



Associated Aerial Firefighters

Promoting Safety, Efficiency and information about aerial fire fighting

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Dear Sir:

We have recently become aware of the Fountain Wind Project Proposal and hope the Planning Commission and Board of Supervisors will consider our comments as they directly affect the safety of our pilots, several communities and the forests in your county. This appears to be a very unsafe proposal to adjacent communities and aerial firefighters. Our organization, The Associated Aerial Firefighters provides a forum to advocate for safety, effectiveness, and efficiency in wildland aerial firefighting.

Aerial firefighting in and around wind turbines presents a set of unique challenges that are problematic to say the least. As a Forestry Airtanker Pilot for more than thirty years I have worked fires at Altamont pass and in Tehachapi pass. The strategy employed in both cases was to not use fixed wing airtankers in the turbine fields at all except around the borders and only occasionally within the field when a window of opportunity presented itself. This tactic was sometimes used to try to slow the spread when the risks to the aircraft and the towers were acceptable. These opportunities were rare and rarely effective. At Altamont we almost always stopped the fire after it burned completely through the field usually at highway I-5. Except for one occasion when it spotted across the highway exposing about a mile of parked cars on the road to a burn over.

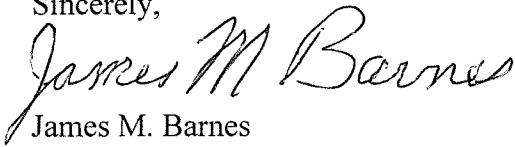
At Altamont and Tehachapi most of the turbine field was contained within light flashy fuels such as vast stands of grass lands. The proposed Fountain Project would be located in an area containing large stands of pyrophoric fuels such as chaparral, manzanita, digger pines and mixed conifers. The heat generated by such a fire, especially if it is wind driven, would be significantly greater than the heat produced by a fast-moving grass fire. This would pose a greater risk to ground Firefighters because of the lack of ability to provide them effective air support and the adjacent homesteads surrounding the communities of Round Mountain, Montgomery Creek and Hillcrest. The threat of fatal damage to the tower structures is also worthy of consideration. Not only because of material losses but as an additional hazard that could endanger Firefighters on the ground.

Before such an installation is contemplated, extensive plans to modify and remediate the fuel load and create a system of fire breaks would be imperative to have any success in effectively fighting a fire in or near the turbine field from the ground. Safety zones and fire breaks would have to be part of the equation for any ground firefighting operations.

High towers and high winds are a situation that shouts watch out when it comes to aerial firefighting. At winds above 30 knots, airtankers operations would be suspended but even winds below that flowing through the high towers would generate eddy currents that would contribute greatly to the danger for aircraft trying to conduct retardant or water drops within or above the turbine field. Typical drop altitudes are 150ft above ground and a bit lower crossing a ridge top. A state investigator member of our organization who has been involved with over 200 fatal and serious injury aircraft accident investigations advises that these structures over 600' scattered over 30 thousand acres and poor visibility from smoke would be a "prescription for a fatal accident. From an airtanker pilot's point of view, fighting such a fire would be a no-win situation.

Please consider our thoughts as your review this proposal.

Sincerely,

A handwritten signature in cursive script that reads "James M. Barnes". The signature is written in black ink and is positioned above the printed name.

James M. Barnes
Associated Aerial Firefighters

Land Planning Commission and Board of Supervisors:

My “extensive comments” from the DEIR remain the same as they never were properly considered or addressed, and I am still insisting they are part of the legal and administrative record in their entirety. I also wish to include comments I sent in January and the presentation I gave to Director Hellman, the Asst. Council to the County, and the outside legal representation. The County has a copy of this presentation (at least the slides from Powerpoint, if not my words, but I will keep a copy of my words in my possession if needed for the legal record). I will try not to be repetitive though I will have to since clearly whoever responded to them did not understand them and dismissed them.

I will give a straightforward summary/outline of the problems so that the main issues are actually read, though all are still found in my DEIR and never addressed. As I see this has a high probability of making its way to the courts if approved, I also realize there is no point wasting more time. If my original comments fell on deaf ears, so will these. I have a Master’s Degree in Disaster and Emergency Management and wrote my thesis on the Fountain Fire. As the EIR often states, my credentials and knowledge should “speak for themselves.” Apparently, such knowledge about the fire the project is named after is unimportant. It does not even warrant more than the average individual to speak more than 3 minutes at the planning commission’s public hearing. I am curious why three attorneys representing the County listened to me for 90-minutes a couple of weeks back but why I am not allowed to speak longer at the public hearing: what is it that you don’t want me to say?

There are two sentences about the fire that pervade the analysis. First, the name of the project is obscene and exploiting. What kind of honor is that to the horror thousands went through? Second, the DEIR says the Fountain Fire destroyed 600 homes and burned 64,000 acres. It failed to mention that 63,000 acres burned in just 33 hrs, at one point moved nine mph, burned 2/3 of the structures in one day, at a rate of 105 football fields a minute, and burned at what may still be a record 12 miles in 3 hours through heavily forested timber. It instantly moved to the top five fires in California history, where it remained until the end of 2020. At the time, it also set records for retardant dropped and costliest suppression efforts. The fire danger has not changed. Those conditions, topography, and climate that made it move that fast are the very things that make this project unsafe and the potential to be catastrophic.

When the DEIR quotes CALFIRE saying fire in this area will be worse and more destructive, it means a lot of deaths are going to occur. They were spared miraculously once by the old logging roads and sheltering in place in meadows while 2,000-degree heat, 300 ft high flames, and buildings exploded around them. They had no other choice, nor did the firefighters, since flames covered both sides of 299E almost immediately. The ridge behind those and the meadow and the logging roads (now gated) – they will now be covered with turbines – flame throwers. It does not matter if they start the fire or fire hits them; the results will be the same. It will be more catastrophic than the last one – which is hard to beat. The County is already pushing its luck with Hatchet Ridge and has had a few near misses. One just this past week. During the Fountain Fire, Round Mountain burned to the ground in 1 hour; next time, it will be

much faster with the turbines. Ground firefighters and aerial firefighters will be affected – lie to yourselves if you need to sleep better at night, but it's true. Those working can't say it for fear of repercussion. They have to keep in line with what the state wants.

The fire hazard cannot be mitigated to less than significant. The plans are improperly deferred to the future when the fire “speaks for itself” and demonstrates how infeasible evacuations and other plans will be. Like the thousands of different plans that were mitigation plans before the Carr and Camp Fire, or PG&E's that have recently been dismissed in court. Their plans are thousands of pages long; yours ignores fire completely. Do you think yours will withstand the test; of course not; you say you rely on PG&E's mitigation and vegetation plan as part of why fire is less than significant. Good luck with that.

My extensive comments were a thesis of sorts. It may have looked like I was grasping for straws. But they all pointed to one argument; I just never told you what it was because I hoped that those working on the FEIR had integrity. It appears not so they unwittingly only supported my argument or “thesis.” The argument – they can't be trusted. They were hiding and omitting things. I can't trust months or years of another document being released because it was so blatantly displayed no one contributed to it that can be trusted. I pleaded, begged, showed them, and I was dismissed as one commenter reading the final says, all were, like an ignorant child. Not only that, it borderlines on defamatory unless that is “protected speech.” How nice if ruining someone's expertise and reputation blatantly displayed in an official government publication for the world to read is.

Main Problems:

These include but are not limited to:

1) Fails to meet CEQA Standards, other California laws adequately and to be an informational document to anyone. These include but are not all the violations:

- A) Fails to meet legislative intent of CEQA 21000 and 21001
- B) Does not provide meaningful public discourse CEQA 21002.1(e)
- C) Violates Government Code 65000 et seq

The memo written on what constitutes a “turbine” was not for anyone other than the Board of Supervisors to interpret the code as was consistency with the general plans

D) Ignores CEQA 21061.1. FEASIBLE “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account **economic**, environmental, **social**, and **technological factors**.

- E) Improperly defers mitigation and studies until after approval

F) Violates CEQA 21082.2 dismissing substantial evidence provided by others without providing their own substantial evidence to ignore it – only their “profession experience,” aka opinion.

G) Improperly identifies and excludes alternatives based on the County’s narrow interpretation of the project’s objectives and not CEQA’s standard set in 15124 and 15126

H) Improperly explains cumulative effects; groups climate change with the baseline

I) Improperly refers to many mitigation features as special “design techniques.”

2) Fails to provide a proper risk analysis, baseline, or performance standard for most subjects of the EIR and their mitigation reports. It especially ignores the risk of wildfire and the lessons learned from the FOUNTAIN FIRE and proper mitigation, if any is feasible. (I strongly urge at least reading the section on the Fountain Fire in the Appendix Below section 6)

A) No true wildfire history “pervaded the analysis,” specifically the Fountain Fire

i) It was a miracle anyone survived the fire – they won’t with this project

B) No Risk Analysis or Baseline Performance Standard to apply to most sections

C) Impacts are incorrectly concluded due to lack of proper risk analysis or baseline performance standard.

3) Lacks professionalism, shows utter disregard and disrespect to both government agencies, organizations, and individuals who commented on the DEIR and undermines the report's integrity as it appears incredibly biased. Just compare the report to Tierra Robles to see how poorly this area was unequally treated. It also calls it to question the competence of those who wrote the response as they often don’t recognize quotes taken from the DEIR itself or explicitly cited sources. This is highly apparent in response to members who will bear the brunt of the project's harmful effects. In many places is possibly defamatory or bordering defamatory in reactions to at least myself.

A) Comments are dismissive and not substantiated with any evidence

B) They appear to demonstrate the respondent’s inability to understand citations or arguments and instead dismisses them outright to ignore responding to them

C) Bias is exposed by the objectives they chose described on 2-126

D) Bias exposed by simply comparing the quality of Tierra Robles EIR to this EIR or basically any EIR.

E) *Silences* the voices whose opinion should matter the most – those who survived the fire and are traumatized by it, not those who are placed to profit.

F) Comments borderline or are possibly defamatory to multiple people/agencies, but responses to me are quite clear how the respondent(s) feel about me personally, which could affect the judgment of my character if answers are not viewed alongside what I wrote.

4) Often contradicts itself and the DEIR.

A) One Example: No need to understand PG&E's problem yet on 2-166 state they rely their fire safety on PG&E's Wildfire Mitigation and Vegetation Management.

i) Ironically, PG&E's plans were recently ruled inadequate, inefficient, and do not demonstrate success, relying on improper baselines.

5) As the names of the commissions on Hurricane Katrina and 9/11 describe those two catastrophes, this is a ***complete failure of imagination and INITIATIVE***. Reading the report gives the reader the impression that this is all butterflies and rainbows, a done deal, and that nothing can go wrong. This gives an entirely ***false sense of security*** to the public and the decision-makers. Sadly, the things that give a "false sense of security" in emergency management are often the things that lead to the most catastrophic disasters. They are not black swans, nor are they white swans – they are gray rhinos.

A) One hazard is studied per impact, ignoring any other possible impacts as "unfounded" or improbable giving an incomplete analysis.

B) This lack of insight will lead to substantial fiscal costs in the future to the County, its taxpayers, the State of California, and the Country that will overwhelmingly wipe out any perceived "financial benefit."

C) Grey Rhinos: defined as "highly foreseeable events with catastrophic consequences."

i) fires are common in forests

ii) wildfires start by lightning strikes

iii) Wind turbines attract lightning; the lightning might not hit the turbine. What good are your sprinklers, fire extinguishers, and SCADA data, then? Wind turbines are structures. Structure fires are fought differently than forest fire. Why don't we see the same firefighters responding to office buildings as we do forest fires?

iv) knowing a fire started does not mean you can respond if you don't have the resources to respond

v) aerial firefighting will either not happen or be extremely limited, with most homes and lives unprotected. Ground crews will not approach within a safe distance

vi) Emergency Managers are taught to think like terrorists – there is a reason for this. To understand what is most vulnerable. Have you seen what happened when the turbines froze in Texas, the pipeline that was hacked, or the meat supplier? What happens if a terrorist hacks into the office building Ibedrola has in Oregon that monitors millions of SCADA? I assume they will monitor this data, too, along with all the turbines in the U.S? You can take down the entire U.S. grid and cause wildfires or whatever havoc you wish if you can do that.

vii) It does not matter if the turbines start the fire or a fire approaches the turbines... the effects will be the same and worse than if they were not there.

There is only one option – deny the project. With the incompetency, lack of due diligence, and public trust violations rereleasing it or redoing it will solve these three problems or taken seriously. A rerelease and more years of this project will only add to the trauma this County and Applicant have already caused those who survived the fire. Public trust and the responses to the comments were too flagrantly violated to trust any further information provided or that the applicant will be held to any standards set forth by mitigation plans and plans improperly deferred.

Sincerely Annoyed,

Kelly Willett Tanner

Kwillett2@hotmail.com

Board of Supervisors, Director Hellman, and Land Planning Commissions-

My name is Kelly Tanner, and I live in Round Mountain, California, where my family has owned the land since the 1930s and lived permanently since the 1970s. If you have any questions or comments, please contact me at kwillett2@hotmail.com. I feel it is my responsibility to write this letter concerning the Fountain Wind Project. I am incredibly concerned. I believe the County is rushing into development in the hope of increasing tax revenues while ignoring the most crucial function they have – public safety. First, I will explain I strongly object to the project and have left plenty of comments for the Land Planning Department and their consultants to review. Second, and more importantly, I have a Master's Degree in Disaster and Emergency Management. My thesis was on the Fountain Fire, which the project has the audacity to name the Project after. It is deeply offensive and insensitive. However, given that I have likely done more research than anyone else on the Fountain Fire, as I covered it broadly, I am very troubled with the ramifications and public safety hazards that will result if approved. I strongly urge you to stop wasting your time, money, and resources further in this process as there is ample support from public documents, newspaper articles, California Commission Reports, information gathered for my thesis, and regarding turbines themselves. I also would encourage you to redo, review and take time to understand Emergency Management. If you cannot, find someone who can. Just one fact that you can learn is that for every \$4 spent on mitigation saves \$1 when a disaster strikes. The Carr fire cost \$1.6 billion; imagine the cost that could have been saved. But even more important, imagine the number of properties, lives, survivors' emotional well-being, and structures that could have been saved?

I apologize for the length; please take the time to read through this, especially what California has said about the power grid in this EXACT area and the information I provide about the Fountain Fire. I have the understanding to make an expert judgment about this. In Emergency Management, past disasters are considered better for planning than any arbitrary data as most disasters occur in the same place. The challenges for a location are specific to that location. My main points discuss the Fountain Fire; specifically, Transmission Line reports done by the State of California in this area, the importance of forests in carbon sequestration, and the need to address them. I understand the cost can be staggering, but developing projects that will likely lead to wildfire or, at some point, be exposed to wildfire will also be staggering. The impact will not just be financial, but it will potentially kill people.

A wildfire in this area after the development of this project will not be able to be fought by air. The images below show the difficulties of aerial firefighting. Though I did not think to take a picture, I am standing directly next to part of the ridge where this proposed development will be. You can see how low that aircraft was; it was mere feet above the ridge and had to descend to reach the fire quickly. This fire was in 2018, the same day the Carr Fire was burning. It was located approximately 2 miles from the proposed site. Without aerial firefighting, this fire would have escaped and not been contained to 50 acres.



