

From: Al Miller <syngineer1@gmail.com>
Sent: 11/20/2024 11:04:59 AM
To: Public Comment <PublicComment@trpa.gov>
Cc: Julie Regan <jregan@trpa.gov>;
Subject: General Comment: Governing Board Agenda Item X. Nov 20, 2024 Meeting
Attachments: [BBILAN Public Comments Douglas Cty Tahoe.pdf](#)

Please post these late comments and the attached pdf from the Broadband International Legal Action Network on the TRPA website for the above-cited Item and include the information as public comments in the public record of the November 20, 2024 Governing Board meeting.

Sincerely,

Alan Miller, Professional Engineer



To: Douglas County, Nevada Board of County Commissioners, City of South Lake Tahoe City Council, Tahoe Regional Planning Agency (TRPA) Board

From: Julian Gresser, Co-Founder Broadband International Legal Action Network (BBLAN)/National Coalition for Electrical Infrastructure Safety

Re: Hazards of Ignoring Electrically-Caused Fire Risks Associated with Cell Tower and Powerline Infrastructure in the Tahoe Regional Evacuation Plan

Date: November 20, 2024

Dear Concerned Public Officials:

The general deficiencies in the present Tahoe Regional Evacuation Plan, especially as relating to the South Shore, have been pointed out in [Doug Flaherty's constructive public comments, dated November 7, 2024](#) and in prior public filings expressing similar concerns by his organization, the [Tahoe Sierra Clean Air Coalition](#). My comments are submitted herein on behalf of Broadband International Legal Action Network (BBILAN), a public interest legal advocacy and educational organization. The comments focus on the additional significant and unattended risks of electrical fires caused by, or associated with, proliferating small and macro wireless cell towers, antennas, and electrical power lines throughout the larger Tahoe Basin.

My primary goal is to support wise leaders and change makers in the Tahoe Basin Community in finding a path toward dynamic and resilient balance in the design and implementation of a revised Tahoe Regional Evacuation Plan (including electrical fires) that will protect all those who live in and visit this national treasure.

A second goal is to reframe the challenges of electrical wildfire safety as a unique opportunity for true community prosperity generated through a process of community-wide collaborative innovation. This memorandum offers a framework to conceive, finance, and implement such a program, along with the attendant potential benefit streams for the larger Tahoe Region.

1. Tahoe Regional Evacuation Plan — A Significant Omission

There is no mention at all of the special risks of electrical fires presented by proliferating cell towers in the Tahoe Regional Evacuation Plan. From this omission, we may reasonably conclude that the subject is not even on the radar of the governing establishment. We believe this omission requires immediate and compelling public attention, notwithstanding government officials' other priorities. (BBILAN hosted a [National Webinar on Electrical Wildfire Hazards on May 20, 2024](#) which can provide a useful background on this important widely overlooked issue, including a discussion of the four prior major electrical fires in Los Angeles County.)

At Risk Population. The population of the Lake Tahoe Basin was 55,836 in 2020, according to the U.S. Decennial Census. Approximately 15 million tourists visit Lake Tahoe annually, 300,000 per day during the peak July-August season.

Cell tower proliferation. There are currently over 350 small cell and macro cell towers supporting over 600 antennas and at least 300 miles of power lines within the Tahoe Basin, and more wireless telecommunications infrastructure is planned over the upcoming years. The location of these towers in many instances is not available, and the official justification in Tahoe and elsewhere for not disclosing this information is public security risks. As explained below, location details are essential for effective evacuation implementation during electrically-caused fires.

Special Hazards of Electrical Fires. Keeping electrically-caused fires off the radar is a dangerous mistake for the following reasons:

Rapid Spread. Electrically-caused fires can spread quickly, especially if they ignite flammable grasses and materials like insulation, wood, or paper. The heat generated can also cause nearby materials to ignite, leading to a rapid escalation.

Toxic Smoke and Fumes. Electrically-caused fires often produce toxic smoke and fumes due to the combustion of plastics, insulation, and other synthetic materials. These fumes can be hazardous to health and complicate firefighting efforts.

Electrical Hazards and Water Use Restrictions. Water is commonly used to fight fires, but using water on electrically-caused fires can be dangerous for firefighters. Firefighters must take special precautions and use special equipment, which can slow down emergency response time.

National Forests. Lake Tahoe is surrounded by and encompassed within 154,000 acres of National Forest. Several macro cell towers are located inside these national forests, including Tahoe Mountain Communications Site, a 130-foot tall monopine tower, Angel's Roost monopine cell tower, Ski Run/Needle Peak monopine tower, and Tunnel Creek

Road monopine cell tower in Incline Village. Any of these towers can serve as a lightning rod to ignite an electrically-caused wildfire — defined as an uncontrolled fire in a natural area such as a forest, grassland, or prairie.

Evacuation. Electrically-caused fires present special challenges for population evacuation. These challenges can complicate evacuation efforts and increase the risk to both evacuees and emergency responders. Exit routes can be blocked off as electrically-caused fires spread rapidly. As cell tower electricity is almost always turned off during a wildfire, civilian communications are always compromised, leaving the public in the dark about where to go to safety. (Firefighters use their own emergency frequencies for communication.) At present, in addition to the Tahoe Regional Evacuation Plan, other existing [Evacuation Plans](#) in place for the Tahoe Basin do not provide special precautionary and emergency measures for the special challenges of electrically-caused fires.

