



Utility Investment in Wildfire Mitigation Plans

PNNL-SA-211619

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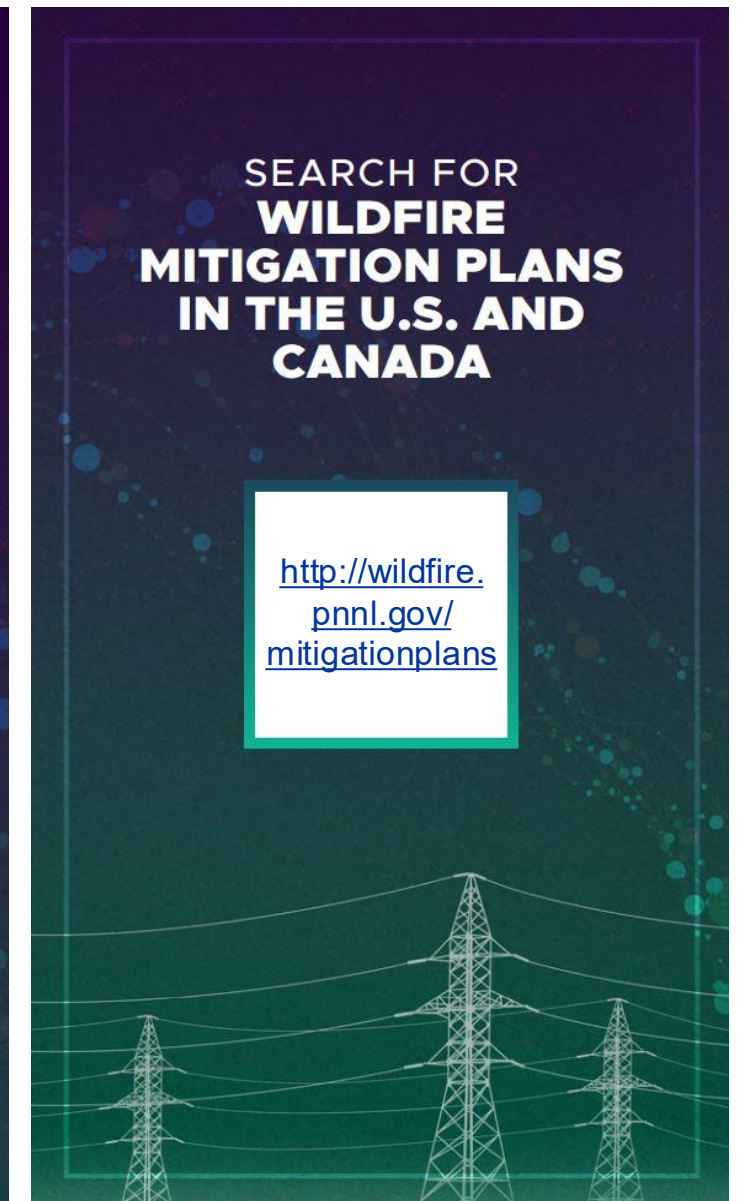
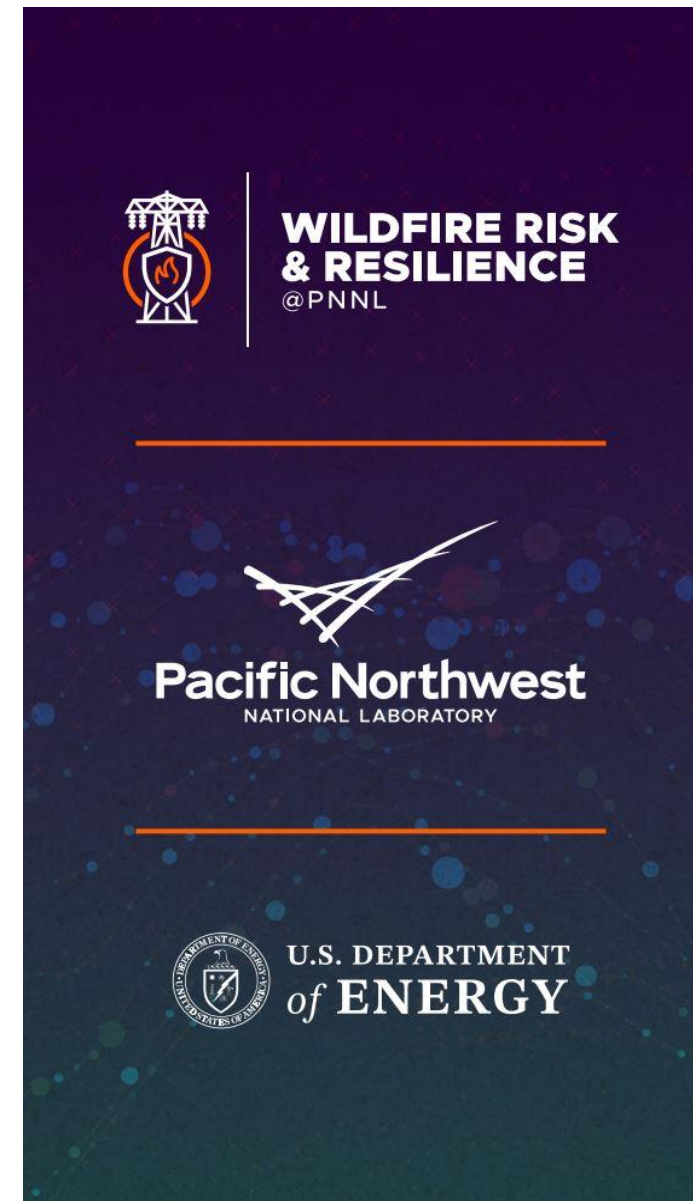
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Background