Some of this information is in my DEIR comments, but unfortunately, I could not get as detailed as I would have liked on wildfire, as I was forced to consider all sections of that report. This wasted my professional judgment and academic background. Please take time to read the comments I provide carefully.

Unwittingly paved the way for disaster

The Peshtigo Wildfire of 1871 was the deadliest in US History. Estimates of deaths from that fire are between 1,500 – 2,500. The failure of timber companies to appropriately deal with waste as they rushed to be the first to expand the expanding railroads and development in the West combined with winds that had gusts of 110 mph became the spark – sound familiar with the PSPS shutoffs today? The area was forested and not much different than many of the timber production forests in California. Years later, one of the Timber Companies Owners stated, "***But in our best efforts to better our position... we unwittingly paved the way for disaster.***" More recently, Dr. Chauncey Starr, Dean of the School of Engineering and Applied Science at the University of California, Los Angeles, wrote a paper discussing the rapid adoption of new technology. He stated, "Engineering developments involving new technology are likely to appear in many places simultaneously and to become deeply ingrained into the systems of our society before their impact is evident or measurable... Thus, we now face a general situation in which widespread use of a new technological development may occur before its societal impact can be properly addressed" (as quoted by Palmer, 2018).

It appears that the Fountain Wind Project and the rush for sustainable energy if placed in unsuitable areas will also "unwittingly pave the way for disaster." The forest, its dry vegetation, and complex terrain make wind turbines more costly and less efficient. No disrespect to Mr. Hellman and Kerns County (the Capital of Wind Turbines) but this area is not the same as Kern County. Projects that work there will there not work as well here and vice versa. Once this type of project is implemented, the damage is done, and it cannot be reversed despite whatever the consultants are telling you.

Yet, as some of you may know, it will also destroy the most valuable carbon storage available. This carbon storage for California is vastly located in this area. The soils and trees in this area can much more efficiently offset carbon emissions than any manmade effort to do the same. The project also provides all of the perfect ingredients to create a fire. Since Wind Energy has no regulatory agency, the number of incidents, safety problems, and fires is wildly misrepresented (upon request, I can send all of my citations, thesis, and other valuable documents). I know for a fact from a report I found that Hatchet Ridge and multiple problems that the County seems to have been completely unaware of – it is attached to my comments on the DEIR. The County's ignorance concerning such issues also concerns me about the mitigation plans set forth – as they seem meaningless if they are not complied with, reported, or left to the developer or project owner to follow on their own.

Here are just three examples of wildfires caused by turbines or the construction process. The turbine companies did not report these but the newspapers.

However, multiple examples are in newspapers all over the world. Just a couple of examples include:

July 23rd, 2018 – Ontario Canada: An ATV during the construction phase caused a 27,700-acre wildfire. Workers noted that management encouraged blasting 2 to 3 times a day preceding these fires, and a few smaller fires had started but able to be put out. However, this blasting continued during Canada's equivalent of a Red Flag Warning – such activities should not have occurred.

During 2010 – Hatchet Ridge: Located near the Fountain Wind Project, at least two fires that fortunately were quickly handled. These fires started just before the completion of construction of that project, according to *The Record Searchlight*.

June 12th, 2012- Near San Diego: Wind Turbines were responsible for a 367-acre wildfire. The Fire Chief noted rings around the turbines, but this did little to stop the fire from reaching dry, flammable terrain. They were able to get that fire out as quickly as they did because of its proximity to a Freeway, which made it visible to those driving, and they were able to call it in.

According to a wind manual out of Europe, "A fire in a wind turbine can lead to the situation, that burning elements, which fall down, can cause a secondary fire on the ground where the tower is located. These circumstances can result in a forest fire, difficult in some cases to be extinguished. Very often, long distances between the wind energy plant and the fire station and the strong wind prevailing in these places are both factors that can promote the quickly spreading of forest fires... fire brigades do not have any chance to fight a fire at wind turbines if the nacelles or rotors are affected... With respect to the fires that have occurred so far, the firefighters' work has been restricted to the projection of the location of the fire and the prevention of secondary fires on the ground or at adjacent installations" (Wind Turbines Fire Protection Guideline CFPA-E Guideline No. 22:2012 F)

Wind turbines make firefighting difficult and life-threatening to firefighters on the ground and complicate or restrict aerial firefighting altogether. The CDC noted that 20% of all aerial firefighting fatalities resulted from obstructions in their way. Thus, it can start fires in multiple ways and also hinders the ability to fight them. In forests that are more than apt to burn, this is a catastrophe waiting to happen. I have talked to multiple fire battalion chiefs and aerial firefighters that said they would not allow their firefighters to fight such fires. They would be ordered to stand down and wait until the fire burned itself at the turbines. Simultaneously, fire embers will be shooting off the turbines much further than the ring around them and into dry forests. Those in charge of aerial firefighting have expressed similar statements. There will be too many turbines between the two wind projects and will create too much turbulence, regardless of whether the turbines are active. Though the simple act of shutting the blades down can also cause sparks.

Today the Air Fight has become one of the most vital tools in firefighting and preventing them from destroying structures; this project will likely take this tool out of their arsenal for use.

The Fountain Fire

That fire is a predecessor to the fires that are now occurring in California. At the time – it seemed to be an outlier. Today it looks as if it only was a preview of what was to come. I likely have done more research on the overall impacts of that fire and did hundreds of hours of research combing through every newspaper article I could find (local and nationally), examined the congressional hearing on the fire, and the few academic papers about the fire.

The Fountain Fire exemplifies how areas thinned for biomass allowed the fire to drop to the ground from the crowns and then went back into the crowns immediately after leaving those areas. The trees were scorched but did not die. The pinecones survived and were able to drop and naturally help with the natural regrowth of the forest. Another success story in the fire's aftermath includes the private timberland owners' efforts and small landowners who worked together to replant much of what was destroyed, including 15 million seedlings within five years of the fire. The replanting efforts recovered 99.2 percent of the carbon emissions that fire released. My grandpa was one of those who used most of the insurance money he received to replant his 160 acres.

The emissions released with the Fountain Fire and three other wildfires that year equaled the addition of seven million more cars on California roads – to offset would be the equivalent of parking 50% of California cars in their garage for a year (Bonnicksen 2008). 2018 released the number of emissions that are released by powering all California homes for a year! This year's staggering number of acres will have released much more than that. As of September, an estimated 90 million Metric Tons of emissions have been released in the 2020 fire season. That is more emissions than all of the transportation industry and more than all of California's power plants. Rob Jackson, professor at Stanford University and Chair of the Global Carbon Project, said, "We need to rethink wildfire prevention and do more to slow the effects of record fire seasons that are the new normal" <https://qz.com/1903191/western-wildfires-are-producing-a-record-breaking-amount-of-co2/>

Narrative of the Fountain Fire and Key Statistics

Before there was the Carr Fire in Shasta County, there was the Fountain Fire. At the time, it seemed an outlier. Many involved in fighting that fire had never seen such extreme fire behavior before- something echoed numerous times in the past few years as fires have become more destructive. It immediately took its place on CALFIRE's list of California history's topmost destructive fires, claiming the fifth spot. When I wrote my thesis in 2016, it still ranked ninth on that list (Tanner 2016). As of September 27, 2020, it is now somehow still holding spot 20 (https://fire.ca.gov/media/11417/top20_destruction.pdf). Today (1/25/21), it is no longer on the list as this wildfire was one of the worst in California history. The fact that the Fountain Fire was on this list and for so long is significant because of how rural it is. While wildfires burn more acres in rural areas, they destroy fewer homes because of population density in these areas. This fact should not be overlooked! It also shows how in just four short years, 9 fires were more destructive than this one. The Carr fire is 9th, and the Jones Valley Fire is 15th on CALFIRE's most destructive fires. You would think that 3 of the most destructive wildfires in California

state history occurring in just this County would be enough to take the threat seriously – it does not appear to have done so.

Record-Setting Fire Behavior, Response, and Destruction

The Captains and Director's Speak:

Dave Mack, Chief Director of the Forestry Department, "... *the most incredible burning situation many of us have ever seen.*" (Sugg 1992)

Chief Stewart of the Shasta Trinity Unit "... *most extreme, bizarre, and awesome fire in my 35-year career.*"
(Barkdull, 1993)

Captain Mark Nelson "... *there's no stopping it... It's doing what it wants to do.*"
(Bancroft & Lempinen, 1992).

- Became the 5th out of 20th most destructive wildfires in state history
 - Was 16th in 2016 and still holds the 20th spot as of 9/27/20
- Traveled **12 miles in just 3 hours** – thought to be a record pace at the time and still likely one of the quickest spreading fires in State history - spotting occurred 2 miles ahead

In Perspective

- The Camp Fire (2018), thought to be one of the fastest moving fires at its peak, burned **80 football fields a minute** (Verzoni 2019).
 - Converting the Fountain Fire into Football Fields would have meant the Fountain Fire burned **105 football fields a minute**.
 - The Creek Fire in the Sierra National Forest on Labor Day 2020 left hundreds of campers stranded and needing to be rescued by helicopter. "Fire officials said they had never seen a fire move so fast in forestland – 24 km(14.91 miles) in a day" (Associated Press 2020).
 - The Fountain Fire traveled 12 miles in 3 hours.
 - The Carr Fire's fastest spread appears to have occurred between July 27 and July 28 – burning approximately 35,000 acres in a day
 - Between 10:30 and 7:00 PM on August 21st, the Fountain Fire was estimated to have destroyed between 40-45,000 acres (Burkdull 1993).
- It took 20 minutes for the first Engine to reach the remote area, and the place the fire broke out was on accessible roads, not the logging roads that are even further away from fire departments and roads that are anticipated to be built for this project (though aircraft arrived sooner)
 - 300 ft. high flames



Figure 1 Fountain Fire from SopperWheeler.com

- Created a weather system detected by weather radar in Medford, Oregon – produced a 25,000-foot cloud, produced multiple lightning strikes and soaring winds between 50-70 mph, and spawned fire tornadoes.
- Less than one hour after it was spotted, the fire shifted directions every 10 to 15 minutes and had changed direction by 90 degrees. Smoke was blowing sideways, reducing visibility for both air and ground operations (California Department of Forestry and Fire Protection SHU-4733, 1992d).
- Firefighters described seeing **fire tornadoes**- a damage assessment team who walked the area after the fire found 36-inch diameter trees not burned but snapped in half. (Holquist, 1993; California Department of Forestry and Fire Protection SHU-47333, 1992d)
- Numerous times firefighters had to drop hoses and run; 2 of the Mendocino Hot Shots at one point were surrounded by flames. They took the "... quickest escape route to the highway, sliding down the nearly vertical slope" of Hatchet Mountain (Lemos and Ward, 1992).
- Destroyed 50% of the homes in Round Mountain, including destroying Cedar Creek Elementary School's Cafeteria (the school is now closed due to those who had to move after the fire and the drop in property taxes)
 - 40 out of 60 homes at Moose Camp destroyed
 - 2/3 of total structure loss occurred during the 1st day
- \$86 million in fruit orchards destroyed
- Roseburg Timber reported damage to enough timber to build 50,000 homes, \$362 million board feet. It burned 10 million trees, which would have exceeded \$1 billion of future board feet (California Department of Forestry and Fire Protection's Response to the Fountain Fire, 1993).
- Herds of Swine and Cattle had been wiped out and potentially take 100 years to replace the loss (Jenkins and Lemos, August 28, 1992)
- In just five days burned an area twice the size of the city of San Francisco
 - 7,500 people were evacuated, some twice, when the fire quickly encroached on the evacuation shelter set up in Burney approximately 22 miles from the center of Round Mountain.

- 307 homes destroyed along with another 267 other buildings in 5 days (end total over 600) (Bowman & Hayward, 1992; Hayward & Vogel, 1992; Wallace, 1992)
- Destroyed 37 businesses and damages exceeded \$105 million (Rural Fire Protection in America Steering Committee 1994)
- 1,000 of the acres burned included known habitat for
 - Northern Spotted Owl- 1 Nest
 - 2 Osprey Nests
 - 1 Goshawk Nest
 - Elk Calving area
- Infrastructure Destroyed
 - 300 PG&E Wooden power poles
 - 169,000 Ft of telephone lines
 - 300 Hwy Guardrails
- The salvage process killed three and seriously injured 2 (Jenkins 1992d; Jenkins 1993)
- Hundreds of thousands of gallons of retardant dropped, setting records at the time
 - The first day 180,000 Gallons of Retardant
 - The second day 214,000 Gallons of Retardant
- Only evacuation route cut off – many residents had to use old logging roads by older residents familiar with them (most of those who knew the roads are now dead and logging roads now gated). Others who were trapped had no choice but to sit it out in meadows and ponds. (Not the distance of Frisby Road off of Terry Mill Rd where many sheltered in place in meadows is only 3.3 miles from Buzzard Roost Rd, and the start of Frisby Rd only 0.4 miles from 299 E – but they could not evacuate using 299E. This testifies to how fast this fire spread).



Figure 2 Terry Mill Rd - Logging Road - One of the only ways out since 299E was cut off in both directions

- \$22 Million cost to fight the fire – a record at the time
- Burney – where people had evacuated to, had to be evacuated again by the end of the second day. Burney had already been threatened by a wildfire just two months earlier and had close calls four times in 15 years.

Firefighting Problems/Evacuation Problems

One of the biggest problems firefighters had was that they simply did not have enough resources to fight the fire. The State was already battling multiple wildfires throughout the State. A problem that is worse and worse every year. This problem has only increased in recent years, with larger and more destructive wildfires each year. On the 3rd day, only 1,600 firefighters were battling the fire – 10% of what actually was needed – the others were assisting on other fires. By day 5, there were 600 new firefighters from the prison inmate crews, 60 additional fire engines were en route, along with 100 Bureau of Indian Affairs Firefighters from Arizona and about 2,000 federal personnel. (Huber; Gottlieb and Robitaille, 1992). The Millville Fire Department could have responded in 25-30 minutes and was equipped with special equipment. They could have sprayed at least some of the homes and protected them from the flames to the dismay of the Fire Chief there, Devon Tassen – they were never asked to respond.

On the first day, a five passenger helicopter attempting to warn people of the impending fire spotted a group of people sheltering in a meadow (at the end of Frisby road mentioned above). They only had enough time for one evacuation and could only take three people. The pilot had no way to request assistance to evacuate the rest of the group because all radio channels were already being used. The rest of the group would have to wait it out in heat estimated at 2,000 degrees and smoke so thick those there struggled to breathe. Firefighters could not reach the group until 10:00 PM that night as they watched the firestorm destroy 15 buildings, 1,100 acres of pasture, and 700 acres of timber and watched as the extreme winds blew the rooftop off of barns (Winship, 1992). Those who could escape were forced to be creative as SR 299; the only evacuation route was surrounded on both sides by flames. They had to caravan behind older residents, like my grandpa. He knew the old logging roads well enough to lead them out of the narrow mazes on rough dirt logging roads that would have quickly left many trapped and lost if they had attempted to go down the road themselves. This is no longer an option. Most of those familiar with the roads are now dead, and even if they were not – the roads are now gated off. Blocking the only other chance to leave if SR-299 is once again cut off by flames. (Sadly, these harrowing events are becoming more and more common throughout California. The Camp Fire illuminated this problem, as did the Carr Fire. But more recently, the Zogg Fire also demonstrated how difficult it is to evacuate from areas that rely on one main road in and one main road out.