Vulnerable populations. Economically disadvantaged communities, minorities, and disabled persons are especially defenseless during wildfires, including electrically-caused fires. They face serious communication and transportation challenges resulting in no viable means of escape. The endangerment of these communities raises profound questions of social justice and basic human rights of survival, due process and equal protection guaranteed by the U.S. and California Constitutions, and various federal and state statutes. (Please see [Legal Rights and Remedies of Minority Communities Regarding Risks of Electrical Wildfires Caused by Power Utilities and Small Cell and Macro Cell Towers.](#))

Insurance. Major insurance carriers are withdrawing from fire insurance entirely, and where it still exists, soaring rates make it unaffordable for most of the Tahoe population. Many or most policies will exempt damages from electrical fires, including injuries or deaths from toxic fume pollution. In any event, such insurance coverage, if it exists at all, is outside the reach of most members of vulnerable populations. As no governmental administrative compensation system exists, they are being asked to bear the entire electrical fire risk.¹

¹ From [Report: Home Insurance Premiums Continue To Surge As Regulators Navigate Impact of Volatile Market](#): “Wildfire risks now are presenting serious challenges for insurers. For instance, California faces risks from wildfires, flooding, and droughts along with significant regulatory challenges, making it difficult for insurers to cover the cost of claims. In response, major companies like State Farm, Allstate, and several others left the state in 2023 — with additional insurers like The Hartford following suit in 2024... In 2023, the home insurance market saw a surge in carrier restrictions and withdrawals from certain markets. As climate change led to more natural disasters, and inflation drove up building costs, insurance carriers struggled to remain profitable. To cover mounting losses, carriers attempted to raise rates, but were often met with denials and delays from the state Department of Insurance (DOI), which must approve any premium increases. Faced with these regulatory challenges and the inability to cover costs, many carriers began to limit or stop writing new policies, especially in high-risk areas. This

Cybersecurity. Local communities have in recent years been an [increasing target of cyberattacks](#). Electrical infrastructure is vulnerable:

- 1. Overloading Circuits:** Cyberattacks can manipulate the control systems that manage the flow of electricity, causing circuits to overload. This can result in overheating and potentially lead to fires.
- 2. Malfunctioning Equipment:** Cyberattacks can interfere with the normal operation of equipment such as transformers, relays, and circuit breakers. Malfunctioning equipment can generate excessive heat, leading to electrical fires.
- 3. Physical Damage via Remote Control:** Some cyberattacks can gain control over the physical components of the infrastructure. For instance, they can cause deliberate malfunctions in equipment like generators or cooling systems, leading to overheating and fires.
- 4. Disabling Safety Systems:** Cyberattacks can disable or bypass safety systems designed to prevent electrical fires. Without these safeguards, the risk of fire increases.
- 5. Targeting SCADA Systems:** Supervisory Control and Data Acquisition (SCADA) systems are critical for managing and monitoring electrical and telecommunications networks. Cyberattacks on SCADA systems can cause widespread malfunctions and create conditions conducive to electrical fires.

Negative Synergy. Non-electrical wildfires and electrical fires caused by or associated with power utilities and small cell and macro towers are negatively synergistic. The former can cascade and implicate the latter, compounding the dangers of both and increasing their Risks, where Risk = Probability x Damage. (See: [Appendix A — Cascading Effects and Increased Risks of Electrical Wildfires](#).)

tightening of underwriting guidelines and reduction in business left many homeowners struggling to secure coverage.”

From: [Catastrophe Insurance: Meaning, Types, Who Needs It](#): “Catastrophe insurance protects businesses and residences against natural disasters such as earthquakes, floods, and hurricanes and against human-made disasters such as riots or terrorist attacks. However, these low-probability, high-cost events are generally excluded from standard homeowners insurance policies. Moreover, many homeowners policies cover only named perils, which can vary from policy to policy and by insurance company. Even an "all perils" policy may exclude some events or contain specific policy limits, resulting in inadequate coverage for a major loss, which is where catastrophe insurance can help.”

Conclusion: As electrical wildfires are “off the radar” of the fire departments in most communities, there is a real chance that these serious risks are uncovered by some present policies. Of course, most economically disadvantaged and minority communities cannot afford such coverage even where it is available, which as noted raises serious civil and human rights issues as discussed in this paper.

2. **Analytic Electrical Fire Risk Matrix (Tahoe)**

Based on BBILAN's [Tahoe Basin Electrical Wildfire Safety Action Plan](#), there is a 25% risk (Risk = Probability x Damages) of an electrical fire in the greater Lake Tahoe Community over the next three years, with estimated damages of over \$5 billion. As in most communities, electrical fires are "off the radar" of the Tahoe Regional Planning Agency (TRPA), local municipalities, and fire departments in Tahoe. If present electrical fire risk factors continue to be ignored, our risk estimate will substantially increase.²

Since performing the initial Risk Analysis we re-ran the analysis with two significant additional risk factors:

- Tahoe does not at present have a Power Shut Off Plan (PSOP), which is an essential step in controlling an electrically-caused fire.
- Barton Hospital is being relocated to Nevada. The move raises a serious question of how well prepared Barton Hospital is for additional victims of an electrically-caused fire.

With the consideration of the new risk factors, the adjusted annual risk of an electrically-caused wildfire in the greater Tahoe Basin is estimated to increase to approximately 35%, and the potential damages could rise to between \$1.75 billion and \$2.1 billion over the next three years. This highlights the critical need for the implementation of preventative measures such as a PSOP program to mitigate these elevated risks.

This revised risk assessment reflects the increased potential damages due to the lack of a PSOP and the relocation of the region's sole hospital, which could significantly affect the emergency response capabilities and overall community resilience in the event of a wildfire.

3. **Estimated Deaths and Serious Injuries from a Combined Electrical/Non-Electrical-Caused Wildfire**

Robert W. Byren, TESA Tech Team, in his report commissioned by Tahoe East Shore Alliance, [The Wildfire Evacuation Dilemma -- How Not To Become Lahaina](#), writes this chilling statement:

"Assuming the same 24-hour delay in issuing an evacuation order experienced during the Caldor wildfire, approximately 90% of all evacuating vehicles and their occupants would be lost under best-case conditions."

² The Risk Matrix was designed by analyzing a wide range of factors increasing the probabilities of an electrical fire risk times various areas of damage drawing upon ChatGPT-4o.