- Sponsored by the U.S. Department of Energy's Grid Deployment Office, PNNL created a database of all known and discrete utility Wildfire Mitigation Plans (WMPs) from across the United States and Canada.
- The goal is to provide a single consolidated location for access to all WMPs. Plans are organized by various metadata:
 - Location of the authoring utility or entity
 - Year or range of years of the plan implementation period
 - Type of utility or entity
- The database is a component of a larger research program to establish credible industry metrics to assess and mitigate wildfire risk.
- To help make sense of hundreds of WMPs and their contexts, PNNL produced a series of citable short decks, organized by technical topics.



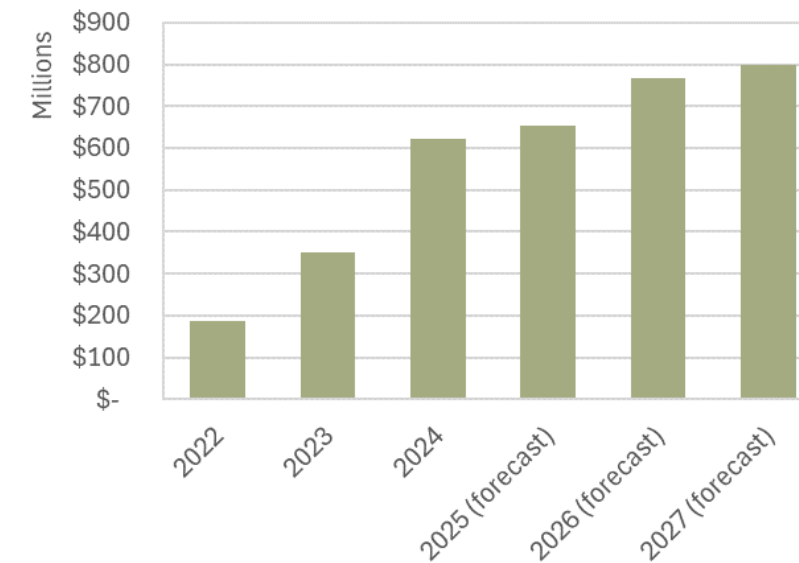
Common mitigation investments in a WMP

- **Grid Design and System Hardening:** Pole replacement and reinforcements, installation of automation equipment and covered conductor installations
- **Vegetation Management:** Inspection schedules, application of herbicides, pruning, tree removal procedures, and more advanced methods
- **Wildfire Condition Monitoring:** Situational awareness (aerial surveillance data) and forecasting modeling to predict wildfire conditions
- **Operational Response:** Tracking wildfires, immediate reactive de-energizing, new technologies
- **Public Safety Power Shutoff (PSPS):** Selective de-energization of power lines to avoid igniting wildfire