Volunteer Fire Departments

Two main fire departments are located near the project site. The CALFIRE Hillcrest Station is staffed seasonally for fire season and the Montgomery Creek Volunteer Fire Station (I believe their budget is \$2,000). Though the County as a whole does have a battalion, as noted, those resources are spread out over the battalion's entire jurisdiction. Since other fires, both locally and statewide, can strain resources (which was the case during the Fountain Fire), actual knowledge of these two departments' capabilities would be helpful. Also, since Hillcrest is only occupied seasonally, they would not be able to respond to fires at the Project Site that occur off-season.

However, according to a Shasta County Grand Jury Report in 2011/2012, Shasta County allocates 385 volunteer firefighter positions for 19 different stations from my own research. The

BOS partially or fully disagreed with some of the findings. In response specifically to funding on Shasta County's Fire protection system and that a failure to adequately fund it could result in loss of life/property, the County stated that it would be "too cost-prohibitive" (Shasta County Grand Jury 2012). Well, here is your chance – if it was too cost-prohibitive to address the fire system, then you do not need more ignition points and a project that will make it even more cost-prohibitive.

An article in The San Francisco Chronicle stated that at the time of the Carr Fire (2018), the County only had 149 out of 385 volunteers on the roster (Guitierrez and Cassidy 2018). In personal communications with the Shasta County CAL Fire Headquarter on October 2, 2020, the official rosters now contain 144 volunteers with only 17 volunteer stations and **only seven** volunteer firefighters listed on the Montgomery Creek Volunteer Department Roster. Though it is uncertain how many of those seven are current or able to respond. This would significantly impact their ability to respond to fire from different phases of this project, including any accidents and fires within the Turbines themselves. Since volunteers also have other jobs, all seven volunteers will not be there at all times and possibly be an hour or more away if they work outside the area. Since Hillcrest is only fully operational seasonally, the Montgomery Creek Volunteer Fire Department would be the first to respond in the off-season.

This is not just a local problem but a nationwide and statewide problem. In the past three decades, volunteer firefighters have fallen by 10 percent over the past three decades even though emergency calls have tripled. Even more significant, one-third of all firefighters in California are volunteers in rural areas such as this project site. (Guitierrez and Cassidy 2018).

The Grand Jury also addressed the fire problem in Shasta County more recently in July 2020. It's number one finding "***Fire fuel management for the prevention of wildfires in Shasta County has not been a top priority for far too long, due to lack of funding, and limited manpower leading to a higher risk for the wellbeing of Shasta County***" (Shasta County Grand Jury 2020). There is no justification for increasing fire risks given this knowledge.

Further complicating the situation is the dangers that already face rural residents in high fire risk areas. The Fountain Fire, Carr Fire, Camp Fire, the Bear Fire, and Zogg Fire of this year demonstrate these risks without facts and statistics. The number of lives lost is devastating. The areas impacted reflect the same problems that exist in the area near this project site. But if those examples are not enough to convince you a real problem exists that will be further complicated by this project and that existing issues need to be addressed (and included with Baseline conditions), first consider these sobering facts.

- Rural communities with populations below 2,500 are twice as likely to die in a fire as people living in communities with populations of 10,000 to 99,999.
- Rural homeowners suffer more than twice the property loss from fire each year
- In 1992, nearly one-fourth of all firefighter deaths at the actual site of a fire occurred at uncontrolled wildland fires – all of those who died were volunteer firefighters.

- Responders to the Fountain Fire included 400 volunteers from Shasta County, Burney Volunteer, and Montgomery Creek Fire Departments; at the time, Montgomery Creek was staffed by 13 volunteers (though they were allowed 20, they had a hard time recruiting) with an annual budget of \$4,500. Equipment included one water tender, one rescue vehicle, two fire stations, and a 20x30 mile fire district. The majority of their calls included medical calls; they had no Hazmat Response capability. The nearest capability was 100 miles away in Chico (National Associations of State Foresters Review) (remember staffing in Shasta County for volunteers is now 144 and only seven are at the Montgomery Creek Fire Station). Can the EIR confirm this is actually adequate to address the hazards for a project of this size and scale when climate change has made conditions more conducive to ignite fires and have led to them being larger and more destructive? (Rural Fire Protection in America Steering Committee, 1994)

Sadly things haven't changed for those living in rural areas. A study done by The National Fire Protection Association confirms what both the Shasta Grand Jury and the article in the San Francisco Chronicle found: volunteer rates are declining, and the age of volunteer firefighters are increasing.

1. Volunteer firefighters are becoming harder and harder to find - rates for joining have declined significantly

Rate of Joining Volunteer Fire Departments per 1,000			
	Years	Rate	
	1988 to 1994	7.45	
	1995-2001	7.13	
	2002-2008	7.13	
	2009 to 2015	6.66	

*Numbers from NFPA Journal July/August 2017

2. Number of Fires

Fires per 1,000 People	
Communities 1 Million or more	3.1
National Average	4.5
Population less than 2,500	10.8

*Numbers from NFPA Journal July/August 2017

3. Number of Deaths

Deaths per Million People	
Population 1 Million or More	6
National Average	10.9
Population less than 2,500	20.9

*Numbers from NFPA Journal July/August 2017

4. Age of Firefighters

The study found that 42% of volunteers have been with their department for more than ten years, while 10% had been with their departments for only one year. (Verzoni 2017).

Sadly, for those who survived the Fountain Fire, their future looks bleak. One newspaper article reported that up to 90% of the population affected by the Fountain Fire relied on some public assistance, and approximately three-fourths of the homes destroyed were not insured (Calvan, 1992b). This situation is likely not much different today than it was then, as insurance is even harder to find for those who can indeed afford it in high-risk fire areas.

Fire, Emergency Plans, and evacuation routes are Lacking

I cannot understand how almost 30 years after this fire, nothing has been done to address the problem that exists here or the evacuation problems faced by this County in General. The area around the Fountain Wind Project is extremely limited in options for evacuation. I am disturbed that the County DEIRs/EIRs/Mitigation Monitoring plans fail to evaluate CEQA properly. I understand the element of wildfire is new to the requirements of CEQA. However, too often, the consultants use one random word out of an impact, evaluate that one little detail, and then claim that it does not have a significant effect disregarding all other parts of the impact. This isn't very ethical.

Here are sample thresholds the County chose to use in evaluating wildfire risk. The standards applied are somewhat insulting, having a graduate degree in Emergency Management and having done extensive research on wildfires.

There are no actual thresholds of significance, only broad statements. There is no reasonable way to determine whether a threshold is met as there is no measurable threshold to compare it against.

1. What "substantially impair[s] an adopted emergency response plan or emergency evacuation plan?"

Courts say "substantial is an improper standard. "The Definition of substantial effect effectively limits significant environmental impact..." "The proper standard... is considerably broader. The use of an erroneous legal standard is a failure to proceed in the manner required by

law that requires reversal.” (*Endangered Habitats League, Inc. v. Rutter Development Inc., Real Party in Interest 2005*).

2. How was it determined what environmental or project elements expose occupants to pollutants or uncontrolled fire spread?

3. What would require installing or maintaining the associated infrastructure that can exasperate risk or result in temporary or ongoing impacts?

4. What is considered a significant risk that exposes people or structures to landslides, post-fire instability, etc.?

As you can see, the thresholds provided are general and open for interpretation. There is not one quantifiable measure to hold anything up to see if it complies. In “SANDAG they concluded that a lead agency abuses its discretion if it exercises it in a manner that cause an EIR’s analysis to be misleading or without informational value... A lead agency cannot avoid finding a potentially significant effect by rotely applying standards of significance that do not address the potential effect” (*Rominger v County of Colusa*). The criteria above allow the County and the planner to meet the standards by merely defining them however they wish. However, it also allows them to provide no information or support because they can simply state these things cannot occur. Without those four thresholds defined or explored further in the analysis, this can’t be an informational document. It is improper to defer these definitions for later discussion AFTER certification. It also undermines the point of CEQA.

The courts say, “An EIR is inadequate if ‘the success or failure of mitigation efforts, may largely depend upon management plans that have not yet been formulated and have not been subject to analysis and review within the EIR” (*San Joaquin Raptor Rescue Center v. County of Merced* quoted by *Preserve Wild Santee v. City of Santee*)). In another case, the court ruled “placing the onus of mitigation to the future plan and leaving the public ‘in the dark about what land management steps will be taken, or what specific criteria or performance standard will be met” (*Communities for Better Environment v. Chevron Products Company et al., Real Parties in Interest and Appellants, 2010*). This is exactly what has been done here, as most of the plans are left to be made after project certification. “An EIR is inadequate if ‘ the success or failure of mitigation effects, may largely depend upon management plans that have not yet been formulated and have not been subject to analysis and review within the EIR... The fact that the City and wildlife agencies must ultimately approve the habitat plan does not cure these informational defects” (*San Joaquin Raptor Rescue Center v. County of Merced* quoted by *Preserve Wild Santee v. City of Santee*).

It is absurd to conclude that “for these reasons, the proposed Project would not impair and would be consistent with the County’s EOP and EF4 regarding fire detection, control and suppression efforts within the jurisdiction.” This is an astounding conclusion! Yes, treatments can slow the rate of fire spread, reduce fire intensity, and modify behavior, but treatments (which have not even been established or plans to maintain) do not possibly illustrate that plans are not interfered with. If this were the case, 90% of the current EOP should be thrown out, and

everything I have learned about wildfires and Emergency Management is rendered useless. Someone should ask for their money back on the EOP as it is 184 pages long.

The wildfire section does not include California's EOP or FEMA's, or all of the other National and Regional plans that deal with Wildfire, all of which are applicable as their purpose is to allow interagency cooperation to be streamlined and easy to adopt. The very brief summary of what the Shasta County Emergency Operation Plan is and its purpose enables you to mislead the public. Nowhere in this section does it refer back to other important aspects of Emergency Planning. For example, "Historically, 80% of the burden following a disaster has fallen on the public, with a disproportionate burden placed upon vulnerable populations. For emergency planning purposes, children, elderly adults, the disabled, people whose primary language is not English, and low income residents are considered vulnerable populations..." and "18% of the total civilian non-institutionalized population is considered to be disabled. Approximately 12.6% of all families and 17.6% of the total population within the County had incomes below the poverty level. (Shasta County EOP 2-2). Where in this document does it discuss any of this? These demographics are important to understand and develop proper mitigation and emergency response plans and even reflect on their feasibility.

The EOP also states, "The County has not defined its core capabilities **in accordance with the National Preparedness Goal** or undertaken a **formal capabilities assessment to date.**" First, I'd ask why not; how many federal disasters have this County declared? How long do you plan on putting that off? In other words, the County has no idea what its capabilities to respond to an emergency are. That in itself impedes the plan because you cannot reasonably understand whether you can comply with a plan if you do not know what you need or have to respond to it. The development will only add to the lack of understanding concerning capability or needs. Of course, no development with the County can impede this plan because there is no understanding of what is needed or what can be done. There is no knowledge of feasibility. The plan also requires identifying critical infrastructure to allow for continuity of services; where is this?

The EOP assumes key assumptions – here is a couple. 1. "Local emergency planning efforts focus on accommodating residents while preparing for changes in population trends throughout the year. However, significant increases to the local population may introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster" 2.9-10). In other words, keep building more developments like this, and you will overwhelm emergency response. 2. All or part of the County may be affected by environmental and technological emergencies. How is it demonstrated it doesn't affect these items?

These are the County Emergency Services areas and how the County EOP defines them. The five principles are the foundation of Emergency Management: prevention, protection, mitigation, response, and recovery. 1. **Prevention**: To avoid, intervene, or stop an incident from occurring in order to protect lives and property 2. **Protection**: To reduce the vulnerability of Critical Infrastructure and Key Resources by deterring, mitigating, or neutralize terrorist attacks, major disasters, and other emergencies. 3. **Mitigation**: To comprehensively reduce hazard related losses with the goal of ensuring the safety and security of citizens, infrastructure

protection, and economic stability. 4. **Response**: To address the short-term and direct effects of an incident, including immediate actions to save lives, protect property, and meet basic human needs. 5. **Recovery**: To restore vital services; personal, social, and economic wellbeing of citizens; and communities to pre-event or updated conditions. Showing that an infeasible mitigation measure without any enforcement or assurance it will be adopted; is only one example of whether or not it affects mitigation. To honestly assess the EOP and demonstrate a good faith effort, multiple mitigation measures should have been stated, and they should address all five areas. The plan is not up for interpretation, and the standards of those five mission areas are outlined not just at the County level but at the NATIONAL level.

To truly understand whether this impedes operational impacts, a current operational standard or timeline would need to be known. You cannot merely state, without evidence, that there is no effect on the operational timeline. None of the information tells me how quickly anyone can respond or how firefighters can do their job. How, then, can one determine if the operational timeline will be affected? The only thing emergency responders can tell you is that the more cars and people in harm's way, the slower response will be. The only thing this does tell me is that whatever "professional judgment" applied here is irrelevant to Emergency Management and Emergency Planning. I wonder why they offer programs in Emergency Management and Planning if regular management and planning principles apply. Perhaps, the County should review how they do Environmental Reports with the new guidelines by CEQA because the professional judgment used here shows ignorance and a lack of understanding of what is needed and what the basic principles of an EOP are. How possibly can you make a judgment on whether it impedes a plan if you have no idea what one is?

An excellent start to finding information on all five areas of an emergency operation plan would be to look at past wildfires in the area, and there have been many. Then analyze what problems occurred in all five areas. It is a guarantee that there were problems in all five areas because even the best plans cannot know all of the factors that will be present when a disaster or wildfire strikes.

Evacuation

Sadly, this project was not even given any analysis on evacuation. I would say this needs to be addressed with or without this project. Recent studies that included the Carr Fire include information on logistics during an evacuation. This is what the study found concerning the Carr Fire.

There are numerous studies on wildfires and evacuation. One study studied evacuation and communication about evacuation during 2017-2019 in California. This study included both the Camp and Carr Fires. This study not only confirms that Paradise had evacuation plans that were restricted but also stated that "... people were forced to drive on road shoulders to avoid the flames and sometimes to escape on foot" (Wong; Broader; and Shaheen, 2020). The documents and information are available to you about MULTIPLE recent smaller fires and the larger fires that would have illustrated such problems.

The evacuations study contains pertinent information about wildfires in Shasta County, including evacuations and communicating evacuation orders concerning the Carr Fire. They found that Fire responders CAUSED congestion on significant evacuation routes, not just those evacuating. They also found that only 25.6% of respondents did not make an extra trip before finally evacuating. What does that mean? Once they found out they needed to evacuate, almost 75% of evacuees made between 2-5 trips on these roads before evacuating. 48% made at least one extra trip before evacuating, and 26.4% made between 2 additional trips and more than 5! These extra trips could be due to helping others evacuate, collecting supplies, or a wide range of reasons.

