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VIA ELECTRONIC MAIL

Ms. Caroline Thomas Jacobs
Director, Wildfire Safety Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

*Transmittal to: wildfiresafetydivision@cpuc.ca.gov,
CALFIREUtilityFireMitigationUnit@fire.ca.gov, and R.18-10-007 service list*

**RE: MUSSEY GRADE ROAD ALLIANCE REPLY TO STAKEHOLDER COMMENTS ON
2021 WILDFIRE MITIGATION PLANS OF PG&E, SCE, AND SDG&E**

Dear Director Thomas Jacobs:

The Mussey Grade Road Alliance (MGRA or Alliance) serves these reply comments pursuant to Resolution WSD-011,¹ which authorizes public comment on the 2021 Wildfire Mitigation Plans (WMPs) of the three major investor-owned utilities (IOUs) by March 17, 2021, the Wildfire Safety Division's (WSD's) approval of the Joint Stakeholders' request for an extension setting a due date of March 29, 2021,² and WSD's approval of the deadline extension request issued by the Joint Utilities.³

The Alliance provided its own comments on the 2021 Wildfire Mitigation Plans along with other stakeholders on March 29, 2021.⁴ Those comments provide a brief history of our 15 year

¹ Resolution implementing the requirements of Public Utilities Code Sections 8389(d)(1), (2) and (4), related to catastrophic wildfire caused by electrical corporations subject to the Commission's regulatory authority; November 30, 2020; p. 9. (WSD-011)

² Letter from Lucy Morgans; Wildfire Safety Division; Re: Request from the Joint Utilities for Extension of Time to Provide 2021 Wildfire Mitigation Plan Reply Comments; April 2, 2021.

³ Letter from Lucy Morgans; Wildfire Safety Division; Re: Joint Stakeholder Request for Extension of Time to Provide 2021; Wildfire Mitigation Plan Comments; March 1, 2021.

⁴ MUSSEY GRADE ROAD ALLIANCE COMMENTS ON 2021 WILDFIRE MITIGATION PLANS OF PG&E, SCE, AND SDG&E; March 29, 2021. Available on WSD's website:
<ftp://ftp.cpuc.ca.gov/WMP/2021/PublicComments/Mussey%20Grade%20Road%20Alliance%20on%20Large%20IOUs.pdf>

involvement with utility wildfire safety and advocacy for effective wildfire mitigation planning. We were pleased to see that so many stakeholders have committed the time and resources to analyze these voluminous documents and provide comments.

MGRA's reply comments once again are authored by the Alliance expert, Joseph W. Mitchell, Ph.D.⁵

Respectfully submitted this 13th day of April, 2021,

By: /s/ **Diane Conklin**

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⁵ M-bar Technologies and Consulting, LLC; <http://www.mbartek.com>; Email: jwmitchell@mbartek.com. Dr. Mitchell is also a board member of the Mussey Grade Road Alliance.

WILDFIRE MITIGATION PLAN REPLY COMMENTS ON BEHALF OF THE MUSSEY GRADE ROAD ALLIANCE

The Mussey Grade Road Alliances’ (MGRA or Alliance) Wildfire Mitigation Plan (WMP) reply comments are authored by MGRA’s expert witness Joseph W. Mitchell, Ph.D.⁶

1. INTRODUCTION

The Mussey Grade Road Alliance provides brief reply comments to selected comments by fellow stakeholders. These comments are arranged by subject matter.

2. ISSUES

2.1. Approval Timelines

Several stakeholders, particularly Public Advocates⁷ and TURN⁸ – have recommended for the denial or rejection of one or more of the major IOU Wildfire Mitigation Plans. Indeed, the Alliance noted many serious flaws in the plans, especially in terms of risk analysis, and recommends that these be resolved prior to approval.⁹

For each Wildfire Mitigation Plan, the Wildfire Safety Division is required to “*verify that the plan complies with all applicable rules, regulations, and standards, as appropriate.*”¹⁰ Public Utilities Code Section 8386.3(a) lays out rules regarding plan approval: “*The Wildfire Safety Division shall approve or deny each wildfire mitigation plan and update submitted by an electrical corporation within three months of its submission, unless the division makes a written determination, which shall include reasons supporting the determination, that the three-month*

⁶ M-bar Technologies and Consulting, LLC; <http://www.mbartek.com>; Email: jwmitchell@mbartek.com. Dr. Mitchell is also a board member of the Mussey Grade Road Alliance.