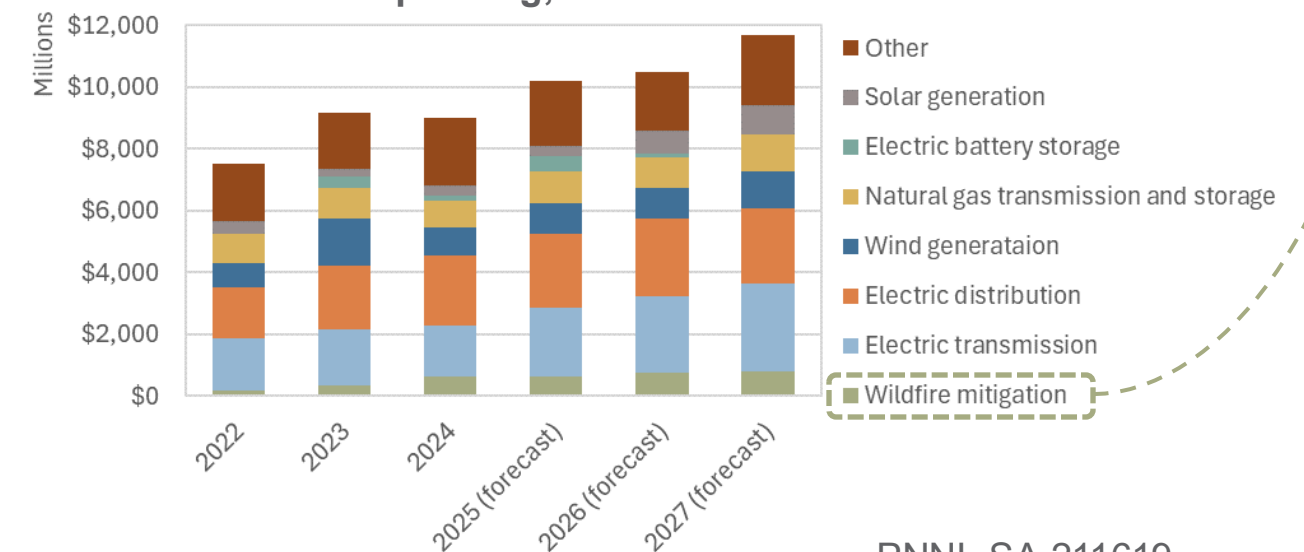
Wildfire mitigation spending can be significant and is generally increasing

- In California, PG&E's spending on wildfire mitigation is expected to increase at a compound annual growth rate of approximately 8% from 2020-2025, with spending in 2025 estimated to **exceed \$6 billion** ([PG&E 2025](#)).
- Berkshire Hathaway Energy (BHE), which operates utilities in multiple states, estimates that wildfire mitigation capital spending will increase from \$188 million in 2022 to \$797 million in 2027, a **cumulative annual growth rate of approximately 33%** ([Berkshire Hathaway Energy 2025](#)).
- Wildfire mitigation capital spending is a relatively small share of BHE's overall capital spending (2.5% in 2022), but is **the fastest growing category**, estimated to reach 6.8% in 2027 ([Berkshire Hathaway Energy 2025](#)).
- **Direct spending on wildfire mitigation currently is a small share of utility spending but is rapidly increasing.** Additionally, as emphasized throughout this report, direct spending represents only a fraction of the wildfire-related costs utilities must bear, which can include payments for third-party damages, insurance costs, and all other costs associated with capital cost increases and credit downgrades.