Further, 20.5% of those evacuating the Carr fire towed large items. Towed items could include trailers with property, animals, or RV's towing their cars. This number was much larger than the areas studied that were more urban, where 6-10 percent towed things. The discrepancy likely can be accounted for due to those living in rural areas having animals, RVs, trailers, and other equipment they may be trying to get out of the fire's path. Further, between 21.5% to 33.5% found evacuating carless populations was not effective (Ibid).

The Community Planning Assistance for Wildfire done for Redding (which I would highly recommend the County to do their own) discusses many inadequacies with the Redding Plans. These same inadequacies can be found within the County's plans. The inability to create decent plans puts the public at risk and allows developers a free card to do whatever they want. Here are the three main findings on plan deficiencies for Redding.

1. No plan currently provides the level of comprehensive and detailed planning required for wildfire to be addressed in the city. (I concur for the County as well – it is admitted so in this section of the report when it says capacity has never been identified).

2. The CWPP planning process is underutilized. (For reference, this is the COUNTY CWPP plan, and I am sure the same could be said of the County).

3. Plan linkages are inconsistent. Finally, while some of the city's plans connect, others do not. For example, the General Plan Health and Safety Element and the recently adopted REU Wildfire Mitigation Plan both reference the Local Hazard Mitigation Plan; similarly, the Local Hazard Mitigation Plan references the General Plan. None of these plans is linked to the Shasta County CWPP or Shasta-Trinity Unit Strategic Fire Plan. (I believe the same could be said of the County as well. Those reference an evacuation plan when there is none that I could find).

(Wildfire Planning International, LLC Wildland Professional Solutions, Inc., 2019)

Here are the findings from the most recent Grand Jury Report:

FINDINGS

F1. ***Fire fuel management for the prevention of wildfires*** in Shasta County has not been a top priority for ***far too long, due to lack of funding, and limited manpower leading to a higher risk for the wellbeing of Shasta County.***

F2. Fire Fuel management is an ongoing process that requires maintenance of previously completed projects so regrowth remains manageable.

F3. Shasta County Fire Department is unable to thoroughly identify defensible space and fire fuel management infractions due to understaffing. Absentee landowners and non-complying landowners stretch the limited law enforcement officers' resources.

F4. A structure in the Wildland Urban Interface (WUI) has an improved chance of withstanding, or not igniting a wildfire when defensible space requirements are practiced.

F5. There are elderly, disabled and other at-risk people living in the WUI **who need physical or financial assistance to achieve a proper defensible space and decrease their personal risk as well as risk to their neighbors.**

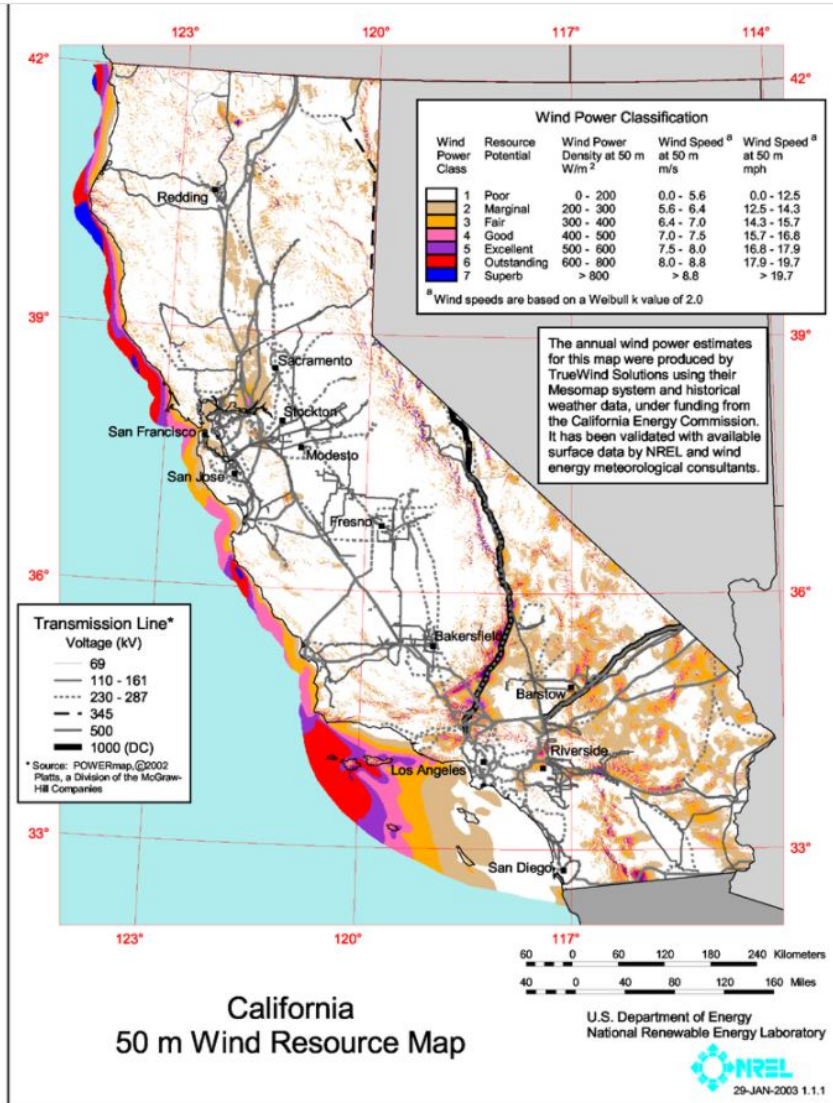
F6. Some members of the public may be ***misinformed*** from time to time by the media and social media about fire fuel management and defensible space re42 The project provides landings and shaded fuel breaks for fire suppression activity along a 21 mile stretch of Highway 44, through Shingletown, from Dersch Road to the Lassen National Forest Boundary. A progress report (February 14, 2020) indicated 800 acres have been treated. Spring vegetation treatment and some pile burning had yet to be completed as of March 21, 2020. The project was extremely well planned and executed by SCFD/CDF. The purpose of the project is to July 1, 2020 Grand Jury Report requirements, ***leading to confusion resulting in a lack of compliance and support.***

F7. There are fewer volunteer organizations available, than in previous years, to assist the “at- risk” community with defensible space maintenance, making that community more vulnerable.

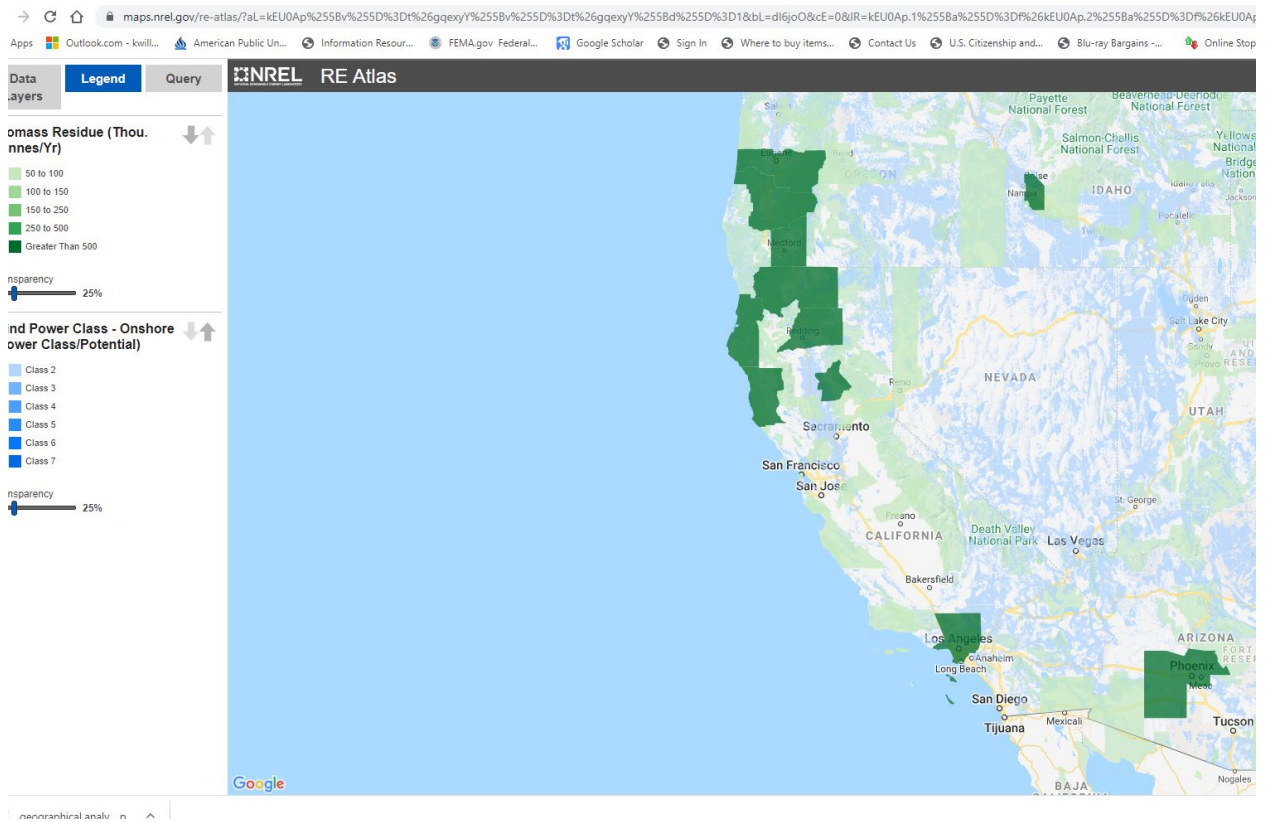
F8. Inmate fire crew reduction due to AB109 and the inability to use off-season volunteer fire- fighters, due to their limited fire fuel management training, has resulted in a lack of man- power available for fire fuel management projects (Shasta County Grand Jury 2020).

Rush for Renewable Energy

Renewable energy is essential to the environment; however, California needs to do it responsibly! Jackson's quote is pertinent here – we need to do more to rethink wildfire prevention, including not putting renewable energy projects where it may exasperate the risk. The National Renewable Energy Laboratory has released multiple maps and data that demonstrate the areas that are best for different types of renewable energy. Here are two of their maps:



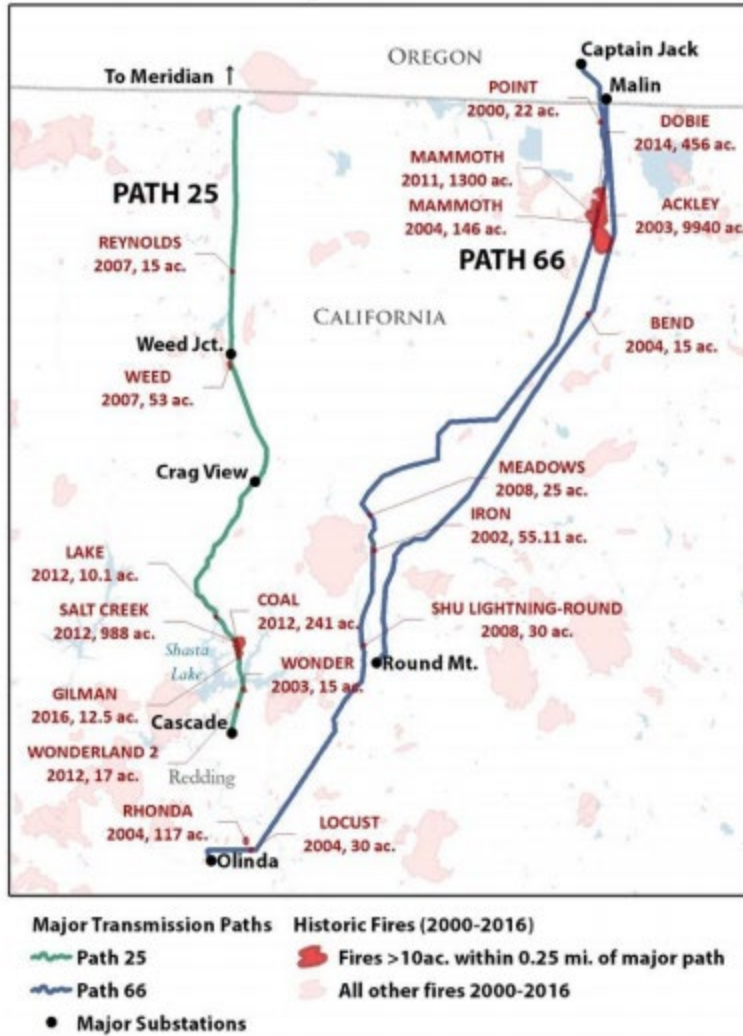
This map shows that wind production in Shasta County and much of the North State is Poor to Fair at best. Yet look at the maps they release for biomass for the same area. Suppose California and this County is truly serious about its goal to preserve timber and soils that sequester carbon, lessen the severity of wildfires, and take advantage of renewable energy resources. In that case, they need to be strategic about it. Imagine the waste of using Wind where it is not as productive as it could be elsewhere; thus, eliminating the option for biomass in doing so or even other activities that may help achieve a healthier forest.



It is counterproductive to the Renewable Energy goals of California. California and Shasta County need to be smart and strategic about where clean energy is positioned to provide optimal results. The State cannot just throw Renewable energy projects anywhere, just for the sake of renewable energy. We need to preserve our resources and take advantage of optimal places for different renewable energy types. Not doing so can lead to unknown effects that will not present themselves until the future. As Chauncey warned or as the Peshtigo survivor said – we may unwittingly set ourselves up for catastrophe to better ourselves.

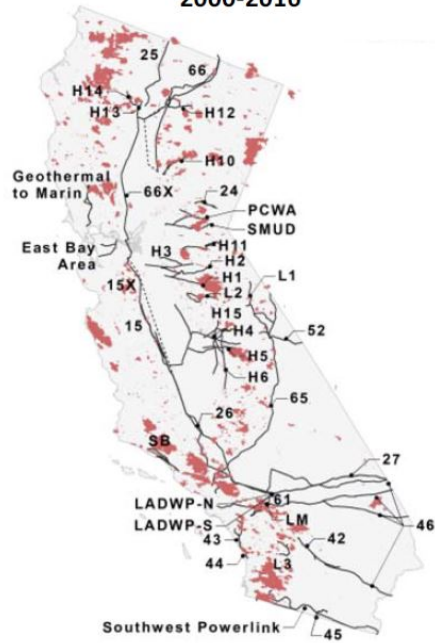
Transmission Lines

There is no need to discuss the problems PGE and our electric grid have in detail – the PSPS and many reports out there are visible and known to everyone. However, California studied transmission lines that they felt were particularly important to California's power grid. They did not investigate these lines' role in starting fires but rather the proximity (at least within a quarter of a mile of the transmission lines) and the damage done to transmission lines by wildfire. Notice Path 66 is one of these lines – this goes directly through the Fountain Wind site, but both path 25 and Path 66 travel through very wildfire-prone areas. In the subregion, including these two high power transmission lines, over 100 wildfires occurred between 2000-2016. Nineteen of these wildfires approached within a quarter-mile of these lines causing the transmission lines to be turned off and disrupting power reliability and power far away from the wildfires' location.