Table #2 in the Report indicates under one possible scenario of jam density and emergency warning delays that 120,000 lives will be lost. The TESA Tech Team analysis does not appear to take account of the significantly high additional risks and complications of an electrically-caused wildfire.³

4. Community Leadership Challenges (See: [Appendix B — “Wise Resilient Synergistic Leadership”](#))

Fragmentation of Authority and Responsibility. The regulatory framework governing community safety from wildfires in Tahoe, like most communities, is fragmented between various local, state, and interstate jurisdictions. The immediate and significant risks of electrically-caused and other causes of wildfires to communities within the Tahoe Basin presents a special case for active and effective collaboration among these diverse communities and with these agencies and municipalities. Below are ten recommendations that can be immediately implemented to close the gap and build community wide resilience in Tahoe under wise, resilient, collaborative, and synergistic community leadership:

1. Establish a Unified Tahoe Emergency Management Task Force
2. Implement Real-Time Traffic Management and Evacuation Simulation Tools
3. Create a Centralized Emergency Communication System
4. Designate and Upgrade Safe Evacuation Zone
5. Conduct Mandatory Community-Wide Evacuation Drills
6. Enforce Fire Safety Standards for Electrical Infrastructure
7. Develop a Special Needs Evacuation Assistance Program
8. Implement Mandatory Setbacks for Cell Towers and Critical Infrastructure
9. Increase Funding for Fire-Resilient Infrastructure
10. Foster Community Partnerships for Resilience and Preparedness

³ Casualty Estimate: The estimate of 120,000 fatalities provided by the TESA Tech Team seems extremely high, although as noted in the report it reflects a catastrophic scenario where over a week’s time a tragic number of the 300,000 daily visitors during peak tourist and fire season are unable to escape. To provide a more conservative estimate, we asked the Resilience Matrix the following question building upon its earlier analysis:

“With regard to your previous analysis of electric wildfire risks in the Tahoe Basin, please estimate how many lives may likely be lost due to a failure to recognize electrical wildfires in evacuation plans and also the fact that at least one telecom supplier is in open violation of the fire safety provisions in the National Electrical Code which almost guarantees there will be an electrical fire sometime in the near future.”

Here is ChatGPT’s reply: “Fatalities: Between 491 and 1,110 people. Serious Injuries: Between 1,473 and 5,550 people.” This estimate of course does not address the tragic situation of trapped tourists addressed in the TESA Tech Team Report. However, it does suggest the likely fatalities in Tahoe will exceed those in the 2023 Lahaina, Maui wildfire, which totaled 102.

These recommendations emphasize collaboration, proactive planning, and the integration of community resources. By focusing on these immediate actions, the Tahoe Basin can significantly improve its capacity to handle compounding fire risks, protect lives, and build long-term resilience.

Fostering Breakthroughs through Collaborative Innovation. BBILAN asked its Analytic Risk Matrix to identify breakthrough innovations in the design and implementation of an effective Tahoe Regional Fire Evacuation Plan (addressing both electrical infrastructure and non-electrical risks) that might be accelerated if the entire Tahoe community were to come together following best Collaborative Innovation and Evolutionary Synergistic Leadership Practices. Further, how much will it cost to organize and engage this Collaborative to deliver these ten breakthrough innovations and over what period of time, beginning with the most immediately achievable breakthroughs; and, finally, to estimate the value of the potential benefit streams to the entire community from these breakthrough innovations.

Here is a list of its recommendations. The details, including costs and benefits, are in [Appendix C — Breakthroughs Through Collaborative Innovation](#).

1. Smart Evacuation Route Optimization System

Develop an AI-powered, real-time traffic management system that uses data from sensors, cameras, and GPS to dynamically optimize evacuation routes, reducing congestion at choke points.

2. Community-Based Emergency Communication Network

Establish a decentralized, community-powered communication system using satellite, mesh networks, and mobile apps for real-time alerts, especially useful when cell towers fail.

3. Fire-Resistant Microgrids and Backup Power Systems

Install decentralized microgrids using renewable energy sources (e.g., solar + battery storage) to ensure critical facilities (shelters, hospitals) remain operational during fires.

4. Evacuation Infrastructure Hardening

Reinforce key evacuation routes with fire-resistant materials, clear vegetation, and improve road signage to withstand fire and smoke conditions

5. Safe Havens and Resilience Hubs

Establish strategically located, fire-resistant safe zones (e.g., underground shelters, retrofitted parking structures) equipped with air filtration, water, and medical supplies.

6. Real-Time Wildfire Monitoring and AI Prediction Tools

Use AI, drones, and satellite imagery to monitor fire conditions and predict fire spread patterns, enabling proactive evacuation orders.

7. Electrically Insulated, Fire-Resistant Cell Towers and Utility Poles
Replace vulnerable cell towers and utility poles with fire-resistant, insulated designs to prevent electrical fires.

8. Smart Homes with Integrated Fire Detection and Evacuation Alerts
Implement smart home systems that automatically send alerts to residents' devices and emergency services if fire hazards are detected.

9. Emergency Evacuation Pods and Electric Vehicles
Deploy electric vehicles and compact evacuation pods designed to navigate narrow roads and congested areas to assist with transporting vulnerable populations.

10. Collaborative Community Resilience Training Programs
Launch community-driven training and drills focused on fire preparedness, including evacuation protocols, first aid, and neighborhood safety teams.

4. Financing for Collaborative Innovation Breakthroughs

We asked our Analytic Risk Matrix to provide practical advice on how to implement a Green/Social Impact Bond Financing to support Tahoe's Wise, Resilient, and Synergistic Leadership and the Task Force and other recommendations made to establish the Tahoe Basin as the gold standard for fire safety in the U.S. Specifically, we focused on:

- How immediately to correct the deficiencies in the present Tahoe Basin Evacuation Plan by addressing the community-wide risks of compounding electrically-caused and non-electrically-caused fires; and
- To estimate the putative economic, social, environmental, health, and cultural benefit streams in Tahoe resulting from turning an immediate public safety challenge — imaginative planning for compounding electrically-caused and non-electrically-caused fires—into an extraordinary opportunity for private and public innovation that will yield significant economic, social, environmental, health, and cultural benefit streams over the next five years.

The details of implementing this evolutionary shift are contained in [Appendix D — Financing Breakthrough Innovations](#).

5. Legal Framework

In addition to these collaborative measures there are specific legal actions that will immediately reduce electrically-caused fire risks if adopted and effectively enforced.

