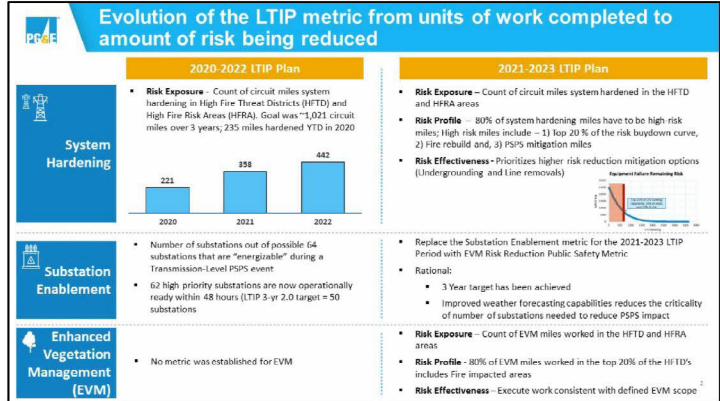


**Public Safety
Long Term Incentive Plan (LTIP)
Target Setting**

November 15, 2020





Risk Model and Risk Quantification

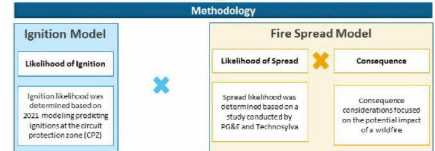
J. Smith

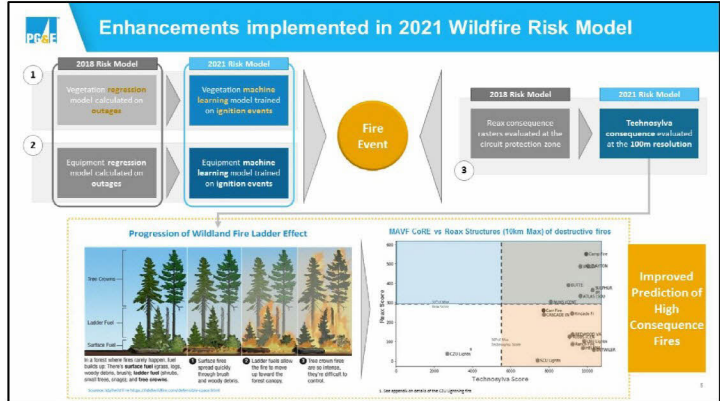
Wildfire Risk Models calculates risk units in CPUC framework

- | | |
|---|--|
| <p>LoRE</p> <ul style="list-style-type: none"> The likelihood of a risk event (LoRE) is the relative frequency of a specific risk event occurring. In the case of wildfire risk, this is the relative likelihood of an ignition occurring. | <p>CoRE</p> <ul style="list-style-type: none"> The consequence of a risk event (CoRE) is the average impact of the risk should it materialize across key outcomes (Safety, Reliability, Financial). In the case of wildfire risk, consequence contains serious injuries, fatalities, property damage, and impacts to reliability. |
|---|--|

Risk = LoRE X CoRE

- Risk is the product of the likelihood and consequence of a risk event.
- This method produces an expected value of impact across the consequence outcomes, and when combined results in a **multi-attribute score** that can inform risk-based decision making

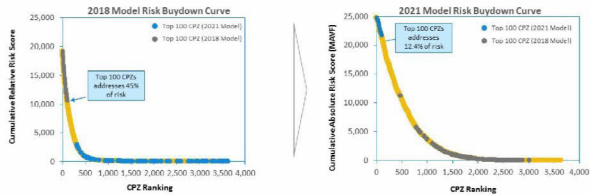






Risk models provide risk buydown curves to guide workplan

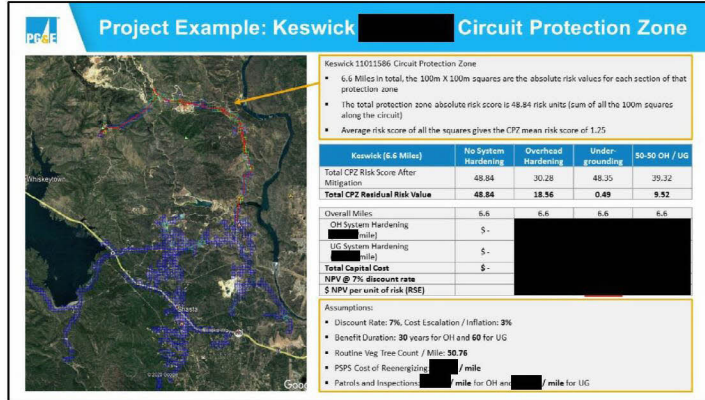
The risk buydown curve shows the amount of risk that can be addressed with every subsequent mile or CPZ that is mitigated. This view shows the relative magnitude of potential projects and can compare impacts of programs with varied effectiveness. The visualization helps to highlight the consolidation of risk by mile as you move down the prioritization list.