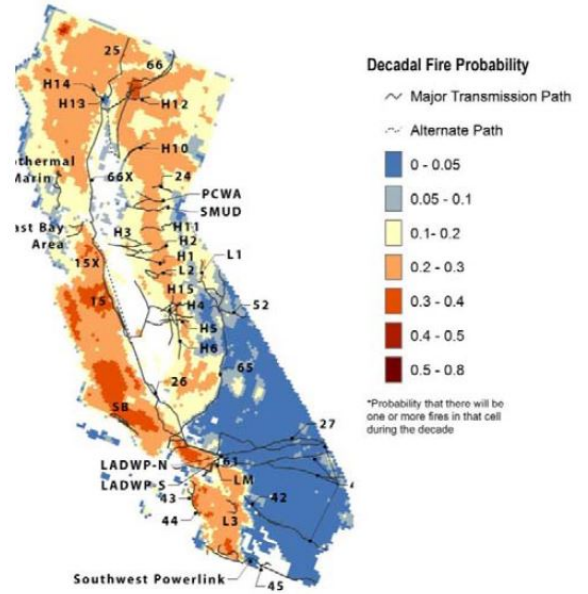
The maps and graph below show the fires near specific powerlines and how experts anticipate climate change to increase the number of wildfires between 2040-2049. Respectively, Line 66 and H12, which connect directly to the Fountain Wind Project area, are suspected of increasing wildfires between 46% and 75% within a quarter-mile of these lines. They used multiple models to get an average of these lines. Looking at just path 66, they calculated the cost of stopping service along these lines (this does not include damage done to them). They estimated that only a 24-hour disruption of service along this path would cost between 1 and 2 million dollars, while an outage of 2.5 days along path 66 would cost 3.9 million dollars.

**Historic Fires
2000-2016**



Source: FRAP 2017

**Modeled Fires
2000-2009**



Source: Westerling, 2018 CANESM2 RCP8.5 model

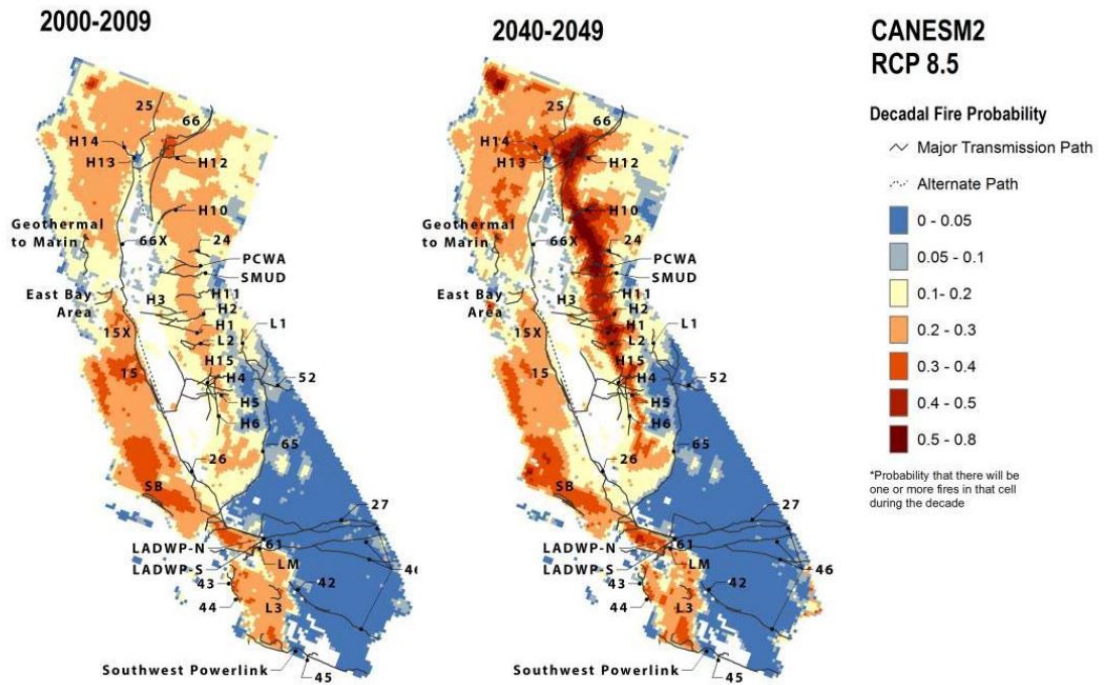


Figure 8: Projected Change in Future Fire Risk

Ultimately, the report commissioned by California concluded that these types of transmission lines should be buried or not built-in high fire-prone areas. This conclusion is staggering, knowing how expensive burying these lines cost. Yet, they felt economically it would cost more to leave them exposed to wildfires than burying them except for a couple of the lines they studied (Dale, L.; Carnall, M.; Wei, M.; Fitts, G. and McDonald, S.L., 2018).

Table 8: Projected Change in Transmission Path Fire Risk

Path ID	Area (cells)	2000-2009		2040-2049		Change	
		Expected number fires	Fires per Cell Area	Expected number of fires	Fire per Cell Area	Expected number of fires	Change Number fires (%)
WECC Paths							
15	120	27	0.23	21	0.18	-6	-22%
24	44	8	0.18	11	0.25	3	38%
25	29	6	0.21	8	0.28	2	33%
26	72	15	0.21	14	0.19	-1	-7%
27	48	1	0.02	0	0.00	-1	-100%
42	15	0	0.00	0	0.00	0	0%
43	26	6	0.23	5	0.19	-1	-17%
44	12	3	0.25	3	0.25	0	0%
45	1	0	0.00	0	0.00	0	0%
46	445	10	0.02	8	0.02	-2	-20%
52	30	2	0.07	1	0.03	-1	-50%
61	3	0	0.00	0	0.00	0	0%
65	88	7	0.08	5	0.06	-2	-29%
66	106	24	0.23	35	0.33	11	46%
15X	52	12	0.23	11	0.21	-1	-8%
66X	97	16	0.16	25	0.26	9	56%
Non WECC Paths							
EastBayArea	23	4	0.17	4	0.17	0	0%
GeothermaltoMarin	68	11	0.16	14	0.21	3	27%
H1	30	6	0.20	9	0.30	3	50%
H10	72	16	0.22	32	0.44	16	100%
H11	29	5	0.17	10	0.34	5	100%
H12	58	16	0.28	28	0.48	12	75%
H13	18	2	0.11	3	0.17	1	50%
H14	13	3	0.23	4	0.31	1	33%
H15	18	4	0.22	5	0.28	1	25%
H2	38	6	0.16	9	0.24	3	50%
H3	46	8	0.17	11	0.24	3	38%
H4	22	3	0.14	4	0.18	1	33%
H5	22	4	0.18	4	0.18	0	0%
H6	119	19	0.16	25	0.21	6	32%

The Proposal

California needs to consider in its rush to renewable energy away to be consistent with their bills. In Emergency Management, a very short window of opportunity exists to get disasters and mitigation on the public policy agenda. The recent deadly and destructive wildfires of recent years have done that. In an amendment to AB 901 – Wildfires, it delegates the State Board of Forestry and Fire and the Fire Warden to create new rules on undeveloped ridgelines by July 1st, 2021. This regulation provides a perfect opportunity to prohibit risky projects that increase the risk of wildfires like wind turbines and instead take advantage of biomass and thinning that create healthier forests. It is recognized in Emergency Management that every \$1 spent on mitigation equals \$4 spend on recovering. That is huge savings. This year's wildfires will cost over 2.05 billion dollars. Proper mitigation could have made the price tag closer to 500 million dollars. That is a substantial amount of savings. But imagine how much higher the price tag would be if wind turbines and their infrastructure had burned. Again, using Fountain wind as an example, the proposal includes 72 turbines over 600 feet high, 12 miles of transmission lines,

a switching station, a collection station, and an O&M facility. It is already right next to the Round Mountain Substation and within 2 miles of Hatchet Ridge. If a fire were to impact the Fountain Wind project, it would be highly probable all the infrastructure associated with Hatchet Ridge, the substation, and miles of high power transmission lines would increase the costs astronomically.

The effects of wind projects, however, go far beyond that of fire and expense from wildfire. When these projects are in areas that store carbon, they take that carbon storage away. The emissions they promise to omit are negated by the amount of carbon wasted in the damage down to the soil in the construction of roads, facilities, and turbines and cutting the forests in the area. Let me provide an example.

AB32 is the bill used for Greenhouse Gas Emissions and Climate Change; it states creating carbon sinks in forests is vital. "Forest management practices set by the state can maximize the potential for the forests to absorb carbon, while at the same time increasing timber yields" (Sacramento Area Council of Governments, 2015.) California forests store 85% of Carbon Stock in California. Fountain Wind's goal is to offset 128,000 metric tons (assuming it operated 100% of the time). Of course, wind power depends on factors out of our control, and statistics show that 25% of nameplate capability results from wind projects, not 100 percent. That means this project only can offset 35,000 MT. But the inability of it to do what it promises is beside the point here. The project will take more carbon storage than it will offset – defeating the entire purpose.

Consider this, "There are approximately 5,340 million metric tons (MMT) of ecosystem carbon in the carbon pools that CARB has quantified. (To put it into context, 5,340 MMT of carbon in the land is equivalent to 19,600 MMT of atmospheric CO₂ currently existing as carbon in the biosphere and pedosphere as carbon cycles through the Earth's carbon cycle.) Forest and shrubland contain the vast majority of California's carbon stock because they cover most of California's landscape and have the highest carbon density of any land cover type. All other land categories combined comprise over 35% of California's total acreage, but only 15% of carbon stocks. Roughly half of the 5,340 MMT of carbon resides in soils, and half resides in plant biomass" (CARB 2018, p. 6).

Further, area-average carbon densities projected by CARB by ecoregion indicate that in the Sierra/Cascade Region, AGL Biomass C MT/hectare = 42, Total biomass C = 121, and Soil C = 105. (ibid, 43). A hectare is the equivalent of approximately 2.47 acres. While this project will temporarily disturb approximately 1,384 acres through construction in a 4,464-acre project site, it notes that it will permanently disturb about 713 acres or 288.54 hectares. This disruption equals anywhere between 12,118 MT of carbon stored there up to 34,913 MT if the entire area was as carbon-dense as Biomass C. However, we can assume that the number of carbon density lost would be between 12,118MT and 34,913 MT or between 10 to 30 percent of the projects' total goal of offsetting carbon emissions by fossil fuels. If we were to factor in the construction project site's entire temporary disturbance, this number could be between 58,128 and 167,464 MT. This number equates to roughly half to more than the total number the project goal plans to offset. While the temporary result could be equal to possibly four years, this would be inaccurate

because the disturbed area would be less efficient at storing carbon. The older, denser tree stands store carbon the best. Since it will take many decades to get trees back to profitable timber and get them to higher storage potential, this temporary loss would take decades to recover. However, the rough calculations above do not even equate to the fact that carbon storage in the land is much more efficient at making up for carbon emissions in the atmosphere. As indicated above, 5,340 MMT land stored carbon = 19,600 MMT in the atmosphere; thus, it only takes 27% of land stored carbon to reduce atmospheric MMT released by greenhouse gas emissions. The efficiency of soil and biomass in the forest is much more productive than wind energy's ability to offset the difference.

Regardless of how much soil in this area is storing, the permanently disturbed acres needed would take out of the forests somewhere between 12,118 MT and 34,913 MT. (Remember, the goal is to offset 128,000 but will more likely result in only 35,000 MT offset). But you cannot ignore the temporarily disturbed site – that also has to be taken into account. The entire acreage is necessary to understand just how much the loss to carbon storage will be since it will take 40 years of the operational period. Then another at least 40 years to regain what the area is already storing. For 80 years, a reduction in carbon storage capacity will be between 58,128 MT and 167,464 MT. The loss of carbon storage will far outweigh the project's optimal 100% ability to produce and is well above the likely reality of how much the project can offset.

It also ignores one more important fact. The Fountain Wind DEIR establishes and acknowledges that it creates local heat islands around the turbines, increasing the temperature between half a degree and a degree in its region. According to statistics for much of the US West, projections show that an average annual 1 degree C temperature increase would increase the median burned area per year by as much as 600 percent in some types of forests. (Center for Climate and Energy Solutions, n.d.). Suppose this temperature increase combines with Climate Change projections of a 5-8 degree increase before the project. In that case, it will likely no longer be conducive to the type of forests that existed before this. That is significant – it will result in a permanent loss of that carbon storage.

There would be no more forests to sequester the carbon, and these types of projects will release more storage in the land than they can offset. Wind turbine projects will only make the climate problem and the wildfire problem worse.

The forests need addressing, and they need to be made more resilient. We need them for timber purposes, the water they provide all of California, and for carbon storage. They are natural, and they are the Earth's way of doing what humans can only imitate. We have proven with 100 years of poor forest management that our ways of doing things, no matter how well-meaning they are, cannot do what the Earth does for itself.

Thank you for your time, and if you have any questions or comments, please reach out to me. My first concern is public safety.

Kelly Tanner

Kwillett2@hotmail.com

Lio Salazar

From: Clerk of the Board Mailbox
Sent: Thursday, November 12, 2020 4:51 PM
To: Paul Hellman; Lio Salazar; Adam Fieseler
Subject: FW: Fountain Wind response-Attn Steve Kerns Chairman of Planning Commission & fellow Commissioners

From: Elizabeth L Lattin <elizabethlattin@gmail.com>
Sent: Wednesday, November 11, 2020 10:32 PM
To: Clerk of the Board Mailbox <ClerkoftheBoard@co.shasta.ca.us>
Subject: Fountain Wind response-Attn Steve Kerns Chairman of Planning Commission & fellow Commissioners

1. Sec.21083, Public resource Code

Reference: sec. 21003 and 21100 Public resource code "EIRS shall be written and may use appropriate graphics so that decision makers and the public can rapidly understand the document"

2.CEQA15146, sec.21083, public resource code:

Reference: sec.21003, 21061, and 21100 public resource code

"The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR."

3. CEQA 15147 Technical detail

Sec. 21083 public resource code

Reference: sec 21003, 21061, and 21100 public resource code

"The information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams and similar relevant information sufficient to permit full assessment by reviewing agencies and members of the public."

4.CEQA 15126.4(A)(4)Feasible Measures which would minimize significant impact.

"shall distinguish between measures which were proposed by project proponents...and other measures proposed by the lead, responsible or trustee agencies or other persons."

5. CEQA Guidelines 15126.4(A)(4)

Ensure that mitigation measures are fully enforceable through legally binding instruments.

6. CEQA Guidelines 15126.4(b), 15064.5

For historic resources guidelines provides specific recommendation mitigation measures. Whether the project would cause a substantial adverse changes in the significance of an archaeological resource.