TRPA should immediately fulfill its obligations under Article VII of the California/Nevada Interstate Compact by initiating an Environmental Impact Statement (EIS) process on the Tahoe Regional Evacuation Plan. Plaintiffs in the current litigation before

the Federal District Court, Eastern District (Sacramento) in the case *Einsenstecken et al. v. TRPA et al.* have already made the general demand for TRPA's compliance with Article VII. (See also similar requirements for reasonable precautionary environmental EIS planning can be found under Section 6.5 under TRPA Rules of Procedure, Article 3.7 of the TRPA Code of Ordinances). It is unnecessary for TRPA and other parties to wait for a decision by the federal court, as the litigation is still at an early stage of Opposition to defendant's Motion to Dismiss when the case was first filed by current plaintiffs over four years ago. An EIS process focused on the Tahoe Regional Evacuation Plan will uncover further deficiencies, which if immediately addressed will save lives and avoid further property losses.

TRPA and all regional cities should adopt the [Malibu Fire Safety Protocol](#) (MFSP) by Ordinance and regulations. The MFSP provides an important precedent now being implemented in Malibu, and if plaintiffs succeed in their present litigation, *Fiber First Los Angeles, et al. v. Los Angeles County et al.*, it will be adopted in other parts of Los Angeles County. (See [BBILAN partial victory analysis](#).)

Based on the MFSP, local communities can and should adopt specific substantive structural and design standards embodied into specific checklists which telecom applicants must complete and become basic conditions in granting use applications.

These regulations will require all cell tower applicants to confirm under penalty of perjury that they are in full compliance with the National Electrical Code; the proposed cell tower must meet all other design and structural codes pertinent to electrical fire safety.

Tahoe communities should retain the services of an independent professional electrical engineer with deep electrical fire experience to review and check all permit applications to ensure full compliance with these codes.

Local communities must be given timely notice of these permit applications and a fair and equal opportunity along with the applicants to participate in all public hearings with an explicit right to appeal to the local municipality and TRPA, and ultimately the courts, on an expedited basis.

Setbacks of at least 50 feet should be required for all new cell towers, and 300 feet for cell towers located near schools, day care centers, hospitals, and other venues requiring special care and consideration, especially during evacuations.

Special provisions in these ordinances should recognize the constitutional, civil and other statutory human rights rights protecting the most vulnerable minority and disabled members against discrimination and ensuring that these most vulnerable communities be safe and secure in their homes, workplaces, and environment. (See BBILAN Analysis:

[Legal Rights and Remedies of Minority Communities Regarding Risks of Electrical Wildfires Caused by Power Utilities and Small Cell and Macro Cell Towers](#)

Conclusion

A massive electrically-caused wildfire in the Lake Tahoe Basin is a preventable and manageable catastrophe. Lake Tahoe communities have a choice. They can passively allow a massive electrically-caused wildfire to happen, or they can take reasonable and immediate precautionary actions. Ground zero for addressing the significant risks of a major electrically-caused fire is immediately revising the present Tahoe Regional Evacuation Plan to address this significant complicating factor.

The assessment of the additional hazards to effective evacuation presented in this paper is based on a Analytic Risk Matrix developed by the BBILAN Team. It offers a tool to begin to assess and to measure the probability and likely ensuing damages ($\text{Risk} = \text{Probability} \times \text{Damages}$) of ignoring electrical fire risks as well as the benefit streams of addressing them. This is a very preliminary analysis which deserves in-depth attention with more sophisticated risk assessment methodologies. But it is a first practical step. We are challenging the prevailing premise that the risk of electrically-caused fires is so minimal that it doesn't even deserve attention at all — hence virtually zero perceived risk — particularly during evacuations. We believe this could prove a tragic error in judgment.

This memorandum also views the significant risks of electrically-caused fires, and their particular challenges during evacuation, as an opportunity for wise leadership and community-wide collaborative innovation. We have identified ten strategic innovations, estimated their benefit streams, and suggested a way to finance the program through Green/Social Impact Bonds. The success of this proposal will require an important behavioral shift away from learned helplessness and passivity toward activated civic responsibility, leadership, collaboration, and compassion. The real seismic shift is one of public consciousness: to realize that caring for the larger Tahoe community, especially for its most defenseless members, is the greatest act of self-care and self-preservation. We are the makers of our destinies.

Appendix A — Cascading Effects and Increased Risks of Electrical Wildfires

ChatGPT:

Non-electrical wildfires and electrical fires associated with power utilities and telecommunications infrastructure (such as small cell and macro towers) can indeed exhibit a negatively synergistic relationship. This means that the occurrence of one type of fire can potentially exacerbate the risk and damage caused by the other, leading to a compounded danger. Here are a few ways in which this can happen, along with specific examples:

Cascading Effects and Increased Risks

1. **Wildfires Damaging Electrical Infrastructure:**

- **Transmission Lines:** Wildfires can damage or destroy power lines and transformers. For instance, the 2018 Camp Fire in California, one of the deadliest and most destructive wildfires in state history, was ignited by a malfunctioning electric transmission line.
- **Telecommunications Towers:** Wildfires can also damage **telecommunications** infrastructure. In the 2020 Oregon wildfires, several cell towers were destroyed, causing widespread communication blackouts that hampered emergency response efforts.

2. **Electrical Fires Sparking Wildfires:**

- **Utility Equipment Failures:** Electrical equipment failures can spark wildfires, particularly in dry, windy conditions. For example, in 2019, the Kincade Fire in Sonoma County, California, was ignited by a faulty PG&E transmission line.
- **Overloaded Transformers:** Overloaded transformers or downed power lines can ignite surrounding vegetation, leading to wildfires. In 2007, Southern **California** experienced a series of wildfires, some of which were ignited by power lines downed by Santa Ana winds.

3. **Synergistic Risk Increase:**

- **Damage Amplification:** When a wildfire damages power and telecommunication infrastructure, it can lead to power outages and communication failures. This hampers firefighting efforts and emergency responses, allowing the fire to spread more rapidly and cause greater damage.
- **Risk of Re-Ignition:** Damaged electrical infrastructure can pose a risk of re-ignition even after the initial fire is controlled. For instance, downed power lines can **spark** secondary fires if not promptly de-energized and repaired.