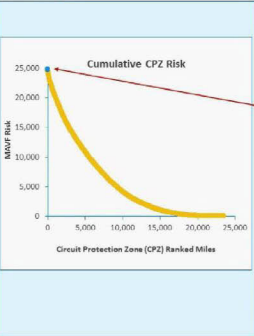
System Hardening Risk Buydown curves highlight the significant shift of where the top 100 CPZ's are between the two models

Project Example

1/20/2014



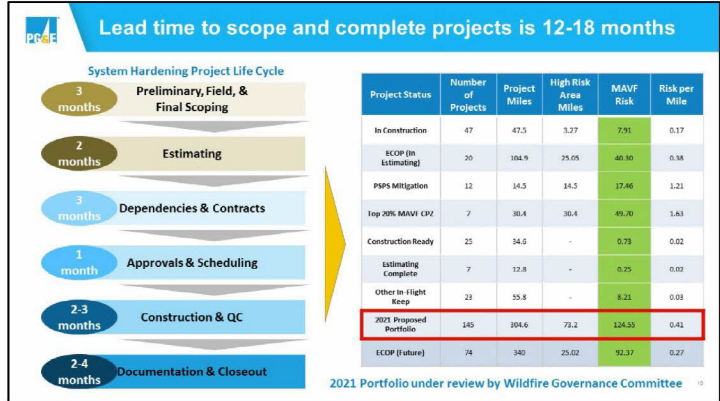
The top 50 riskiest miles represent 4.9% of the system risk.



| Protection Zone Name | Miles | Cumulative Miles | Mean MAUP Score | Total CPZ MAUP | % total risk reduced (52%) |
|-------------------------|-------|------------------|-----------------|----------------|----------------------------|
| OREGON TRAIL 1109LUN991 | 0.02 | 0.02 | 3.16 | 3.16 | 0.01% |
| CALPINE 1144276-G | 0.01 | 0.03 | 1.88 | 1.88 | 0.01% |
| MARIPOSA 210190130 | 0.08 | 0.12 | 1.69 | 1.69 | 0.02% |
| SHEPHERD 2111688294 | 0.01 | 0.13 | 1.44 | 1.44 | 0.02% |
| MIDDLE TOWN 1109L8 | 0.06 | 0.19 | 1.30 | 3.20 | 0.03% |
| UPPER LAKE 1101C8 | 1.00 | 1.17 | 1.26 | 5.77 | 0.04% |
| KESWICK | 6.66 | 7.83 | 1.25 | 48.84 | 0.17% |
| MIDDLETOWN 110230K510 | 4.71 | 12.04 | 0.92 | 48.56 | 0.23% |
| KONOCTI 1102965078 | 5.61 | 17.65 | 0.88 | 51.70 | 0.42% |
| MARIPOSA 2102241564 | 0.64 | 18.29 | 0.77 | 10.81 | 0.44% |
| BUCKS CREEK 1101CB | 4.20 | 22.58 | 0.72 | 7.55 | 0.47% |
| SILVER CREEK 110278446 | 0.09 | 22.67 | 0.72 | 4.38 | 0.47% |
| MIDDLETOWN 1102CB | 0.42 | 23.08 | 0.72 | 8.70 | 0.48% |
| MIDDLETOWN 1103830 | 24.80 | 47.88 | 0.72 | 151.83 | 0.87% |

Key Takeaways

- Mitigating 25 of the 50 riskiest miles within PG&E's service territory would reduce ~0.5% of PG&E's total wildfire risk.
- Reason it is only 0.5% is because this is across all circuits in HFTD's (~25000 miles).
- On each project a more granular risk spend efficiency calculation can and will be performed on an NPV basis once the project is fully scoped similar to what is shown on the Keswick circuit protection zone.