7. CEQA 15064(f)(2) and 15126.4(a)(1)(A) 'Avoidance and minimization measures

Lotus vs Department of Transportation

"traffic management plans, use of energy efficient lighting, solar panels, construction lighting that will be shielded and directed away from neighbors....These are not considered mitigation measures."

Please allow me to introduce you to the Round Mountain area with common knowledge through Wikipedia that remarks "This plan, called TANC(Transmission Authority of Northern California), was halted by citizens who produced presentations statewide, showing that the DOE data conflicted with the projects stated goals. This 1.4 billion dollar TANC project was stopped in 90 days" As I was on the steering committee for StopTANC, I can tell you there is not enough green energy in NE California to warrant TANC; but if you add a few small(by federal standards) green projects, TANC will use those to push the TANC project through again, Which will destroy eastern Shasta County thru to Cottonwood. This needs to be included under cumulative impacts.

There are a few issues that have not been addressed in the EIR or the DEIR or were ignored or hidden.

1. Radar was not addressed either under communication, energy or aviation. Radar is very significant in regards to weather and aviation. Southern area of county radar is already blocked by Mt. Lassen; this project would further block the response from the east of the county. Amazingly, radar is definitely impacted by wind turbines, particularly on hilly ground and very tall turbines. This is evidenced by the fact that NOAA ROC(Radar Operation Center) will analyse wind turbine sitting proposals. whether requested by the project, planning agencies or public notification. Radar is extremely important for weather forecasts; industrial wind turbine projects raise the local temp by a minimum of 1 degree centigrade, we could be needing more accurate radar not less. this temperature rise would greatly affect our weather, forests, gardens, etc.

Also radar impacts will affect 'keeping track' of our planes enough so that The Air Force has case law in regards to turbines--

2. I must insist on a study in regards to shear factor, turbulence, and the wake effect, that appears to have been totally ignored.

As a resident, whose ranch is surrounded by the project on three sides- up against a landslide cliff. My property was off the grid and included two Whisper turbines in my poer array. I could hear the erratic winds hitting the turbines but was more evidenced by the display of erratic charging to the battery bank, along with complete shutdown of the turbines. These turbines were only 12-15 ft off the ground and had to be placed separately so as not to affect each other. I have included pertinent information as to why this is an important issue to address. MUST HAVE STUDY!

3. New state law Sb 901 Chapter 626 Fuel Breaks/ Greenbelts

"Must include measures to preserve undeveloped ridgelines to reduce fire risk and improve fire protection."

4. Water resources not addressed- Springs

Springs were not considered under water resources, geology, or hazardous materials. Yes wells were discussed but not springs, of which there are approximately 35+ one of which is mine. I have provided you with a map showing springs just in a small part of the project area.

To protect the residents and assurance of potable water into the next 40+years, I would highly suggest that pre and post measurements be taken as to quality and quantity due to the amount of blasting, grading, traffic and turbine weight over the project area.

Would also include inspection of the waterways in the area by the Water Master and the Army Corp of Engineers, as they are reviewing not just navigable waterways but also creeks and streams. Said inspection would give an idea whether this is even a good idea before approval.

5. This may not even sound important but was not even recognized as a risk-Cyber attack. Could a hack override turbine controls or sensors. Are there prevention measures in place.

6. Possibility of cumulative impact of accidents over the lifetime of the project; either from soil collapse, seperation of towers, fragments..... needs consideration.

Your Executive Summary

Only truthful statements in DEIR:

ES.8 Environmentally Superior Alternative

The CEQA guidelines define the environmentally superior alternative as the alternative with the least adverse impacts to the project area and its surrounding environment. The NO Project alternative is considered the environmental superior alternative for CEQA purposes because it would avoid all impacts of the project.

First, I must comment that I can't find who contributed specifically to any mitigation measures. What areas were written or contributed by the project, the lead agency, ESA, other agencies, or even a single individual. I could not find what education level, special training, specific experiences qualify these individuals to make these decisions to exclude, mitigate, or contribute to this DEIR.

Secondly, I was unable to find specific technical information in regards to virtually every section in most areas of justification, decisions, mitigation.

Thirdly, I defy anyone other than a speed reader to read this document rapidly as required by CEQA. You, the experts, have had at least 19 months to write and 'perfect' this document, but you give non experts 11 weeks to read, research, understand and comment during dealing with Covid restrictions and PSPS events. You don't expect much, I'd almost think that there is an agenda to support this project!

Detective questions apply to the breaking of CEQA or case law, whether lack of specificity, mitigation or lack thereof, These are questions like who(project, lead agency, ESA, private individual), their qualification, why, support measures, monitor, compliance, consequences, etc.

Alternatives- not enough information to do a real comparison, as most logical alternatives were rejected out of hand, as they didn't meet project objectives.

Biomass was rejected even though it fits great with the county's general plan. In order to meet the project's power production requirements, with the larger power producing turbines, they only need about 35 turbines. Why was this not presented as an alternative? Once again who proposed these alternatives- specifically.

Aesthetics- ES-2 You admit there is no mitigation available to significant impact to view shed in general.

3.2-2 I totally disagree that there is no mitigation needed for impact highway view shed if you admit that there could be significant degradation to the character and visual quality.

3.2-3 I totally disagree that no mitigation is needed for lighting, whether construction lighting x 2+years or red strobe lights x 40 years. They ruin the viewing of the night sky to the east as far as the hills to the west of Redding eastward. Sorry you amateur astronomers and those who watch moonrise. Much less those who live to the east of the project site, on hills, who wish to watch sunset, you get to see shadow flicker, hope you don't have neurological issues.

So, how were these decisions made, what technical information validated these decisions and by whom, specifically.

Air Quality

3.3-1a AQMD will monitor these records, I presume, but how often and if problems are found, how would they be resolved?

3.3-2b Ditto above, along with what specific ground cover, what specific dust palliatives and soil stabilizers? How often will AQMD monitor this. If you accept their mitigated levels and they exceed these limits, how will you hold them accountable?

3.3-4 Not enough information throughout the document are types of substances, chemicals, etc. used to come to a less than significant impact. Why wasn't blast fumes addressed? What about a minimum of 5-10 times the amount of concrete used? Types of pesticides not addressed other than in Health effects.

Once again in regards to mitigations: Who proposed, why was this decision made, how will it be monitored, if out of compliance, what are the consequences?

Biological Impact- Scrape the majority and start over again!

The original study was done prior to the application to the lead agency, hence not CEQA compliant. A survey done 9 years ago, not done under CEQA, paid for directly by project proponents is illegal and unacceptable.

This study was done in 2011 in the McCloud area south, with addendums added periodically. Migratory birds use the flight path directly over the project, not up the McCloud area. The project area is the lowest hilly area between Lassen and Shasta, hence their pathway. There are guidelines available through the US Fish and Wildlife Service for land based wind energy, quite extensive particularly about siting- these should have been followed but guessing didn't fit the project's plans for permanent placement. Study didn't address migratory songbirds, even though we have lost 60-100% of these birds in the last 50 years. What mitigation measures would you use for soaring raptors- you say none and yet I

can think of a couple, granted extreme but still better than none. Stop turbines during migratory season, turn them off from sunset to sunrise, avoid use while raptors soar.

Past surveys of 'takes' were extremely inadequate. Birds are thrown much further than studied, depending upon their weight and speed of turbine blades.

Dead birds on the ground last from 12-24 hrs. Feed is scarce, predators are hungry- gone. There is even a pack of coyotes at HatchWind that no longer hunt, they scavenge and are quite fat and sassy.

3.4-3, 3.4-4, 3.4-6, 3.4- Same detective questions

Who decided mitigation, what criteria used, proof, how monitored assessment compliance, consequences?

3.4-9 No water fowl- Are you _____ kidding me?

Canadian geese and snow geese collapsed or dead on hillsides, resting at local ponds after storms. Better try again

3.4-12, 3.4-13 Amphibians, same detective questions

Who decided mitigation, why, justification, monitor, compliancy, consequences.

3.4-15. Riparian and wetland habitat

Out of 35,000-40,000 acres it shouldn't be too difficult to keep from destroying any, much less 150 acres of riparian habitat- oh yes you mitigate by setting up another elsewhere. It took nature 100s-1000's of years to create these areas and during this time of climate change, you are going to do it in a couple years; which certainly sounds presumptuous.

Detective questions: who made the plan, what reasoning, how accomplished, how measured, when, who monitors, compliancy, consequences?

3.4-16

What type of restoration, what compensation, what enhancements?

Detective questions: Who made the plan, how is it justified, exactly how accomplished and measured, monitors, compliancy, consequences....

You are going to get tired of the detective.

Communications

3.5-1 Mitigation measures for "over the air", just how far from the project site? How do you decide interference with a new owner that can't show a before? Specifically how will you resolve receiver interference through coordination. How quickly, what if it doesn't work?

I know from my experience as a flight nurse that communications can be interfered with by electrical interference, But I will defer my comments to Angel Baga.

3-6 Cultural

Other than making sure you abide by CEQA and case law, I will defer my comments to the Pit River Nation.

3-9 Geology

Boy is this a joke?!? Are we talking about the same land?

Common knowledge of Round Mountain per wikipedia "The geography in Round Mountain has been at times very unstable. Several homes, a store and a nightclub have been among buildings destroyed by landslides. Many of the powerlines in the area appear to be constantly repaired due to shifting foundations. After both the Fountain Fire and the introduction of more powerlines, slides in the area increased. The location of a major road construction project in 2009 of "the fountain" became the scene of major shifting, road buckling, and surface water eruption in the first rain season after construction."

My own ranch is a large landslide, whose eastern slope(in the project area) is an active sliding area. One winter the water and mud came down that cliff so forcefully that it picked up a 5,200 gallon tank, full of water, and threw it 30 ft through the forest; finally it settled on a new plateau of mud, trees and other debris.

3.9-3, 3.9-4, 3.9-5 Land slides, soil erosion, unstable soil,lateral collapse

You try and negate these but they are well documented in the area.

Someone mentioned corrosive soil present and it's never mentioned again. But the soil is corrosive to concrete and steel, how will this be address. Specifically will any chemicals be used as a barrier between the soil and concrete base? Someone mentioned the Montgomery Creek Formation and nothing further, although you have a turbine placed right on top of a seam.

[3.9-7.No](#) septic as soil won't perc

Wonder why that is?

Too much clay-impenetrable?

Too high a water table?

Too much slope?

So after consideration there needs to be a further study done of area as many things were not appropriately addressed. For any further, it's the detective questions: who planned, decided, how, when, monitored, compliance, consequences?

Hazards

3.11-1, 3.11-2, 3.11-4, 3.11-5, 3.11-6,

Specifically who made these decisions?

3.11-3, 3.11-7

Who and why were these mitigation measures chosen? What about failure? Are there consequences for the project?

Here we go with those detective questions.....

Hydrology and water quality

There has not been a complete review of the water situation in and directly outside the project area. This whole area is fluid due to waterways, excessive rainfall, unstable soil, and erosion.

Springs were not addressed and wells only superficially. The Army Corp of Engineers should have been brought into consultation initially. along with the state water control board or water master. There should be pre and post measurements of both wells and springs for quantity and quality and compensation preset for a degrading of quantity or quality. Here water is life! Springs are well known for disappearing if too much interference.

As for any further, you know all the detective questions.

Transportation

3.14-1, 3.14-2, 3.14-3

So you will develop a Traffic Plan without Shasta County having a fire or FEMA approved Evacuation Plan. Has there been a traffic pattern study done of Deschutes, 299E- I can't find it. Would all your deliveries be scheduled around traffic patterns or project convenience? Since all the trips planned were for deliveries, should you not have considered the 400 employees? Will their arrivals be scheduled according to traffic patterns? Who will pay for repairs needed to alternative route for local traffic, ie. Buzzard's Roost, Oak Run Rd.,

3.14-4 Who picked this mitigation? How will it decrease to less than significant? One death due to the inability to evacuate whether from self emergency or community emergency is one too many. Who will cover the cost of any law suite from a failure of this plan?

Utilities and Services

We are not out of the drought, one good winter does not repair in one year. Can't predict water availability from anywhere but Burney Water District only committed to the construction phase, not long term. Do you have a back up plan? How can you guarantee the ability to recycle these blades or nacelles?

How can you guarantee the removal down to the pad if there will be a minimum of 75-100ft. or more of steel reinforced concrete tower? Can these be removed and how specifically. Are you willing to set up Bond to cover the cost of said 'decommissioning'?

Once again detective questions where appropriate.

Wild Fire

Oh boy what a crock! No one should have contributed to this section unless they have actively fought fire hopefully locally. I have, so I will.

3.16-1

Well at least we all agree that virtually everything about this project has the potential of significant impact in our extremely high fire risk area. GPS is notorious for being inaccurate at least by a few feet. Air drops are not done to towers as they are ineffective. Air drops need to be 100-200 ft to the forest to be effective. Ground trucks can't pump anywhere near nacelle height. Ground crews will not get any closer than the perceived throw distance of turbine blades. Given smokey conditions, your close dip tank will be useless. Facing real fire a minimum of 30% of your employees will be unable to function.

3.16-2

Who will write this fire plan and what are their qualifications to do so?

Will the coordinator be a firefighter? Will they have other responsibilities than tending to 72 turbines? Is the lightning coordinator working all night during storms, dry or otherwise?

All these mitigation measures are good practices for anyone living in our fire area. I went so far as to have a 3in water main and 2in standpipes with fire department connections. As good practice, I see nothing here that qualifies for a reduction to less than significant or down to base line.

3.16-4 says that it reduces significant risk but doesn't show how.

All the detective questions apply to mitigation measures. I defer all further comments to Kelly Tanner.

Narrative summary

Must make sure that no company that has ever been associated with West, or Standtech has any ability to supervise the construction as that would be a direct conflict of interest.

Due to the length of the document (which obviously took months, lots of people and \$ to assemble), power outages, the COVID situation. I was unable to address all the topics that I desired but will rest assured that others have caught the challenges.

I don't know whether I am more disappointed in my county planning dept, the project,ESA, or my own inability to engage the public; probably the county as I pay their salary.

All through school I taught my daughter that 'it was not how little you had to do to get an A but how much you had to do to critically understand the subject. Guess that's why she teaches at Ohio State with a PhD.

I feel like this is a D or C- in the Northern California Area.

I would hate to think that any monitoring would be handled with this type of inadequacies .

What other malfunctions are going on in our county government, Detective questions again? Who profited from Hatchet Wind? When, How?

After a reasonably complete review of available information from I feel is an incomplete document. I must recommend an absolute, "NO PROJECT' alternative!

Appendix- Hand delivered

DEPT OF RESOURCE MGMT
RECEIVED

JAN 08 2021

Paul Hellman- Director
Lio Salazar
Shasta County Planning Dept.
1855 Placer Street, Suite 103
Redding, California 96001

ADMINISTRATION

1/1/21

Gentlemen,

As the Fountain Wind Generation Project EIR progresses from Draft to Final I wanted to give you a “heads up” of a couple of impacts that you may want to make sure are properly covered in the “Final” and may even cause you to recirculate the draft.