Specific Examples

1. **California Wildfires:**

- **Camp Fire (2018):** Caused by a faulty PG&E transmission line, it destroyed the town of Paradise, caused 85 deaths, and burned over 150,000 acres.
 - **Kincade Fire (2019):** Sparked by PG&E equipment, it burned nearly 78,000 acres and led to widespread evacuations and power outages.
2. **Oregon Wildfires (2020):**
- Multiple wildfires destroyed several cell towers, leading to significant communication disruptions. This impacted the coordination of firefighting efforts and evacuation procedures.
3. **Australian Bushfires:**
- In the 2019-2020 bushfire season, several instances were reported where wildfires damaged electrical and telecommunications infrastructure, leading to prolonged power outages and communication blackouts, exacerbating the emergency response challenges.

Conclusion

The interplay between non-electrical wildfires and electrical fires associated with power utilities and telecommunication infrastructure creates a complex risk landscape. Each type of fire can amplify the impact of the other, increasing both the probability and potential damage. This synergy underscores the importance of integrated risk management strategies, including proactive infrastructure maintenance, fire-resistant designs, and robust emergency response plans to mitigate the compounded risks.

Appendix B — Wise Resilient Synergistic Leadership

Analytic Matrix Inquiry:

The regulatory framework in Tahoe, like most communities, is fragmented between various local, state, and interstate jurisdictions. The Tahoe Regional Planning Agency, local city councils, local fire departments, local sheriff's offices, and advocacy groups must align their efforts and the initial and immediate focus must be on improving the present Tahoe Regional Evacuation Plan to take account of the compounding electrical/non-electrical fire risks. This makes a special case for active and effective collaboration among these diverse communities and with these agencies and municipalities. Request: Please make 10 specific recommendations that can be immediately implemented to close the gap and build community wide resilience in Tahoe under wise, resilient, collaborative, and synergistic community leadership.

ChatGPT Reply:

Addressing the fragmentation and complexity of the regulatory framework in Tahoe to improve evacuation planning and resilience against compounding electrical/non-electrical fire risks requires a collaborative, multi-agency approach. Here are **10 specific recommendations** to close the existing gaps and build community-wide resilience. These are actionable steps that can be implemented quickly with the cooperation of the Tahoe Regional Planning Agency (TRPA), local councils, fire departments, law enforcement, and community organizations:

1. Establish a Unified Tahoe Emergency Management Task Force

- **What:** Form a task force with representatives from all relevant agencies, including TRPA, local fire departments, city councils, sheriff's offices, and advocacy groups.
- **Why:** A unified task force can streamline decision-making, ensure coordination during emergencies, and avoid conflicting protocols. This task force would focus on **enhancing** the Tahoe Regional Evacuation Plan with input from all stakeholders.

2. Implement Real-Time Traffic Management and Evacuation Simulation Tools

- **What:** Invest in simulation software to model evacuation scenarios under various conditions, including road closures, fire spread, and increased tourist numbers.
- **Why: Understanding** how traffic will flow (or fail to flow) under peak conditions can identify choke points and inform improvements to evacuation routes, signage, and communication strategies.

3. Create a Centralized Emergency Communication System

- **What:** Deploy a centralized, multi-channel alert system that uses SMS, mobile apps, radio, and digital signage to communicate evacuation orders in real time. Ensure it's accessible in multiple languages.
- **Why:** Rapid, clear communication is essential during “no notice” evacuations, especially for **tourists** and non-English-speaking residents. The system should also provide real-time updates on road closures and available exit routes.

4. Designate and Upgrade Safe Evacuation Zones

- **What:** Identify and upgrade designated safe zones within the Tahoe Basin (e.g., large parking lots, community centers, and schools) where residents and tourists can shelter if evacuation routes are blocked.
- **Why:** Safe zones can prevent panic and provide temporary refuge if evacuation is **not** immediately possible. These should be equipped with basic supplies, emergency power, and air filtration systems.

5. Conduct Mandatory Community-Wide Evacuation Drills

- **What:** Schedule annual evacuation drills during both off-peak and peak tourist seasons, involving residents, businesses, and tourists. Include scenarios for electrical fires and road closures.
- **Why:** Drills increase awareness and preparedness, helping both residents and tourists understand evacuation routes and protocols, reducing confusion during an actual emergency.

6. Enforce Fire Safety Standards for Electrical Infrastructure

- **What:** Conduct immediate audits of small cell towers, smart meters, and electrical infrastructure for fire safety compliance. Collaborate with certified electrical engineers to ensure adherence to the National Electrical Code.
- **Why:** Addressing fire risks from electrical sources is critical to preventing **compounded** wildfire emergencies. Regular inspections can reduce the risk of ignition from electrical failures.

7. Develop a Special Needs Evacuation Assistance Program

- **What:** Establish a registry for individuals with special needs (e.g., the elderly, disabled, those without transportation) and create a plan for providing targeted evacuation assistance during emergencies.
- **Why:** **Vulnerable** populations face unique challenges in evacuations. Having pre-planned assistance can ensure they are not left behind during a crisis.

8. Implement Mandatory Setbacks for Cell Towers and Critical Infrastructure

- **What:** Enforce setbacks for the placement of cell towers and other high-risk infrastructure, particularly near residential areas and evacuation routes.
- **Why:** Establishing safe setbacks can reduce the risk of electrical fires spreading to **densely** populated areas, thereby protecting evacuation routes and minimizing fire hazards.

9. Increase Funding for Fire-Resilient Infrastructure

- **What:** Allocate funds to harden critical infrastructure (e.g., underground power lines, fire-resistant utility poles, and improved road conditions) to reduce the risk of fires and improve evacuation flow.
- **Why:** Investing in fire-resilient infrastructure can prevent fires from starting or spreading, **reducing** the need for large-scale evacuations and saving lives.

10. Foster Community Partnerships for Resilience and Preparedness

- **What:** Establish partnerships with local businesses, non-profits, and community groups to create “Resilience Hubs” that provide training, resources, and support for emergency preparedness.
- **Why:** **Building** community capacity is key to resilience. Resilience Hubs can serve as local centers for information, training, and mutual aid before, during, and after emergencies.

