Wildfire safety & protection

Our plan to enhance public safety, improve grid reliability and explore new technologies to help reduce overall wildfire risk.

Powering forward.
Together.

SMUD®

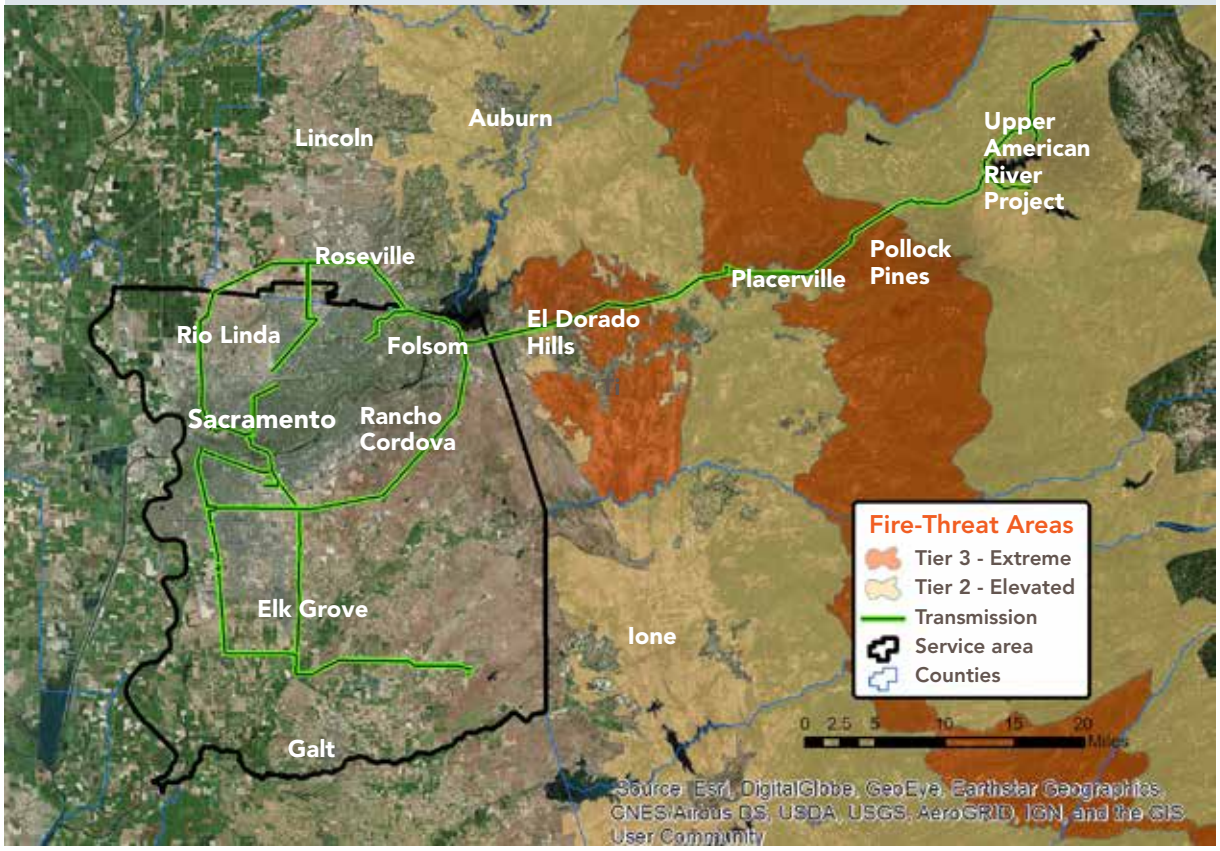
Safety is our top priority

We recognize the devastating impacts of wildfires and have prioritized the safety of our customers, community and employees by making every effort to construct, maintain and operate our electrical lines and equipment to minimize potential wildfire risk.

Fire Risk

We operate and maintain approximately 3,900 circuit miles of overhead distribution lines and 470 circuit miles of overhead transmission lines throughout our service area and the Upper American River Project (UARP).

In partnership with utility staff and local fire and government officials, we've identified areas of elevated or extreme fire risk through the development of the California Public Utilities Commission (CPUC) High FireThreat Map below.



Line Inspection

We regularly perform a range of inspections on our transmission and distribution facilities, including:

- **Helicopter aerial inspections**
  Line inspectors check the condition of line structures and attachments, looking for any structural problems and safety hazards, damage to equipment and wires, signs of hot spots and vegetation growth.

- **Ground patrols**
  Line inspectors use a combination of walking and driving to visit transmission towers to make detailed visual inspections. Binoculars are used to detect any damage to above ground lines and equipment.

- **Infrared inspections**
  An infrared camera is used to identify "hot spots" that could be an indication of loose connections that may fail. Images and written reports document and identify any abnormal conditions which are noted for further investigation and scheduled for repair.

- **Wood pole intrusive inspections**
  Sample material is taken from wood poles for analysis to identify any problems such as rot and decay.

- **Detailed line inspections**
  Line inspectors use a combination of walking and driving to visit each SMUD pole to make detailed visual inspections. Similar inspections are performed on pad-mounted equipment and equipment installed below grade in vaults or building basements.