I am a California registered professional forester and have been responsible in the past for over 7 National Forests in 3 states including the Shasta Trinity National Forest adjacent to the Fountain Wind Generation proposal. I was also on the planning Staff for the Chief of the Forest Service in Washington DC. In these positions as the reviewing/deciding officer for many EIR's and EIS's I have been conditioned to spot weakness in these documents.

While, in my opinion both impacts cannot be mitigated, at least one of these concerns should **constitute significant new information** that I'm sure you would want potentially affected communities and land owners to have a chance to become aware of before review by Commission and Board members.

Aesthetics:

The EIR correctly states that “the project would, unless mitigated have a substantial adverse effect on the scenic vista or substantially degrade the character or visual quality of views from publicly accessible vantage points. (significant and Unavoidable)

It is important that the final also recognizes the economic impact to the County of aesthetic degradation for the decision makers.

Over the years, as manager of much of the land and resources in Shasta County, I have reviewed many proposals that could possibly impair the

scenic beauty of the area and subsequently the economy. I cannot imagine a project more impactful to longterm visual quality of the county to the visiting recreating public.

Mitigating these swirling 679' giants interrupting our landscape views would seem impossible.

The Draft EIR did not consider that Shasta County is the gateway and hub for recreationists venturing out into the great scenic forests in Northern California. This scenic attraction is one of the keys to the stability of the economy of our County.

In Shasta County two of the four routes into the scenic forest have been essentially destroyed by fire. They will take 20 plus years to recover to former scenic beauty.

This project will severely degrade one more route (highway 299 east) leaving only Highway 44 unscathed. Those traveling to the county's outstanding recreation attractions like Burney Falls, Hat Creek and Lassen NP and the Pacific Crest National Scenic Trail will be severely impacted. Additionally, this project will be in view of several candidate scenic highways and the National Volcanic Scenic Highway, and the Pacific Crest Scenic Trail. As stated in the EIR, It will violate scenic elements SH 1, SH2, SHa of our County General Plan. However, the draft EIR does not raise the potential longterm impact on the economy.

More importantly

Wildfire:

My main concern is the effect on wildfire suppression and protection of the 3 adjacent communities. I have served as Fire Team Fire Behavior Officer and Planning Chief on numerous large fires across the nation.

This Project sits in and around a dense stand of young pine forming continuous horizontal and vertical (ladder) fuels.

The Project is an absolute **design for disaster** for at least 3 communities and the many homes scattered adjacent to the project. This County has recently experienced 2 deadly and costly fires, the Carr fire and the Zogg fire.

The proposal sets up a condition that cannot be mitigated with 72 towers and blades reaching to 679' scattered along ridge tops and over 30,000 acres. It combines with numerous existing major distribution power lines nearby. This will virtually eliminate the option for using fixed wing aerial attack over a broad area making these immediately adjacent communities and scattered homes indefensible from wildfire.

The project sets up a "No Fly Zone" for all initial attack and sustained attack for fixed wing aircraft. As Plans Chief's I would never assign fixed wing aerial attack in and around this project. I would have great reservations even putting helicopters in the same area with up to 72-679' high towers scattered along the key ridges so essential for stopping wildfires.

Let me explain further:

Stated in the Draft EIR, "due to the height of the turbines, construction and operation of the Project **could** interfere with aerial firefighting operations, a potentially significant impact." This statement should say " **WILL** interfere."

Believe it or not the the Draft EIR mitigates this by "providing GIS files or other maps of the Project to CAL FIRE". Can you imagine trying to make a drop (which, to be effective should be below 150 feet) in or around this project in smoky, windy conditions using a GPS or map of 72-679' towers scattered all over the 30,000 acres!

The Draft EIR preparers set up their justification by referring to what they call "some research". They quote from a 2015 Commonwealth of Australia hearing-a local Australian county fire official that wind turbines "do not cause aircraft concern".

They fail to quote in the **same paper** that the Aerial Agricultural Association of Australia (AAAA) (the main fire fighting pilot association) "believes that wind farm developments and especially wind monitoring towers are posing an **Unacceptable threat** to aviation safety and especially aerial application'. Further this paper says "Clearly these structures will impact on the operations of aircraft involved in aerial firefighting..." And the paper **concludes** by stating—"the committee has received evidence suggesting that the rural fire services across the country have not properly considered these issues" and goes on to cite a fire (Cobbler Road fire) "that would not have been able to be controlled if wind turbines had been installed at the top of the range."

I hope your review team will note the bias of your contractor in the Draft EIR preparation. (We are talking lives and property here!)

Our Associated Aerial Firefighters are reviewing the Proposal. Their initial unofficial reaction was that it is an **unworkable** and **very unsafe** proposal

It couldn't have been made more clear this past year how absolutely critical it is to have fixed winged bombers to help save lives and communities. I hope the Draft review team Commission and Board take a serious look at this impact.

Finally, there was a headline article in the December 11th Record Searchlight about Shasta County filing suit against PG&E to recover costs incurred from the Zogg Fire. As the Commission and Board consider the funds this project will bring to the County, I hope they will also weigh the costs incurred from the Carr and Zogg fires and the potential costs, liability and **LOSS OF LIVES** that could result from their decision on this DESIGN FOR DISASTER.

Sincerely,



Stephen Fitch
Shasta-Trinity Forest Supervisor (retired)
530-347-0071
svfitches@yahoo.com



Jim,

3-21-21

I believe this is a very important letter for the commission members to see before the hearing on the Fountain Wind Generation proposal.

This group was not aware of this Proposal as their officers are based outside Shasta County. However, they would be key to the protection of communities and people living in the area. They contacted me because of my fire and resource protection background hoping there was someone on the commission with a similar background I would know that could make sure they got heard.

Anything you could do to make sure they are heard would be appreciated.

A handwritten signature in blue ink, appearing to read "Steve Fitch".

Steve

from...

Steve Fitch
Forest Supervisor
Retired

Shasta-Trinity National Forests



Associated Aerial Firefighters

Promoting Safety, Efficiency and information about aerial fire fighting

James M. Barnes
PO Box 136
Woodacre, CA 94973

Steve Fitch
19012 Shoreline Drive
Cottonwood, CA 96022

Dear Sir:

We have recently become aware of the Fountain Wind Project Proposal and hope the Planning Commission and Board of Supervisors will consider our comments as they directly affect the safety of our pilots, several communities and the forests in your county. This appears to be a very unsafe proposal to adjacent communities and aerial firefighters. Our organization, The Associated Aerial Firefighters provides a forum to advocate for safety, effectiveness, and efficiency in wildland aerial firefighting.

Aerial firefighting in and around wind turbines presents a set of unique challenges that are problematic to say the least. As a Forestry Airtanker Pilot for more than thirty years I have worked fires at Altamont pass and in Tehachapi pass. The strategy employed in both cases was to not use fixed wing airtankers in the turbine fields at all except around the borders and only occasionally within the field when a window of opportunity presented itself. This tactic was sometimes used to try to slow the spread when the risks to the aircraft and the towers were acceptable. These opportunities were rare and rarely effective. At Altamont we almost always stopped the fire after it burned completely through the field usually at highway I-5. Except for one occasion when it spotted across the highway exposing about a mile of parked cars on the road to a burn over.

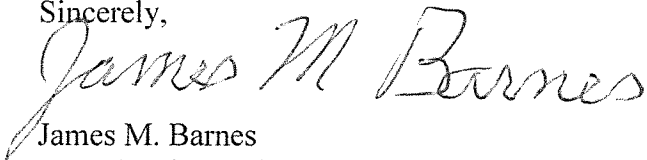
At Altamont and Tehachapi most of the turbine field was contained within light flashy fuels such as vast stands of grass lands. The proposed Fountain Project would be located in an area containing large stands of pyrophoric fuels such as chaparral, manzanita, digger pines and mixed conifers. The heat generated by such a fire, especially if it is wind driven, would be significantly greater than the heat produced by a fast-moving grass fire. This would pose a greater risk to ground Firefighters because of the lack of ability to provide them effective air support and the adjacent homesteads surrounding the communities of Round Mountain, Montgomery Creek and Hillcrest. The threat of fatal damage to the tower structures is also worthy of consideration. Not only because of material losses but as an additional hazard that could endanger Firefighters on the ground.

Before such an installation is contemplated, extensive plans to modify and remediate the fuel load and create a system of fire breaks would be imperative to have any success in effectively fighting a fire in or near the turbine field from the ground. Safety zones and fire breaks would have to be part of the equation for any ground firefighting operations.

High towers and high winds are a situation that shouts watch out when it comes to aerial firefighting. At winds above 30 knots, airtankers operations would be suspended but even winds below that flowing through the high towers would generate eddy currents that would contribute greatly to the danger for aircraft trying to conduct retardant or water drops within or above the turbine field. Typical drop altitudes are 150ft above ground and a bit lower crossing a ridge top. A state investigator member of our organization who has been involved with over 200 fatal and serious injury aircraft accident investigations advises that these structures over 600' scattered over 30 thousand acres and poor visibility from smoke would be a "prescription for a fatal accident. From an airtanker pilot's point of view, fighting such a fire would be a no-win situation.








Please consider our thoughts as your review this proposal.

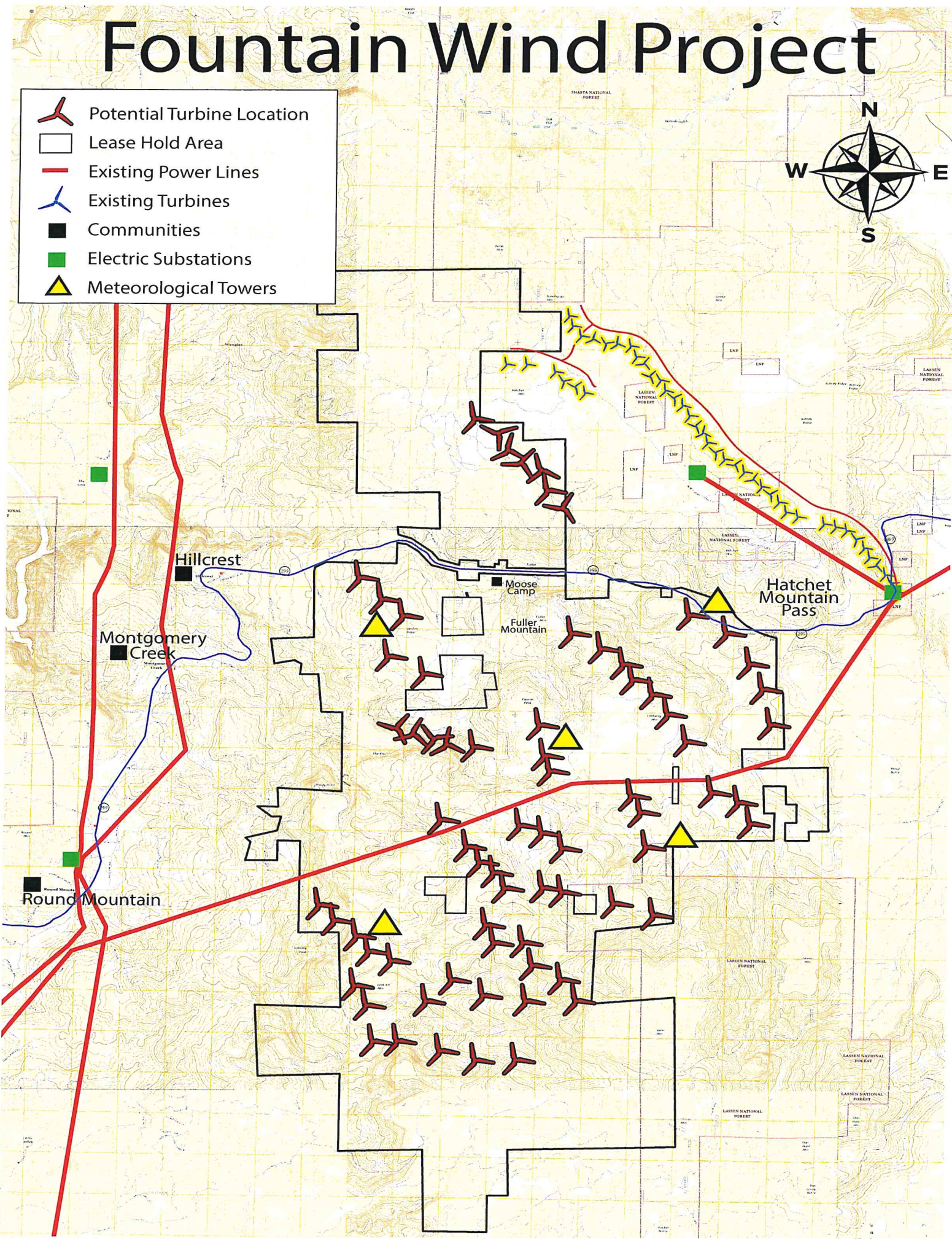
Sincerely,

A handwritten signature in cursive script that reads "James M. Barnes". The signature is written in black ink and is positioned above the typed name and title.

James M. Barnes
Associated Aerial Firefighters

Fountain Wind Project

-  Potential Turbine Location
-  Lease Hold Area
-  Existing Power Lines
-  Existing Turbines
-  Communities
-  Electric Substations
-  Meteorological Towers



Planning Commission Public Comments – May 13th 2021

Good afternoon Commissioners, my name is Maggie Osa and I am speaking in opposition to the Fountain Wind Project.

Page 3.16-25 of the Fountain Wind DEIR states “Given the inherent potential for ignition risk associated with power lines, it is anticipated that PG&E’s Fire Prevention Plan would be applied to the PG&E interconnection facilities as required by CPUC GO 166.”

Working with Dr. Nathaniel Skinner, Program Manager, Safety Branch, Public Advocates Office of the CPUC I have provided you with two documents regarding the status of PG&E’s failed Wildfire Mitigation Plan which is still in revision for 2021 as shown in Attachments (1) & (2).

Item 1 in the Table of Recommendations state “The Wildfire Safety Division should deny PG&E’s 2021 Wildfire Mitigation Plan and order substantial revisions.” The recommendations outline PG&E’s continued failures particularly to High Fire Threat Districts.

Attachment (1) states that “PG&E’s 2020 Wildfire Mitigation Plan (WMP) efforts suffered from serious failures.” “A meaningful evaluation of PG&E’s 2021 WMP must address the essential question – does the plan address the fundamental causes of PG&E’s past failures? PG&E’s 2021 WMP does not.”

These two attachments are a must read since they cannot be covered within the three minutes public comment period. I have also submitted these documents to the Planning Department for inclusion in the official documents.

As stated within the Fountain Wind FEIR some information will not be covered within the environmental section areas under CEQA. However, as the decision makers you cannot exclude the extensive wildfire risks documented via the PG&E bankruptcy, PG&E’s failed 2021 WMP which include the CPUC WSD recommendations, the CPUC’s Enhanced Oversight and Enforcement Process which was triggered based on failures in 2020, and Shasta County’s on-going law suit against PG&E for failures to provide safe electrical services.

The evidence is overwhelming that the increased wildfire risk from PG&E alone does not meet the approval criteria regarding the safety and welfare of the community and residents who live in the area.