⁷ Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Update of Pacific Gas and Electric Company; March 29, 2021; p. 2. (Public Advocates PG&E Comments)

“The WSD should deny PG&E’s 2021 WMP and order substantial revisions.”

⁸ COMMENTS OF THE UTILITY REFORM NETWORK ON 2021 WILDFIRE MITIGATION PLAN UPDATES; March 29, 2021; p. 27, 47. (TURN Comments)

⁹ MGRA Comments; p. 39.

¹⁰ PUC Code Section 8386(d).

deadline cannot be met... Before approval, the division may require modifications of the plan. After approval by the division, the commission shall ratify the action of the division.”

It is clearly the legislators’ intent that the Wildfire Safety Division be given the discretion to withhold approval of WMPs until the WMPs comply with all applicable rules, regulations, and standards.

WSD should exercise its given authority to withhold plan approvals until modifications are made to the WMP in question if substantial shortcomings are found in a plan. This is the position that MGRA took in its WMP comments with regard to PG&E’s risk analysis. For its part, TURN in its comments additionally urges that “conditional approval” be eliminated,¹¹ arguing that a WMP should not offer the utilities the benefit of a safety certification until the plan is approved in whole. We agree.

2.2. Substantial Biases and Uncertainties in Utility Risk Calculations

As noted in the MGRA Comments, there are potential biases in utility risk calculations due to what we claim are incorrect modeling choices for the Technosylva fire spread modeling. These choices will tend to artificially move risk towards circuits near population centers.¹² The MGRA comments also noted a serious issue with PG&E’s machine-learning ignition model and the fact that it does not account for the increased probability of ignitions during extreme weather events.¹³ Finally, the MGRA comments raised again the issue noted in our 2020 WMP comments that weather forecasting software used by PG&E and SCE, while similar in its base assumptions, produces dramatically different results when applied to the same geographic areas.¹⁴

¹¹ TURN Comments; p. vi.

¹² MGRA Comments; p. 12: “the fires being simulated are smaller than typical ‘catastrophic’ wildfires that cause damage. One reason is that the duration of the simulation is limited to 8 hours, a choice made by all three major IOUs. The net effect of smaller simulated fires is to artificially shift the calculated risk towards utility infrastructure proximate to population centers, and to downplay the risk of ignitions in remote areas that grow into major fires before descending as a broad front into wildland urban interface areas.”

¹³ MGRA Comments; pp. 32-39.

The Green Power Institute also noted potential problems with PG&E’s machine-learning algorithm in its comments:

COMMENTS OF THE GREEN POWER INSTITUTE ON THE 2021 WILDFIRE MITIGATION PLAN UPDATES; March 29, 2021; pp. 8-9.

¹⁴ MGRA Comments; pp. 73-75.

MGRA therefore recommended that WSD hold workshops to evaluate utility risk models.¹⁵ Public Advocates makes a similar recommendation: “*The WSD should convene a technical working group to examine the large IOUs’ risk modeling practices...*

*The three large IOUs rely on complex models to estimate the risk posed by their assets, and the amount of risk reduced by various mitigation initiatives. These models drive the prioritization of high-stakes initiatives, including system hardening efforts projected to cost in the hundreds of millions of dollars.”*¹⁶

Cal Advocates correctly notes that there may be issues with utility weather models: “*To develop PG&E’s climatology models, this data was downscaled from a 56 km resolution to a 2 km resolution. This level of downscaling requires a significant amount of interpolation to translate data from a single cell to nearly 800 cells. Additionally, at these smaller resolutions, the effects of local terrain and surface roughness can create local climates that may not be accurately represented by the model. For further discussion of the POMMS model, please refer to Appendix B (Confidential) of these comments.”*¹⁷ This is not merely an issue for PG&E. All the major IOUs use WRF-based (Weather Research and Forecasting) models, and all will have difficulties modeling wind behavior at smaller scales where convective effects may be significant.¹⁸ It is also important that all utility internal evaluations be public documents and not confidential.¹⁹

Hence, any recommendations regarding re-prioritization of mitigation work based on current risk modeling need to be carefully evaluated. Cal Advocates notes that PG&E’s ranking of circuit risk was dramatically different from its previous risk ranking: “It may be that PG&E’s 2021 Wildfire Distribution Risk Model is correct, while the 2018 model was deeply flawed. However, this remains to be proven. It is also possible that the 2018 model was more accurate, or that both models are flawed. In either event, a workshop would clarify these uncertainties.”²⁰

¹⁵ MGRA Comments; p. 54.