Implementation Considerations

These recommendations emphasize collaboration, proactive planning, and the integration of community resources. By focusing on these immediate actions, the Tahoe Basin can significantly improve its capacity to handle compounding fire risks, protect lives, and build long-term resilience.

Appendix C — Breakthroughs Through Collaborative Innovation

Analytic Matrix Inquiry:

What are 10 breakthrough innovations in the design and implementation of an effective Tahoe Regional Fire Evacuation Plan (addressing both electrical infrastructure and non-electrical risks) that might be accelerated if the entire Tahoe community were to come together following best Collaborative Innovation and Evolutionary Synergistic Leadership Practices? How much will it cost to organize and engage this Collaborative to deliver these 10 breakthrough innovations and over what period of time, beginning with the most immediately achievable breakthroughs? Please also estimate the value of the potential benefit streams to the entire community from these breakthrough innovations?

ChatGPT Reply:

Addressing the critical challenges facing the Tahoe Basin—specifically, the compounding risks from electrical and non-electrical fires—requires breakthrough innovations driven by collaborative efforts. Let's outline 10 such innovations, estimate the cost to organize and implement them, and assess the value of the potential benefit streams over the next 5 years.

10 Breakthrough Innovations for the Tahoe Regional Fire Evacuation Plan

1. Smart Evacuation Route Optimization System

Description: Develop an AI-powered, real-time traffic management system that uses data from sensors, cameras, and GPS to dynamically optimize evacuation routes, reducing congestion at choke points.

Impact: Reduces evacuation times by up to 50%, saves lives, and increases the efficiency of emergency responses.

Timeline: 6-12 months (pilot phase)

Cost Estimate: \$3-5 million

Potential Benefits: \$50-75 million (reduced casualties, property damage, and economic losses)

2. Community-Based Emergency Communication Network

Description: Establish a decentralized, community-powered communication system using satellite, mesh networks, and mobile apps for real-time alerts, especially useful when cell towers fail.

Impact: Ensures communication with residents and tourists during emergencies, even if existing infrastructure is compromised.

Timeline: 6-9 months (initial deployment)

Cost Estimate: \$2-3 million

Potential Benefits: \$30-50 million (faster evacuations, reduced panic, and better coordination)

3. Fire-Resistant Microgrids and Backup Power Systems

Description: Install decentralized microgrids using renewable energy sources (e.g., solar + battery storage) to ensure critical facilities (shelters, hospitals) remain operational during fires.

Impact: Reduces dependency on vulnerable power lines, minimizes electrical fire risks, and provides resilience during outages.

Timeline: 12-18 months

Cost Estimate: \$10-15 million

Potential Benefits: \$100 million (continuity of critical services, reduced fire risks)

4. Evacuation Infrastructure Hardening

Description: Reinforce key evacuation routes with fire-resistant materials, clear vegetation, and improve road signage to withstand fire and smoke conditions.

Impact: Ensures evacuation routes remain accessible, reducing delays and enhancing safety.

Timeline: 12-24 months

Cost Estimate: \$8-12 million

Potential Benefits: \$75-100 million (improved evacuation efficiency and safety)

5. Safe Havens and Resilience Hubs

Description: Establish strategically located, fire-resistant safe zones (e.g., underground shelters, retrofitted parking structures) equipped with air filtration, water, and medical supplies.

Impact: Provides temporary refuge for residents and tourists unable to evacuate immediately, reducing panic and casualties.

Timeline: 18-24 months

Cost Estimate: \$5-7 million

Potential Benefits: \$50 million (saved lives, reduced healthcare costs)

6. Real-Time Wildfire Monitoring and AI Prediction Tools

Description: Use AI, drones, and satellite imagery to monitor fire conditions and predict fire spread patterns, enabling proactive evacuation orders.

Impact: Provides early warnings and real-time situational awareness, reducing the need for last-minute evacuations.

Timeline: 6-12 months

Cost Estimate: \$4-6 million

Potential Benefits: \$40-60 million (fewer injuries, reduced property damage)

7. Electrically Insulated, Fire-Resistant Cell Towers and Utility Poles

Description: Replace vulnerable cell towers and utility poles with fire-resistant, insulated designs to prevent electrical fires.

Impact: Reduces the risk of fires from electrical infrastructure and ensures communication continuity.

Timeline: 18-36 months

Cost Estimate: \$10-20 million

Potential Benefits: \$100 million (reduced fire incidents, uninterrupted communications)

8. Smart Homes with Integrated Fire Detection and Evacuation Alerts

Description: Implement smart home systems that automatically send alerts to residents' devices and emergency services if fire hazards are detected.

Impact: Provides early warnings, especially for vulnerable populations, reducing fatalities and injuries.

Timeline: 12-18 months

Cost Estimate: \$5-7 million

Potential Benefits: \$50 million (faster evacuations, reduced casualties)

9. Emergency Evacuation Pods and Electric Vehicles

Description: Deploy electric vehicles and compact evacuation pods designed to navigate narrow roads and congested areas to assist with transporting vulnerable populations.

Impact: Ensures safe evacuation of those with limited mobility, especially in areas where larger vehicles cannot access.

Timeline: 24-36 months

Cost Estimate: \$6-9 million

Potential Benefits: \$40 million (saved lives, reduced healthcare costs)

10. Collaborative Community Resilience Training Programs

Description: Launch community-driven training and drills focused on fire preparedness, including evacuation protocols, first aid, and neighborhood safety teams.

Impact: Empowers residents with the skills and knowledge to act swiftly and efficiently during an emergency, reducing reliance on overstretched emergency responders.

Timeline: 3-6 months (pilot phase)

Cost Estimate: \$2-4 million

Potential Benefits: \$25 million (fewer injuries, better coordination)

Organizing and Engaging the Collaborative

Estimated Cost and Timeline:

Initial Collaborative Organization: Forming the collaborative task force, engaging stakeholders, and conducting planning sessions will take about 3-6 months and cost approximately \$1-2 million.

Breakthrough Innovations Rollout: Implementing the 10 innovations will require a phased approach over 3-5 years.

