loss of liquidity due to increased collateralization requirements



SMUD investment in wildfire mitigation

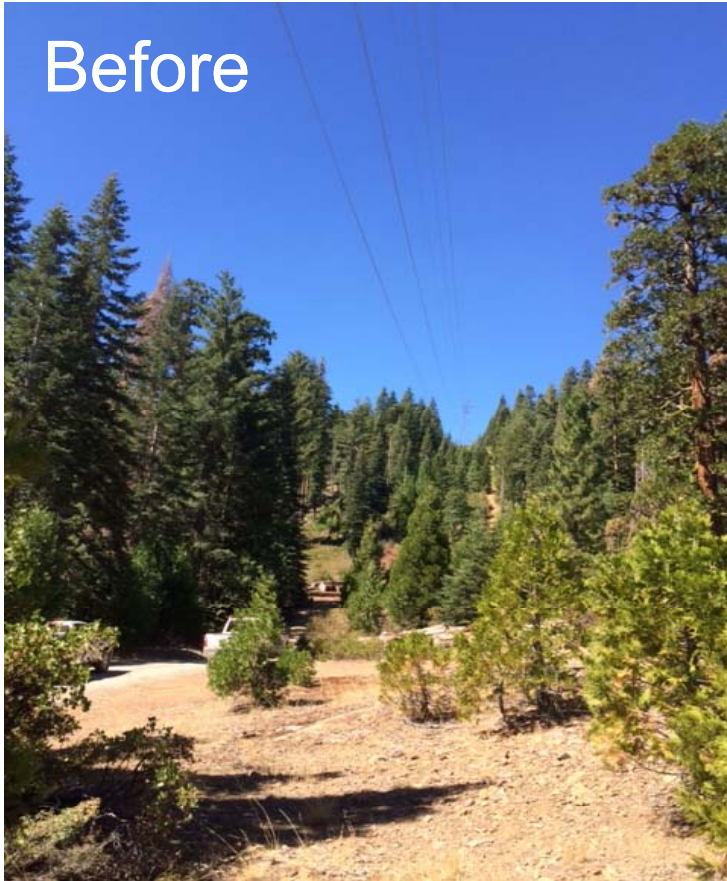
Key efforts

- Increased vegetation management, inspection and maintenance programs of equipment, weather monitoring
- Enhanced customer communication tools and processes
- LiDAR and other advanced technologies and protocols for deactivating reclosers and de-energizing power lines to limit the impact of weather events
- Installing weather stations for increased situational awareness
- Continued coordination and collaboration with local agencies, first responders and vulnerable populations
- Prepared a draft Wildfire Mitigation Plan



Loon Lake to Union Valley (2016)

Before



After



Investment to support Integrated Resources Plan

Aggressive carbon reduction goals: net-zero by 2040

- Requires a \$6.7 billion investment
- Electrification of building and transportation sectors
- Continuing investments in energy efficiency, demand response, renewable energy, grid modernization and the enabling technology



Wildfires are a California Problem

This is a California Problem, that will require a multi-pronged approach

- Utilities
- Fault Based Standard for liability
- Dedicated wildfire fund
- State Backing and Supporting
- Rating Agencies
- Homeowners – maintenance and home insurance
- Insurers

If solutions are not found, will have long lasting financial, environmental and human impacts

Solutions require all Californians