¹⁶ Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities; March 29, 2021; p. 29. (Public Advocates Large IOU Comments)

¹⁷ Public Advocates Large IOU Comments; p. 30.

¹⁸ Coen, J.L., Schroeder, W., Conway, S., Tarnay, L., 2020. Computational modeling of extreme wildland fire events: A synthesis of scientific understanding with applications to forecasting, land management, and firefighter safety. *Journal of Computational Science* 45, 101152. <https://doi.org/10.1016/j.jocs.2020.101152>

¹⁹ MGRA Comments; p. 75

²⁰ Public Advocates Large IOU Comments; pp. 32-33.

Risk ranking uncertainties apply to all utilities, however. Public Advocates Office suggests that *“if SCE focused its efforts on the riskiest circuits, it could treat all of them in about a year. The number of overhead miles on these circuits is less than SCE’s aspirational goal for covered conductor in 2021. This would sharply reduce wildfire risk and considerably alleviate the burden of de-energization on customers, as SCE can use higher wind thresholds if all targeted segments are covered.”*²¹ TURN makes a similar proposal for a more limited application of covered conductor based on SCE’s risk model.²² While focusing on the highest risk circuits is a correct and potentially helpful approach, further validation of SCE’s risk model would be essential prior to any major re-prioritization of this type. Biases resulting from inappropriately small simulated fires will tend to artificially concentrate risk into circuits nearer to population centers and steepen the “buy-down” curves.

One analysis that could be helpful for risk estimate validation is “backcasting” past fires to see whether the circuits producing major fires had appropriate risk ratings. Due to the small number of truly catastrophic fires this will need to be supplemented with other analyses, but it may serve to identify major biases.

2.3. Covered Conductor

MGRA’s comments suggested that WSD make further effort gauge the desirability and effectiveness of covered conductor programs.²³ With SCE deploying substantially more covered conductor at lower cost than other utilities it is important to know which of the utilities have the correct approach. Because of the speed of SCE’s deployment and the level of its spending on covered conductor, this is an urgent question.

Cal Advocates’ suggests that “WSD should convene a technical working group to examine the cost-effective deployment of covered conductor. Covered conductor has been the cornerstone of SCE’s system hardening efforts. Covered conductor has a lifespan of 40 to 60 years, whereas the impact of enhanced vegetation management lasts only for a season or a few years at most. Installation of covered conductor on overhead circuits is by far the greatest cost component of

²¹ Public Advocates Large IOU Comments; p. 7.

²² TURN Comments; pp. 47-50.

²³ MGRA Comments; pp. 64-65.

*SCE's 2021 WMP.*²⁴ TURN also supports workshops to evaluate the RSE for covered conductor.²⁵ MGRA concurs with these proposals.

The costs of covered conductor replacement are so large to prompt to TURN suggest that: *“From a broader societal perspective, while utility wildfire work is focused on utility equipment, the State should consider whether it would not be more effective to raise taxes and direct \$40 billion to other wildfire mitigation measures instead of installing covered conductor on 30,000 miles of wire, since it is almost certain that other ignition sources, besides utility equipment, may well spark the next deadly wildfire.”*²⁶

Unfortunately, we have very few cost-effective and environmentally acceptable levers to address wildfire risk, and even throwing this amount of money at the problem is unlikely to make an appreciable difference. For example, say that we “fire harden” homes in the wildland urban interface with a combination of retrofitting and wildfire defense systems such as water spray, and that this costs \$40,000 per home. \$40 billion would allow only 100,000 homes in the WUI to be treated out of the roughly 2 million homes in California judged to be at high or extreme fire risk.²⁷ On the other hand, utility wildfires have been responsible for a large fraction of overall deaths and home losses, due to the coupling between ignition cause and fire spread discussed at some length in the MGRA 2021 WMP Comments. Cost-effective utility wildfire mitigation is therefore one of the best methods we currently have to efficiently buy down wildfire risk to Californians. TURN is correct to be concerned with the costs of a comprehensive covered conductor program, and to wonder whether this is the most efficient alternative. WSD needs to urgently consider this matter in consultation with utilities and stakeholders.