Total estimated cost: \$55-90 million

Funding sources: Green/Social Impact Bonds, public grants, private sector partnerships, and federal/state funding.

Breakdown of Immediate, Mid-Term, and Long-Term Implementation

1. Immediate (Year 1):

- Smart evacuation route optimization
- Community-based communication network
- Collaborative resilience training programs
- Cost: ~\$15 million

2. Mid-Term (Years 2-3):

- Fire-resistant microgrids
- Safe havens and resilience hubs
- Electrically insulated infrastructure
- Cost: ~\$30-50 million

3. Long-Term (Years 4-5):

- Real-time wildfire monitoring tools
- Smart homes and evacuation pods
- Comprehensive infrastructure hardening

- Cost: ~\$20-30 million

Estimated Value of Potential Benefit Streams Over 5 Years

Economic Benefits

- Reduced property damage: \$500-800 million from improved fire prevention and faster evacuations.
- Tourism growth: \$200 million from increased safety reputation and visitor confidence.
- Job creation and local investment: \$100 million from construction, technology, and training programs.

Social and Health Benefits

- Lives saved: Potentially 500-1,000 lives saved due to faster evacuations, better communication, and resilient infrastructure.
- Reduced injuries and healthcare costs: Savings of \$100-150 million in medical expenses.
- Community resilience: Strengthened social cohesion and reduced psychological trauma.

Environmental Benefits

- Forest preservation: Preventing wildfires can save thousands of acres, with a long-term environmental value of \$200 million in ecosystem services.
- Reduced CO2 emissions: Lower fire incidence can reduce carbon emissions by 100,000 tons over 5 years.

Cultural and Community Benefits

Enhanced community pride and cohesion: The Tahoe Basin can become a national model for climate resilience and fire safety, attracting new residents and investors interested in sustainable living.

Total Estimated Benefit Stream: \$1.2 - 1.5 billion over the next 5 years

By leveraging collaborative innovation, Tahoe can transform its fire evacuation challenges into a beacon of resilient community leadership, delivering substantial economic, social, environmental, and cultural value while safeguarding its residents and natural beauty.

Appendix D — Financing Breakthrough Innovations

Analytic Matrix Inquiry:

- 1. Provide practical advice on how to go implement a Green/Social Impact Bond Financing to support Tahoe’s Wise, Resilient, and Synergistic Leadership and the Task Force and other recommendations you are making in establishing the Tahoe Basin as the gold standard for fire safety in the U.S., focused immediately on correcting the deficiencies in the present Tahoe Basin Evacuation Plan by addressing the community-wide risks of compounding electrical and non-electrical fires.**
- 2. Estimate the putative economic, social, environmental, health, and cultural benefit streams in Tahoe resulting from turning an immediate public safety challenge—imaginative planning for compounding electrical and non-electrical fires—into an extraordinary opportunity for private and public innovation that will yield huge economic, social, environmental, health, and cultural benefit streams over the next 5 years from this “evolutionary shift.”**

ChatGPT Reply

To address the urgent safety concerns in the Tahoe Basin, while simultaneously fostering long-term social, environmental, and economic benefits, implementing a **Green/Social Impact Bond (GSIB)** financing approach could be highly effective. Let’s break down how to implement this strategy and estimate the potential benefits it can generate.

Part 1: Implementing a Green/Social Impact Bond Financing Strategy

A. What Are Green/Social Impact Bonds?

Green Bonds: These are debt instruments specifically issued to fund projects with positive environmental outcomes, such as infrastructure improvements, sustainable energy projects, and disaster resilience.

Social Impact Bonds: These are performance-based bonds where investors provide upfront capital to finance projects with measurable social outcomes, like community safety, public health, and emergency preparedness. Investors are repaid based on achieving specified social impact metrics.

B. Practical Steps to Implement a Green/Social Impact Bond for Tahoe

Step 1: Define Clear Objectives and Scope

Immediate Focus: Improving the Tahoe Basin Evacuation Plan to address compounding electrical and non-electrical fire risks, with a particular focus on protecting vulnerable populations and enhancing infrastructure.

Long-term Goals: Establishing Tahoe as the gold standard for fire safety, resilience, and sustainability in the U.S., positioning it as a model for other regions.

Step 2: Form a Collaborative Task Force

Involve Key Stakeholders: Include representatives from TRPA, local councils, fire departments, utilities, community organizations, private sector investors, and advocacy groups.

Purpose: The task force will oversee the bond’s implementation, track progress, and ensure that projects are aligned with both environmental and social objectives.

Step 3: Conduct a Feasibility Study and Cost-Benefit Analysis

Assess Funding Needs: Estimate the total funding required to implement the recommended safety upgrades, evacuation improvements, infrastructure hardening, and community engagement programs.

Identify Potential Investors: Target both institutional investors (e.g., pension funds, banks) and impact-focused investors who prioritize social and environmental returns.

Step 4: Structure the Bond

Bond Issuance: Work with financial advisors to design the bond terms, including maturity dates, interest rates, and impact targets. These may include specific metrics such as reduced evacuation times, improved fire response capabilities, and reduced casualty rates.

Performance Metrics: Establish clear, measurable outcomes (e.g., successful evacuation drills, reduced infrastructure fire risks) that trigger payments to investors.

Step 5: Secure Government and Private Sector Support

Incentives: Leverage tax incentives, grants, and public-private partnerships to attract investment. Engage with federal and state agencies for matching funds.

Community Buy-in: Run outreach campaigns to build community support, highlighting the social and environmental benefits of the bond-funded projects.

C. Example Projects to Be Funded

1. **Upgrading evacuation routes and digital signage.**
2. **Implementing centralized emergency communication systems.**
3. **Fire safety audits and infrastructure hardening.**
4. **Establishing safe zones and resilience hubs.**
5. **Special needs evacuation programs and community drills.**

Part 2: Estimating the Economic, Social, Environmental, Health, and Cultural Benefits Over 5 Years

Implementing a comprehensive plan to address the compounding fire risks in Tahoe can create significant positive outcomes across multiple dimensions. Below is an estimate of these benefits:

1. Economic Benefits

Tourism Recovery and Growth: By establishing Tahoe as the safest and most resilient fire-adapted community, tourism confidence will increase. Assuming a 10% annual growth in tourism due to safety enhancements, the area could see an additional **\$100-150 million in annual tourism revenue**.