Target Setting

11/20/2014


System Hardening

Conditions

Condition 1: 80%¹ of system hardening miles have to be high-risk miles or LTIP is 0

Risk Profile (High Risk Miles defined as)

1. Top 20%² of risk buydown curve
2. Fire rebuild miles
3. PSPS mitigation miles



Condition 2: Set minimum percentage of miles mitigated with either Line Removal or Undergrounding or LTIP is 0

Risk Effectiveness

- 5%, 10% and 35% of Undergrounding or Line Removal work in the System Hardening project portfolio³ in 2021, 2022 and 2023, respectively

Risk Exposure

- Count of circuit miles system hardened in the HFTD and HFRA

System Hardening Targets (Risk Miles)

| | LTIP 0.5 | LTIP 1.0 | LTIP 2.0 |
|-----------|----------|----------|----------|
| 2021 | 305 | 320 | 350 |
| 2022 | 350 | 368 | 403 |
| 2023 | 396 | 416 | 455 |
| 2021-2023 | 1,051 | 1,103 | 1,209 |

1. Basis of the 80% is to allow for operational execution considerations including permitting, weather related access, and mob/demob efficiencies
 2. Basis of the top 20% correlates to ~70% of the risk on the risk buydown curve
 3. Risk reduction effectiveness for Overhead hardening is estimated at 62% and Undergrounding or Line Removal is estimated at 99%



Enhanced Vegetation Management (EVM)

Conditions

- Condition 1: 80%¹ of EVM miles have to be high-risk miles or LTIP is 0**
- Risk Profile (High Risk Miles defined as)**
 - Top 20%² of risk model buydown curve
 - Fire impacted miles
- Risk Effectiveness**
 - Execute work consistent with defined EVM scope
 - Achieve 12' recommended radial clearance
 - Access viable potential trees including high risk species
 - Remove overhangs above and within 4 feet of power lines
 - Mitigate vegetative fuels under and adjacent to powerlines on targeted basis
- Risk Exposure**
 - Count of EVM miles worked in the HFTD and HFRA

EVM Targets (Risk Miles)

| | LTIP 0.5 | LTIP 1.0 | LTIP 2.0 |
|-----------|----------|----------|----------|
| 2021 | 1,800 | 1,890 | 2,070 |
| 2022 | 1,800 | 1,890 | 2,070 |
| 2023 | 1,800 | 1,890 | 2,070 |
| 2021-2023 | 5,400 | 5,670 | 6,210 |

Note: Targets are based on 12-yr EVM Program pace (2021 – 2032) consistent with the PCR. Evaluating viability of 10-yr pace (2021 – 2030).

1. Basis of the 80% is to allow for operational execution considerations including permitting, weather-related access and, customer approvals
2. Basis of the top 20% correlates to ~85% of the risk on the risk buydown curve

The LTIP targets for system hardening are set based on 2021 risk miles and program funding assumptions

Program Funding

- Forecast of [redacted] Wildfire Mitigation capital spend in 2021 consistent with the Settlement for the 2020-2022 GRC. 2022 forecast escalates 2021 by 15% and 2023 forecast escalates 2021 by 30%.

Unit Costs

- Assumes [redacted] per circuit miles of Overhead SH work and [redacted] for Underground work

Program Duration

- Execution of the 13-year plan focusing on top 20% circuit protection zones by 2032

| | System Hardening LTIP Targets | | |
|-----------|-------------------------------|----------|----------|
| | LTIP 0.5 | LTIP 1.0 | LTIP 2.0 |
| 2021 | 305 | 320 | 350 |
| 2022 | 350 | 368 | 403 |
| 2023 | 396 | 416 | 455 |
| 2021-2023 | 1,051 | 1,103 | 1,209 |

Targets are miles of system hardening work for specific risk-prioritized work

- The total mileage of the proposed 2021 Project Portfolio was set as the threshold goal (LTIP 0.5) for 2021
- LTIP 0.5 goals in 2022 and 2023 reflect escalation of program funding level
- The target and stretch goals (LTIP 1.0, 2.0) were set as 5% and 15% higher, respectively

¹ [redacted] includes scoping and engineering costs for future system hardening projects beyond 2021 and additional minor capital spend for other Wildfire Mitigation Programs ¹⁴



The LTIP targets for EVM are set based on work to be completed over the remaining twelve years of the program

Program Duration

- Assumes execution of the 12-year Enhanced Vegetation Management Plan (2021-2032)
- Evaluating viability of 10-year pace (2021-2030)

Program Funding

- Forecast of [redacted] spend on EVM program in 2021, 2022 and 2023 respectively (in alignment with PCIR)
- 10-year pace will result in incremental forecast of [redacted] per year

Unit Costs

- Assumes [redacted] per miles of EVM work

Enhanced Vegetation Management LTIP Targets

| | LTIP 0.5 | LTIP 1.0 | LTIP 2.0 |
|-----------|----------|----------|----------|
| 2021 | 1,800 | 1,890 | 2,070 |
| 2022 | 1,800 | 1,890 | 2,070 |
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Appendix

11/20/2014