2.4. Risk/Spend Efficiencies

MGRA comments observed that the approaches of the major IOUs to calculating risk/spend efficiencies were so wildly divergent that the results are effectively incomparable.²⁸ This

²⁴ Public Advocates Large IOU Comments; p. 39.

²⁵ TURN Comments; p. vii.

²⁶ TURN Comments; p. 34.

²⁷ Zurich Insurance; California fires: Building resilience from the ashes; December 2019.

<https://www.zurichna.com/-/media/project/zwp/zna/docs/kh/wildfire/california-wildfire-report.pdf>

²⁸ MGRA Comments; pp. 65-70.

inconsistency calls into question the entire concept of risk-based safety spending as currently practiced.

TURN also notes significant differences in the manner that different utilities calculate RSEs.²⁹

Cal Advocates suggests that “*WSD should convene a technical working group to develop a standard methodology for estimating RSEs. These working groups should involve the large IOUs, and all stakeholders who wish to participate. It would also be beneficial for the WSD to retain technical consultants who can provide insight into the best methods for calculating RSEs.*”³⁰ It should be noted that this effort could potentially overlap with issues potentially within the scope of the SMAP/RDF proceeding R.20-07-012. Regardless, WSD should at the least flag this as a major issue, and potentially become a party or consultant to the Commission proceeding that is re-evaluating the SMAP process.

2.5. Power Shutoff

A number of stakeholders have expressed their concern regarding the utility approach to power shutoff. The Valley Women’s Club Environmental Committee for the San Lorenzo Valley correctly notes that “PG&E is spending millions to make PSPS less onerous rather than less necessary”³¹ Green Power Institute notes that “PG&E reported very small reductions in customer impacts related to grid hardening, suggesting that sectionalization efforts and other grid hardening work was unable to substantially reduce PSPS risk.”³² Santa Clara County laments that “Despite significant and costly investments in grid enhancements and vegetation management, PG&E now forecasts equal or more frequent use of PSPS events throughout the next decade.”³³

²⁹ TURN Comments; pp. 34-36.

³⁰ Public Advocates Large IOU Comments; p. 38.

³¹ COMMENTS and CRITICISMS RE 2021 UPDATE PG&E WILDFIRE MITIGATION PLAN Valley Women’s Club Environmental Committee for the San Lorenzo Valley; March 29, 2021; p. 2.

³² COMMENTS OF THE GREEN POWER INSTITUTE ON THE 2021 WILDFIRE MITIGATION PLAN UPDATES; March 29, 2021; p.5.

³³ COMMENTS OF THE COUNTY OF SANTA CLARA ON PACIFIC GAS AND ELECTRIC COMPANY’S 2021 WILDFIRE MITIGATION PLAN; March 29, 2021; p. 3.

As MGRA noted in its own comments, there is a strong likelihood that the power shutoff problem – specifically in the PG&E service area – is going to get substantially worse in the next fire season. Federal Judge Alsup is soon to rule on changes to the conditions of PG&E’s probation that may require PG&E to implement an even more aggressive shutoff program.³⁴ MGRA urged WSD and WSAB to side with the Commission’s objection to proposed modifications. However, it appears that Judge Alsup has lost faith in the ability of the CPUC to regulate the utilities it oversees:

“PG&E has put us in this position and the regulators let them get away with it. You did,” Judge William Alsup told an attorney for the California Public Utilities Commission in Tuesday’s hearing. ‘The agency did not come down hard on PG&E when it would have made a difference.’”³⁵

It is likely that he will rule to approve PG&E’s proposal to lower shutoff wind speed thresholds: *“I am not open to the idea that we would kick the can down the road and study the idea to death,” Alsup said. ‘We don’t have the luxury to wait around. This is where we are.’”³⁶*

Since 2009, MGRA has repeatedly urged the Commission to come up with mechanisms to quantify and understand the customer harm arising from power shutoff. While the Commission has occasionally mulled over the question of whether to do this and is currently considering it for the SMAP/RDF proceeding, no action has to date been taken. As a result, the Commission currently has no factual basis to argue against a drastic lowering of the power shutoff threshold.

WSD should now take up the responsibility for leading the effort to establish a rigorous cost/benefit or risk/benefit analysis to identify appropriate thresholds for shutoff of electricity. While it will be too late to influence the outcome of PG&E’s probation review this is an ongoing problem in all utility service areas. This is a crisis that has been long in the making, and it will never be resolved until regulators commit the time and resources necessary to address it.