BHE total wildfire mitigation capital spending, 2022-2027

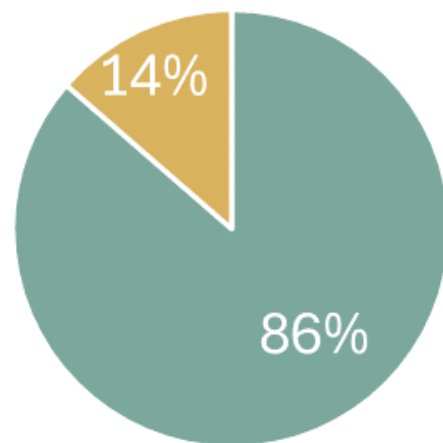


Wildfire mitigation as proportion of total BHE capital spending, 2022-2027

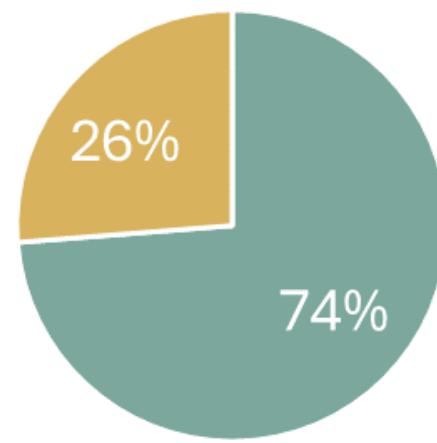


Capital spending makes up most of wildfire mitigation spending for many utilities

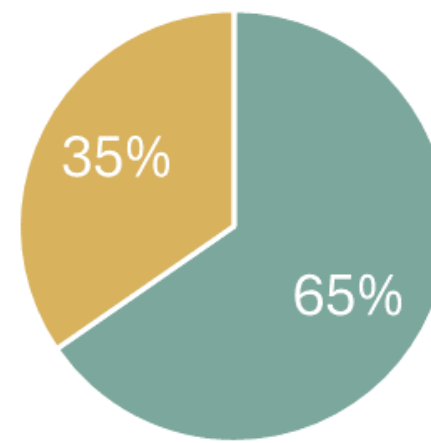
- Capital spending represents 55-86% of total wildfire mitigation spending across four utilities where the split between capital and operational spending was reported.
- For investor-owned utilities, prudently-incurred capital spending can become part of regulated rate base, meaning costs are recovered through ratepayers with a potential return on investment for the utility.



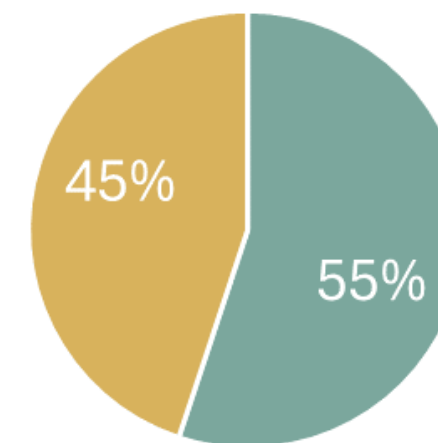
Xcel Energy
\$1.9 billion proposed wildfire mitigation spending 2025-2027 ([Xcel Energy 2025](#))



Rocky Mountain Power
\$64.8 million in wildfire mitigation spending 2024-2026 ([Rocky Mountain Power 2024](#))



Avista
\$52 million in wildfire mitigation spending 2024 ([Avista Corporation 2025](#))