- **Annual line patrols**
  Line patrol staff look for obvious signs of defects, structural damages, broken hardware, sagging lines and vegetation clearance issues. Any anomalies found are addressed based on severity of the defect. Line patrolmen track their progress with a GIS-enabled visualization tool to ensure that all devices within our service area are patrolled.

Vegetation Management

Vegetation management crews perform routine vegetation maintenance, like pruning and removal, on time-based intervals through ground-based field patrols.

Since 2017 we've completed annual LiDAR inspections that use remote sensing technologies to measure vegetation clearance distances by aerial imaging. The image results identify tree health and hazards that may not yet be visible to the naked eye.

The results of both ground and aerial inspections are used to identify and target areas for vegetation pruning or removal.

Contracted tree crews complete the identified annual vegetation work (pruning & removal) needed to ensure public safety and electric reliability as well as reduce wildfire risk in our service area.

Fire mitigation

We actively forecast and plan for upcoming work several years in advance to allow adequate levels of staffing and funding for needed projects. We also look for ways to constantly improve our programs to mitigate fire risk with various tools.

- **Envirotemp FR3 transformer fluid** is a natural ester derived from renewable vegetable oils that improves fire safety, transformer life/loadability and has environmental benefits. We began purchasing and installing transformers with FR3 fluid in 2004. All new and replacement distribution transformers contain FR3 fluid to minimize fire risk.

- We have **14 weather stations** within our service area and UARP, eight are in the Sacramento metropolitan area and six are in the UARP. Four of the new weather stations were installed in 2018 within the high fire-threat areas to help with real-time monitoring and to support any need to disconnect power in case of an emergency.

Public safety power shutoff, if necessary

The ever-increasing number, length and ferocity of wildfires has led utilities, including SMUD, to take unprecedented actions to further guard against utility infrastructure either starting or contributing to a wildfire. As a last resort SMUD may shut power off to either our transmission or distribution lines when fire conditions are considered extreme.

Although the risk is low, if we must shut power off when our load is extremely high, rotating outages could occur. Rotating outages would be a last resort and we would use every tool at our disposal, including air conditioning load management, commercial customer curtailment and buying power on the open market before we would call for this action.

Our Distribution System Operators (DSO) have the authority to turn power off to portions of the distribution grid during emergency conditions when requested by local police or fire officials.

During active fire season, our Power System Operators (PSO) are authorized to shut off power to portions or all of the Valley and UARP transmission lines when there is imminent fire danger, mandatory fire orders are in effect and/or the transmission system is experiencing extreme fire risk or other emergency conditions. The PSO will take a combination of many factors into consideration when implementing public safety power shutoff which include, but are not limited to, the following:

- Extreme fire danger threat levels, as classified by the National Fire Danger Rating System
- A Red Flag Warning declaration by the National Weather Service
- Low humidity levels
- Sustained high winds
- Site-specific conditions like temperature, terrain and local climate
- Critically dry vegetation that could serve as fuel for a wildfire
- On-the-ground, real-time observation from SMUD or other agency field staff

Emergency communications

In the event of a wildfire emergency we will communicate with customers and key stakeholders in advance whenever possible.

If extreme fire danger results in de-energization or planned rotating outages, we will provide communications to customers and key stakeholders, including government agencies and critical service providers to give as much notice as possible and minimize the impact on our customers and community.

Communication tactics

Proactive automated phone calls will be made to customers in impacted areas and/or neighborhoods advising when the outage is called and directing them to **smud.org/Outages** for up-to-date information.

A rotating outage map on **smud.org** will show which areas are impacted and which will be next in the rotation.

The Contact Center IVR (Interactive Voice Response) will have real-time recorded information informing customers that may be impacted before the rotating outages begin.

Restoration of service

Restoration after de-energization

SMUD work crews must take several important steps prior to restoring electrical service after a de-energization event.

1. **Patrol** – Crews will patrol the line to look for vegetation in lines and any obvious damage that may prevent the power from safely being turned back on.
2. **Repair** – If equipment damage is found during the patrol, additional crews will be dispatched with new materials to repair or replace equipment.
3. **Test** – Once the lines and poles are safe to operate, crews will test the infrastructure to turn the power back on.
4. **Restore** – Power will be restored and outage communication systems will notify customers.

Reconstruction after a wildfire

When infrastructure is damaged during a wildfire event, extensive work is required to plan and execute rebuilding. After local police and fire officials give the clearance, our crews can proceed with the assessment and rebuilding effort.

1. **Assess** – Our crews will patrol each line segment to determine the extent of damage.
2. **Plan** – Supervisors, managers, engineers and system operations will meet to plan and prioritize the needed work.
3. **Mobilize** – Crews and materials will be coordinated internally if possible. Mutual Aid and contractors may be used as needed to provide additional support.
4. **Rebuild** – Initial efforts will be to get the lines up and restore the damaged circuits to restore power as soon as possible.
5. **Restore** – Electric service will be restored to homes and businesses as soon as possible. Residential and business customers may have to perform repairs on their facilities and pass inspections by local agencies prior to having full electric service restored.

For more information visit **smud.org/WildfireSafety**.