Additionally, PG&E’s long term plan to remedy the issues requiring expansion of power shutoff consists of a substantial increase in tree removals by expanding the EVM program to include all Gray Pines and Tanoaks leaning more than 20 degrees, up from the current 25 degrees.³⁷

³⁴ MGRA Comments; p. 79.

³⁵ Rittiman, B., abc10.com, March 29, 2021. Federal judge declines to probe PG&E for obstruction of justice.

³⁶ *Id.*

³⁷ UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION; UNITED STATES OF AMERICA v. PACIFIC GAS AND ELECTRIC COMPANY; PG&E’S RESPONSE TO ORDER TO SHOW CAUSE WHY FURTHER CONDITION OF PROBATION SHOULD NOT BE IMPOSED; Case No. 14-CR-00175-WHA; March 23, 2021; pp 2-3:

Another topic that WSD should take up immediately is the question of whether PG&E’s power shutoff could be addressed in a reasonable timeframe and in an environmentally sound way if a substantial and dedicated effort were to be made to validate and deploy the REFCL technology on an accelerated timeframe, as explained in the next section.

2.6. REFCL

PG&E is currently evaluating “Rapid Earth Fault Current Limiter” (REFCL) technologies that could drastically reduce ignition potential for certain classes of faults and for certain circuit configurations.³⁸ SCE is also evaluating this technology.³⁹ If it proves feasible, this could be a “game changing” technology that virtually eliminates certain classes of fire risk. Among the fault types REFCL can mitigate are tree-line contacts, thus potentially addressing the issues that may lead the federal court monitor to require an expanded power shutoff program.⁴⁰ PG&E calculates a potentially high RSE for REFCL of 126,⁴¹ making it very attractive as a mitigation measure.

TURN suggests that: “It is entirely likely that it would be much more cost-effective to limit relatively expensive covered conductor focused work in 2021 and 2022, particularly in areas where

“PG&E proposes the following bright-line approach that would go beyond what is required under state law: as long as CAL FIRE and the CPUC do not object, PG&E will institute a program to abate all Gray Pines tall enough to fall into a distribution line in a Tier 2 or Tier 3 HFTD that lean more than 20 degrees towards the line in four regions (Bay Area, Central Valley, North Valley and Sierra) and abate all Tanoaks tall enough to fall into a distribution line in a Tier 2 or Tier 3 HFTD that lean more than 20 degrees towards the line in three regions (Bay Area, Central Coast and North Coast). These trees will be targeted, regardless of health, because data shows that these particular species may present higher risk of falling into the line in these particular regions. The pace of the program would depend on the number of trees that need to be felled, but PG&E would attempt to get crews in the field doing this work as soon as practicable. As to other tree species, PG&E would continue with its broader enhanced vegetation management (“EVM”) effort, which addresses trees of all species in high-fire threat areas and goes beyond what is required by state law to reduce wildfire risk.

Under EVM, PG&E is assessing every tree capable of striking the line using criteria developed by certified arborists to determine which trees present a sufficiently elevated risk such that they should be removed under the EVM program, regardless of health. As part of that program, the lean of each tree is assessed and used in the determination. Under current EVM standards, if a tree leans more than 25 degrees toward the line and is tall enough to fall into the line, it is abated under EVM.”

<https://www.courtlistener.com/recap/gov.uscourts.cand.276096/gov.uscourts.cand.276096.1358.1.pdf>

³⁸ PACIFIC GAS AND ELECTRIC COMPANY 2021 WILDFIRE MITIGATION PLAN REPORT; RULEMAKING 18-10-007; FEBRUARY 5, 2021; p. 313.

³⁹ Southern California Edison; 2021 WILDFIRE MITIGATION PLAN UPDATE; February 5, 2021; p. 173.

⁴⁰ PG&E 2020 WMP Comments; p. 571.

⁴¹ TURN Comments; p. 26.