Increased Property Values: Safer communities attract real estate investment. A conservative estimate could see **5-10% increases in property values**, contributing to an economic boost of **\$500 million to \$1 billion** over 5 years.

Job Creation: Infrastructure projects funded by the GSIB can create **thousands of jobs** in construction, technology, and emergency management, leading to an estimated **\$200 million in direct economic impact**.

2. Social Benefits

Enhanced Community Safety: The improved evacuation plan and communication systems will save lives, especially among vulnerable populations, reducing potential casualties by **80-90%** in worst-case fire scenarios.

Social Cohesion and Community Resilience: Investing in community-driven emergency preparedness programs strengthens social bonds and fosters a culture of collective resilience.

3. Environmental Benefits

Fire-Resilient Infrastructure: Upgrading infrastructure to be fire-resistant (e.g., underground power lines, fire-resistant materials) reduces the risk of wildfires, potentially saving **thousands of acres** of forest and reducing carbon emissions by an estimated **50,000 tons annually**.

Biodiversity Preservation: By reducing fire risks, the plan helps protect the unique ecosystems of the Tahoe Basin, preserving habitats for countless species and supporting long-term ecological health.

4. Health Benefits

Reduced Health Risks from Fires: Addressing toxic smoke and fumes from electrical fires reduces respiratory issues among residents. A potential **30-40% reduction in fire-related hospitalizations** could save **\$20-30 million** in healthcare costs annually.

Mental Health and Well-being: Reducing the fear and anxiety associated with fire risks will improve the mental health of residents, especially those with past trauma from fires.

5. Cultural and Community Benefits

Preservation of Community Identity: Protecting the natural beauty of Tahoe safeguards the cultural heritage and identity of the region, which is central to its tourism appeal.

Public Trust and Leadership: Establishing Tahoe as a model for fire safety and community resilience will build trust between residents, authorities, and businesses, fostering a strong sense of civic pride.

Projected 5-Year Benefit Stream Summary

Benefit Category	Estimated Impact
Economic	\$800 million - \$1.3 billion
Social	Reduced casualties, increased safety & cohesion
Environmental	50,000 tons CO ₂ emissions reduction annually
Health	\$100-150 million in reduced healthcare costs
Cultural & Community	Strengthened identity and community resilience

Conclusion

By leveraging Green/Social Impact Bonds, Tahoe can transform its immediate safety challenges into a groundbreaking model for sustainable, resilient community planning. This initiative not only addresses the urgent risks but also unlocks long-term benefits across economic, social, environmental, and cultural dimensions, setting the Tahoe Basin up as a leader in innovative disaster preparedness.

About the Author

Julian Gresser is an environmental and public interest attorney and co-founder of the non-profit Broadband International Legal Action Network ([BBILAN](#)) which is supporting various individuals and organizations within Tahoe to restore reasonable balance in the development of its telecommunications infrastructure. BBILAN is organizing a National Coalition on Electrical Fire Safety; and to support the Coalition is offering a [Resilient Communities Leadership Course](#) to equip leaders and advocates with legal templates, along with training and personalized coaching in essential skills of leadership, collaboration, resilient negotiation, supported by innovative uses of AI, to meet the challenges described in this article. 100% of the registration funds raised will be used by BBILAN to coordinate the Collaborative on a local Tahoe level as well as the

National Coalition. 10% of these funds will be allocated to scholarships to enable those who lack financial means to register for the program.

From: jmtornese@aol.com <jmtornese@aol.com>
Sent: 11/19/2024 11:22:30 PM
To: Public Comment <PublicComment@trpa.gov>
Subject: TRPA Amendments to Code of Ordinances - RPIC Agenda Item No. 3
Attachments: [TRPA.Housing.RPIC.FOWS.comments.11-19-24.docx](#)

To: TRPA Regional Plan Implementation Committee

Please accept the attached comments from Friends of the West Shore for the RPIC agenda item 3, proposed Chapter 13 amendments to the Code of Ordinances.

Thank you,
Judith Tornese, President
Friends of the West Shore



November 19, 2024

To: TRPA Regional Plan Implementation Committee

RE: RPC Agenda, Item No. 3, Amendments to TRPA's Code of Ordinances, Chapter 13

On behalf of Friends of the West Shore, the following comments are presented regarding the Tahoe Regional Planning Agency's (TRPA) amendments to Chapter 13 of their Code of Ordinances. **Please DO NOT approve these amendments**, for the following reasons:

1. These proposed code changes to allow increases in height and density have not been sufficiently vetted with the public. There have not been any community hearings on this specific topic of making these amendments to Chapter 13 of the Regional Plan.
2. These are significant amendments that require the identification, evaluation & analysis of these changes and the resulting impacts. The environmental checklist is not sufficient. Under CEQA rules, an EIR/S is required using current conditions.
3. These proposed amendments will promote more growth. Lake Tahoe does not have the capacity to absorb more people during peak visitor periods. The EIR/S must consider:

- the Evacuation Study provided by Tahoe Clean Air Coalition and how higher density and population will impact public safety during a wildfire evacuation
 - capacity study of Lake Tahoe's infrastructure and its ability to handle more people
 - the cumulative impacts of the projected increase in housing
 - traffic increases and congestion on highways 89, 128, 267, 50 and 431.
 - Other affordable housing options should be presented and evaluated, such as improved control and reduction of short-term rentals. use of subsidized housing and land trusts.
 - other environmental impacts and concerns, such as view corridors and parking analyses
4. the need for assurances and enforcement to guarantee that the increase in housing will actually be affordable.

Please make this email part of the records and minutes in connection with the TRPA review of these proposed amendments. Please also include by reference the 11/19/24 comment letter from Tobi Tyler of the Sierra Club.

Please DO NOT APPROVE these amendments! Thank you for considering these comments.

A handwritten signature in black ink, appearing to read "Judith Tornese", written in a cursive style.

Judith Tornese, President

Friends of the West Shore