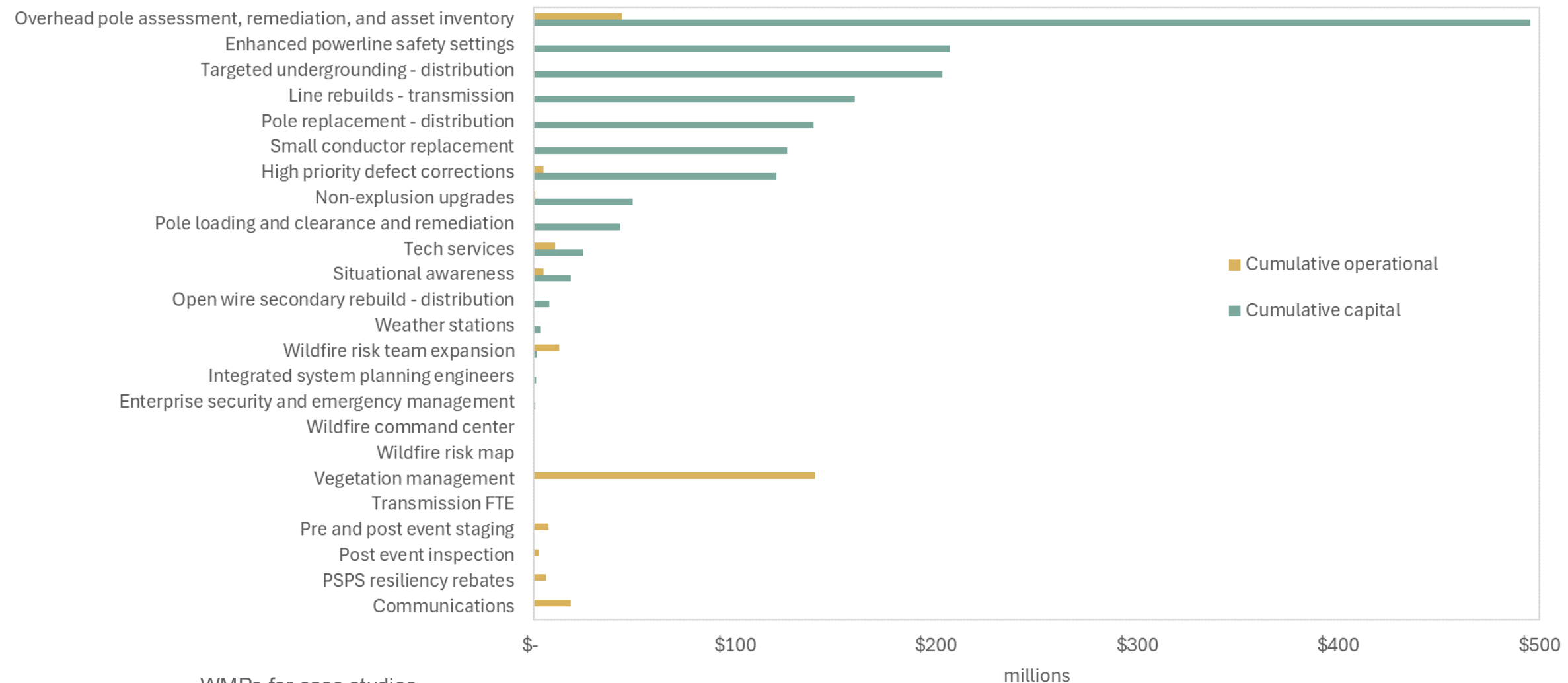
Portland General Electric
\$110 million - \$135 million in wildfire mitigation spending forecast for 2025 ([PGE 2025](#))

*graph shows average of reported ranges

Capital
Operational

Wildfire mitigation spending can take many forms

Xcel Energy's 2025-2027 proposed wildfire mitigation plan in Colorado identified 24 categories of operational and capital spending:



Total proposed spending for 2025-2027: \$1.9 billion

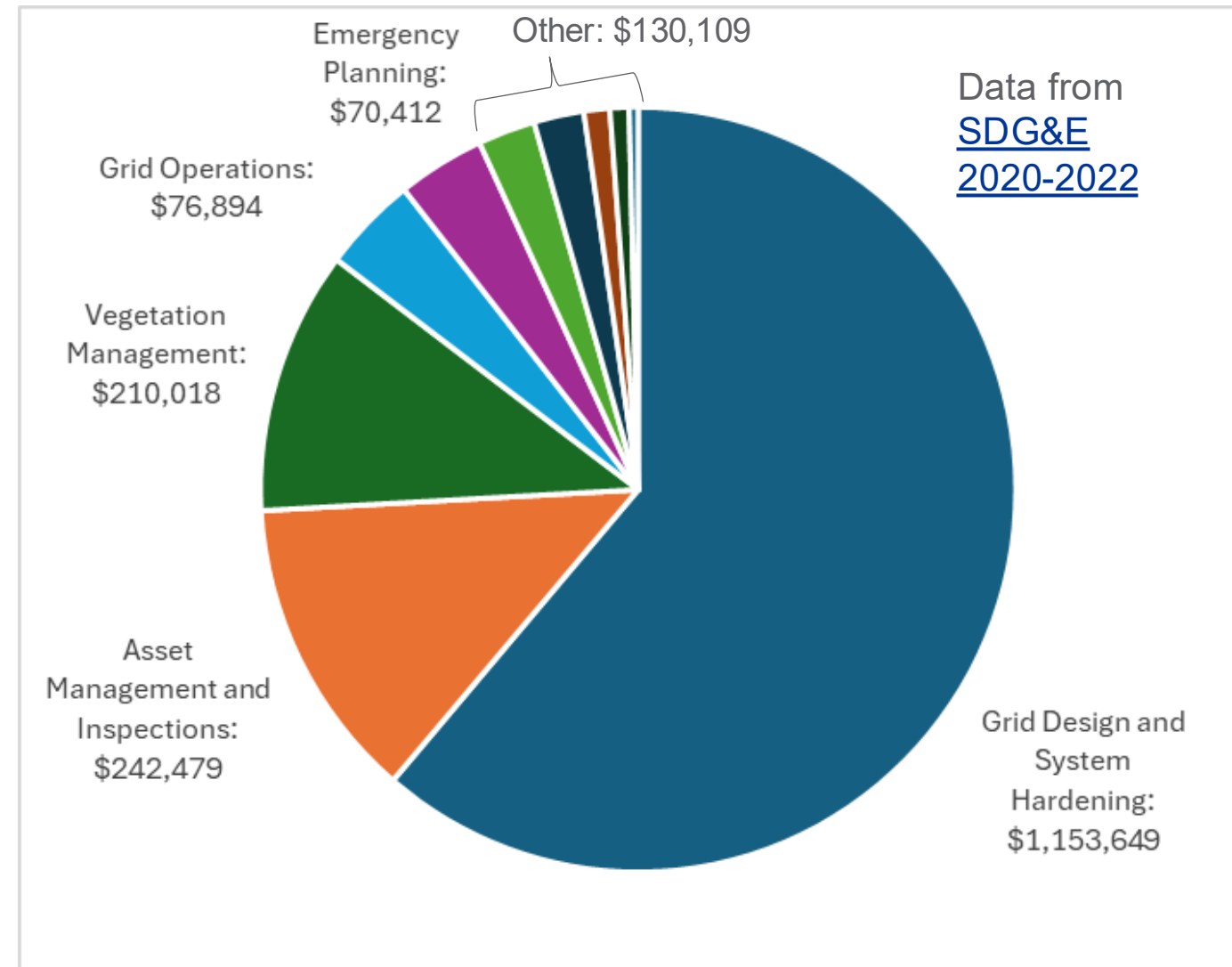
Data from [Xcel Energy 2024](#)

WMPs for case studies chosen for the availability of data.

San Diego Gas & Electric 2020-2022 Wildfire Mitigation Expenditures (in thousands of USD)

Vegetation Management includes tree trimming, pole brushing, and LiDAR inspections. Costs range from \$50,000 to \$400,000 per mile depending on the terrain and location of the line.

Asset Management & Inspections includes drone inspection, patrols, analysis, and GIS integration.



Grid Design and System Hardening Cost Per Mile Breakdown:

Alternatives Cost Comparison	Cost Per Mile
Strategic Undergrounding	\$2,660,460
Covered Conductor	\$1,211,000
Traditional Hardening	\$1,050,000

Because undergrounding is more expensive than other system hardening techniques, it is reserved for circuits in High Fire Threat Districts as well as in areas where undergrounding can substantially reduce PSPS events, as undergrounded lines are considered to have no ignition risk.

WMPs for case studies chosen for the availability of data.

Citation, Contacts, and Project Links

Please cite this slide deck as:

Barlow J.T., D.W. Powell, J.B. Kincaid, K.G. Abernethy-Cannella, and D.S. Boff. "Utility wildfire industry trends review." Pacific Northwest National Laboratory, 2025. PNNL-SA-211619.

For more information,
contact wildfire@pnnl.gov

All WMPs used in this analysis can be found at:

<https://wildfire.pnnl.gov/mitigationPlans>

Thank you