REFCL is a promising and more cost-effective alternative.”⁴² However, it needs to be noted that the classes of faults addressed by REFCL and covered conductor are to some extent complimentary. REFCL addresses ground faults, in which a path from conductor to ground is present, such as tree contact or wire down. REFCL is not effective at addressing phase-to-phase faults, such as branches across conductors or line slap. The Safety Policy Division, in its report on the PG&E RAMP noted that “A combination of covered conductor and REFCL would substantially reduce ignition risks.”⁴³ In an October 2020 presentation by PG&E supporting its RAMP, a PG&E representative confirmed that a combination of REFCL and covered conductor could effectively eliminate all common ignition risks.⁴⁴

One common thread that MGRA has identified in its review of quarterly reports is that utilities do not have plans for rapidly implementing “game changing” technologies.⁴⁵ Elimination of customer and resident risk from wildfire and power shutoff in mid-range timeframes might be feasible with some of the technologies currently under evaluation, but only with a visionary commitment to the goal of ending the utility wildfire problem and the planning of ambitious programs. As TURN suggests, it is possible that the considerable resources being deployed to mitigate wildfire risk with very modest returns could be re-allocated to programs that will be much more effective and efficient.

WSD should require PG&E to develop a proposal for a “moon shot” program that could mitigate areas exposed to expanded shutoff with REFCL within the next few years and potentially reduce the need for environmentally damaging expanded EVM. If feasible and sound, the same approach could be adopted by other IOUs.

2.7. Vehicle-Caused Ignitions

⁴² TURN Comments; p. 26.

⁴³ A.20-06-012; Safety Policy Division Staff Evaluation Report on PG&E’s 2020 Risk Assessment and Mitigation Phase (RAMP) Application; November 24, 2020; p. 65.

⁴⁴ MUSSEY GRADE ROAD ALLIANCE COMMENTS ON THE PACIFIC GAS AND ELECTRIC COMPANY 2020 RISK ASSESSMENT AND MITIGATION PHASE REPORT AND THE SAFETY POLICY DIVISION STAFF EVALUATION REPORT; January 15, 2021; p. 20.

⁴⁵ MUSSEY GRADE ROAD ALLIANCE COMMENTS ON 2020 WILDFIRE MITIGATION PLAN Q4 QUARTERLY REPORT OF SDG&E, PG&E, AND SCE; January 6, 2021; pp. 5-6.

The Protect Our Communities Foundation (PCF) correctly notes that vehicle-caused ignitions are a leading cause of wildfire in the SDG&E service area, and that the WSD has directed SDG&E to address this issue.⁴⁶ In MGRA’s comments on the WSD-002 through WSD-005, MGRA urged WSD and the Commission not to over-emphasize ignitions from external agents that are uncorrelated with fire weather, such as balloons, animals, and vehicles:

“Not all ignitions are equally likely to result in a catastrophic fire. Analysis has shown that ignitions that are correlated with the conditions that lead to rapid fire growth, specifically that are wind-driven, such as equipment failure, vegetation contact, and conductor-conductor contact, have been responsible for all catastrophic utility fires. While it is possible that an ignition from animal contact, vehicle contact, or a mylar balloon just happens to occur during extreme fire weather and results in a catastrophic fire, this is far from the most likely scenario. These ignition sources are not driven by the same conditions that lead to extreme fire weather.

It would good to remove all risks, but in the world of limited resources and time it is important to concentrate on risks most likely to result in the most harm. Rather than require SDG&E to develop remediation programs for vehicle and balloon fire risk, it would make more sense to invest the same resources into developing mitigation strategies that reduce the risk of vegetation ignitions, equipment failures, and line slap, thereby substantially reducing catastrophic fire risk and the need for de-energization.”⁴⁷

As PCF notes, electrical service in the SDG&E’s territory is extremely expensive.⁴⁸ That being true, it is important to target precious mitigation dollars to where they will be the most effective in stopping catastrophic fires. As the analysis in MGRA’s 2021 WMP Comments show, the type, not just the number, of ignitions is a predictor of large fire risk.⁴⁹ Hence, mitigation against vehicle-caused ignitions may not be as effective in reducing the overall fire risk as other mitigation measures. Rebalancing of mitigation measures should be driven by correct and validated risk modeling.

⁴⁶ THE PROTECT OUR COMMUNITIES FOUNDATION COMMENTS ON THE 2021 WILDFIRE MITIGATION PLANS PURSUANT TO RESOLUTION WSD-001; March 29, 2021; pp. 4-6.

⁴⁷ MUSSEY GRADE ROAD ALLIANCE COMMENTS ON WSD-002 TO WSD-005; May 27, 2020; pp. 12-14.

⁴⁸ PCF Comments; pp. 14-15.

⁴⁹ MGRA Comments; pp. 27-30.