Please vote No on the Fountain Wind Project when it comes before you for a vote.

Attachment (1)

CPUC, Public Advocates Office,

Email: March 29, 2021

From: Caroline Thomas Jacobs, Director Wildfire Safety Division

Subj: Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Update of Pacific Gas and Electric Company



PGE Public
Advocates Office Co

Attachment (2)

CPUC, Public Advocates Office,

Email: April 13, 2021

From: Caroline Thomas Jacobs, Director Wildfire Safety Division

Subj: Reply comment of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities



Public Advocates
Office Reply Comme

References:

Fountain Wind Project Draft Environmental Impact Report, dtd July 2020, pg. 3-16-25.

PUBLIC ADVOCATES OFFICE

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



March 29, 2021

Via Electronic Mail

Caroline Thomas Jacobs, Director
Wildfire Safety Division
California Public Utilities Commission
San Francisco, CA 94102
Wildfiresafetydivision@cpuc.ca.gov

Subject: Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Update of Pacific Gas and Electric Company

Dear Director Thomas Jacobs,

The Public Advocates Office at the California Public Utilities Commission (Cal Advocates) respectfully submits the following comments on the 2021 Wildfire Mitigation Plan Update of Pacific Gas and Electric Company (PG&E). Please contact Nathaniel Skinner (Nathaniel.Skinner@cpuc.ca.gov) or Henry Burton (Henry.Burton@cpuc.ca.gov) with any questions relating to these comments. We respectfully urge the Wildfire Safety Division to adopt the recommendations discussed herein.

Respectfully submitted,

/s/ ***Carolyn Chen***

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Attorney

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I. INTRODUCTION

Pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (Commission) and Resolution WSD-011, the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) submits these comments on the 2021 Wildfire Mitigation Plan (WMP) Updates submitted by Pacific Gas and Electric Company (PG&E).

Resolution WSD-011, the *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*, established guidelines and a schedule for WMP submissions in 2021. Pursuant to Resolution WSD-011, PG&E and other large investor-owned utilities (IOUs or utilities)¹ submitted 2021 WMP Updates on February 5, 2021 and Supplemental WMP Filings on February 26, 2021.

Resolution WSD-011 permits interested persons to serve opening comments on the large IOUs' 2021 WMPs by March 17, 2021 and reply comments by March 24, 2021. On February 23, 2021, Cal Advocates, Green Power Institute (GPI), Mussey Grade Road Alliance, the Protect Our Communities Foundation, The Utility Reform Network, and Will Abrams requested an extension of the comment deadline to March 29, 2021. On February 26, 2021, the Wildfire Safety Division (WSD) approved the deadline change.

In these comments, Cal Advocates addresses PG&E's 2021 WMP. In a separate document, we address the WMPs of Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E), and provide technical and procedural recommendations applicable to all utilities.

¹ Many of the Public Utilities Code requirements relating to wildfires apply to "electrical corporations." See, e.g., Public Utilities Code Section 8386. These comments use the more common term "utilities" and the phrase "electrical corporations" interchangeably to refer to the entities that must comply with the wildfire safety provisions of the Public Utilities Code.

II. TABLE OF RECOMMENDATIONS

Item	Utility	Recommendation	Section of these Comments
1	PG&E	The WSD should deny PG&E's 2021 WMP and order substantial revisions.	A
2	PG&E	The WSD should require PG&E to justify the scope of its enhanced vegetation management (EVM) program.	B
3	PG&E	PG&E should intensively focus programs with a narrow scope on high-risk circuit-segments.	C
4	PG&E	The WSD should require PG&E to submit a revised 2021 workplan for EVM, when PG&E submits a revised 2021 WMP following denial.	C.1, C.3
5	PG&E	The WSD should require PG&E to submit a revised 2021 workplan for system hardening, when PG&E submits a revised 2021 WMP following denial.	C.2, C.3
6	PG&E	The WSD should require PG&E to track the quality of work of individual contractors and develop specific action plans to address underperforming contractors.	D
7	PG&E	PG&E should expand quality assurance and quality control of work performed by vendors with a history of flawed work.	D.5
8	PG&E	The WSD should require PG&E to schedule semi-annual internal audits of WMP initiatives that have been worked on by contractors.	D.5
9	PG&E	The WSD should require PG&E to perform annual internal audits of its routine and enhanced vegetation management programs.	E
10	PG&E	The WSD should require PG&E to audit its asset inspections and recordkeeping practices and present corrective actions.	F

11	PG&E	The WSD should require PG&E to publicly serve the causal evaluation from the independent contractor it has hired to examine its distribution intrusive pole inspections.	F
12	PG&E	The WSD should require PG&E to file regular reports on its quality assurance and control (QA/QC) processes for inspections.	G
13	All utilities	The WSD should convene a technical working group to develop best practices for QA/QC of asset and enhanced vegetation management inspections.	G
14	PG&E	The WSD should require PG&E to perform an internal audit of workplace safety and submit a corrective action plan to address the high number of worker injuries related to wildfire mitigation efforts. PG&E should submit a report by September 2021.	H
15	PG&E	PG&E must explain the errors in its original data tables related to worker injuries.	H
16	PG&E	PG&E should explain why its geospatial data shows that it continues to install hazardous expulsion fuses in High Fire-Threat District (HFTD) areas.	I
17	All utilities	The WSD and the Commission should state that the costs of installing non-exempt fuses in HFTD areas are not recoverable from ratepayers.	I
18	PG&E	The WSD should require PG&E to develop and provide a workplan for replacing expulsion fuses in HFTD, when PG&E submits a revised WMP following denial.	J
19	PG&E	The WSD should require PG&E to develop a three-year workplan for fuse replacements, to be submitted with its 2022 WMP submission.	J
20	PG&E	The WSD should require PG&E to develop a workplan to replace small copper conductor across its HFTD, especially on its highest-risk circuit segments within HFTD.	K

21	PG&E	The WSD should require PG&E to track the amount of small copper conductor replaced within HFTD.	K
22	PG&E	The WSD should require PG&E to justify its use of non-composite poles. PG&E should submit the results of this analysis with PG&E's WMP submission in 2022, if not sooner.	L
23	PG&E	The WSD should require PG&E to study the benefits of performing routine climbing inspections of transmission structures below 500 kV in HFTD areas. PG&E should be required to submit a report by September 2021.	M
24	PG&E	PG&E should begin a pilot program of aerial inspections of distribution assets in HFTD areas, while it studies their efficacy.	N
25	PG&E	The WSD should direct PG&E to perform a study to determine the cost and benefit of augmenting its detailed distribution inspections with aerial inspections. PG&E should submit this study with its 2022 WMP submission.	N
26	PG&E	The WSD should require PG&E to investigate why its covered conductor costs are far in excess of SCE's costs and investigate ways to reduce this cost. PG&E should submit the findings when it submits a revised 2021 WMP following denial.	O
27	PG&E	WSD should require PG&E to separately provide costs, miles treated, and risk-spend efficiency (RSE) estimates for each system hardening activity when PG&E submits its revised 2021 WMP following denial.	O
28	PG&E	The WSD should direct PG&E to substantially improve the efficiency of its system hardening programs by the time of its 2022 WMP submission.	O
29	PG&E	The WSD should direct PG&E to justify its information technology (IT) needs.	P

30	PG&E	The WSD should require PG&E to explain why its filings on ignition investigations contradict one another.	Q
31	PG&E	The WSD should require PG&E to review the accuracy of its responses to conditions in its September 2020 Quarterly Report and submit findings when PG&E submits its revised 2021 WMP following denial.	Q
32	PG&E	The WSD should require PG&E to justify and update its RSE calculations.	R
33	PG&E	The WSD should require PG&E to submit RSE scores for programs with significant expenditures in PG&E's WMP, except where RSE estimates will not materially influence decision-making.	R.4
34	PG&E	At present, PG&E, the WSD, and the Commission should not rely on PG&E's current RSE scores to determine or validate resource allocation.	R.5
35	All utilities	The WSD should consider developing its own framework that all utilities must use to calculate risk-spend efficiency estimates.	R.5

III. PG&E

A. The WSD should deny PG&E's 2021 WMP and order substantial revisions.

Our comments begin with a review of PG&E's implementation of its 2020 WMP. This review provides important context for PG&E's 2021 WMP, because a plan is only as good as its execution. PG&E's record in this regard is poor.

PG&E's 2020 wildfire mitigation efforts suffered from serious failures. For the most part, these can be categorized as failures of execution. PG&E's management failed to set priorities, communicate a strategy, and supervise program implementation. This systemic weak management has produced a pattern of safety failures: failure to prioritize mitigation programs according to risk, delayed or missed inspections, inconsistent quality of work, mismanagement of contractors, workers not following procedures, workplace injuries, and other errors. Some of these errors have put the public in danger.

A meaningful evaluation of PG&E's 2021 WMP must address the essential question – does the plan address the fundamental causes of PG&E's past failures? PG&E's 2021 WMP does not. While PG&E's 2021 WMP includes several significant improvements, it does not sufficiently address failures in management oversight, prioritization, recordkeeping, and other issues that contributed to the utility's poor performance in 2020. Because PG&E's WMP does not resolve these central problems, the plan is inadequate and should be denied.

1. Vegetation management.

PG&E's vegetation management activities in 2020 suffered from serious failures related to prioritization and recordkeeping. Several key issues are summarized below and discussed further in sections D.4 and E of these comments.

The California Department of Forestry and Fire Protection (CAL FIRE) has completed its investigation and determined that PG&E's infrastructure ignited the Zogg Fire in September 2020, which killed four people. CAL FIRE has concluded that a tree struck PG&E's lines and

ignited the fire.²³ The ignition of the Zogg Fire in part may be related to incomplete vegetation management work (see Section E).⁴ The situation is further complicated by PG&E’s conflicting statements on whether specific trees were marked for removal during inspections prior to the fire.⁵

In addition, PG&E did not prioritize its 2019 or 2020 enhanced vegetation management (EVM) to its highest-risk circuit miles.⁶ The federal court-appointed Monitor overseeing PG&E’s probation (Federal Monitor)⁷ and the WSD⁸ both highlighted poor EVM prioritization. Cal Advocates’ analysis further confirms there was little to no correlation between where PG&E performed EVM in 2020 and the circuit’s risk ranking.⁹

² CAL FIRE, *News Release: CAL FIRE Investigators Determine Cause of the Zogg Fire*, March 22, 2021: “After a meticulous and thorough investigation, CAL FIRE has determined that the Zogg Fire was caused by a pine tree contacting electrical distribution lines owned and operated by Pacific Gas and Electric (PG&E) located north of the community of Igo.” <https://www.fire.ca.gov/media/u2kh4nyd/zogg-fire-press-release.pdf>

³ ABC News, “California’s Zogg Fire caused by tree hitting PG&E power lines, Cal Fire says,” March 23, 2021, <https://abcnews.go.com/US/californias-zogg-fire-caused-tree-hitting-pge-power/story?id=76628527>

⁴ PG&E, *Response to Order Requesting Information Re Zogg Fire and Order for Further Information Re Zogg Fire*, in U.S. District Court for the Northern District of California case, *U.S.A. v. Pacific Gas & Electric Co.*, Case No. 14-CR-00175-WHA (hereinafter Case No. 14-CR-00175-WHA), Doc. No. 1250, pp. 7-10, October 26, 2020.

See also: U.S. District Judge William Alsup, *Order Requesting Information Re Zogg Fire*, Case No. 14-CR-00175-WHA, Doc. No. 1246, October 12, 2020.

⁵ U.S. District Judge William Alsup, *Questions for Follow-Up* (Case No. 14-CR-00175-WHA Doc. No. 1307), February 18, 2020.

⁶ “The WSD finds that PG&E is not using the risk scoring in any of the three models provided to the WSD to drive/workplan its EVM initiative activities and therefore appears to not be sufficiently prioritizing or reducing the risk of wildfire ignition while implementing its EVM initiative. While PG&E has noted it has accomplished its WMP goal of completing 1,800 miles of work, the WSD finds that the completed work has not been sufficiently prioritized by risk.” Wildfire Safety Division, *Audit of PG&E’s Implementation of their Enhanced Vegetation Management Program in 2020*, February 8, 2021.

⁷ U.S. District Judge William Alsup, *Order Re Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1247), October 20, 2020, Exhibit A, pp. 1-3.

⁸ Wildfire Safety Division, *Audit of PG&E’s Implementation of their Enhanced Vegetation Management Program in 2020*, February 8, 2021.

⁹ PG&E’s responses to Data Request CalAdvocates-PGE-R1810007-33, Question 6, February 2, 2021.

2. Contractor management.

PG&E has persistent problems managing its contractors, from failures to inform contractors of procedures to failures to track and address compliance with PG&E's protocols. Several key issues are summarized here and discussed further in section D of these comments.

PG&E's internal Electric Quality Assurance (EQA) audits in September 2020 uncovered that the utility's contractors who performed intrusive inspections on wood poles were unaware that PG&E had an inspection protocol for intrusive inspections. Instead, the contractors created their own protocol.¹⁰ Additionally, the PG&E personnel responsible for supervising the contractors were unaware of the most recent update to the inspection protocol.¹¹

PG&E also does not track how many mistakes each vegetation contractor is responsible for and makes no apparent effort to measure the quality of work performed by individual vegetation management contractors.¹² In one instance, this failure of oversight led to a contractor leaving a tree to grow until it contacted the conductor and the Federal Monitor observed the singed branch on this tree.¹³ Other issues include contractors removing trees and performing grading work without permits.¹⁴ In another instance (see section D.3) PG&E

¹⁰ "The Pole Test & Treat Program procedure ... was not utilized by the 7 crews (3-5 individuals) and the supervisors (5) interviewed from both Transmission and Distribution. ... TD2325P-01 is the PGE procedure that is required to be followed to ensure adherence to the Pole Test & Treat Program. Osmose and Davey Tree personnel were unaware of TD2325P-01 and two of their supervisors had created their own procedure. PG&E staff responsible for supervising the contractors were unaware of the TD2325P-01 update that occurred on November 15, 2019."

PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, Attachment 1 (Confidential). Certain portions of this document are confidential, but the information included here is not.

¹¹ PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, Attachment 1 (Confidential). Certain portions of this document are confidential, but the information included here is not.

¹² Asked about the relative performance of different contractors, PG&E stated "EVM work verification ... does not track by exception." Asked if PG&E performed more intensive audits or work verification of a particular contractor, PG&E stated "Generally, PG&E does not distinguish between contractors in performing work verification and [Quality Assurance – Vegetation Management] audit procedures." PG&E's response to Data Request CalAdvocates-PG&E-R1810007-33, Questions 4 and 10, February 2, 2020.

¹³ U.S. District Judge William Alsup, *Order Re Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1247), October 20, 2020, Exhibit A, p. 1, 5-11.

¹⁴ PG&E's response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, Question 3, January 8, 2021.

employed a contractor with a problematic record of environmental non-compliance to perform clean-up work after the Camp and Kincade Fires.¹⁵ ¹⁶

3. Asset inspections.

PG&E has done a poor job prioritizing asset inspections. PG&E has also failed to produce records demonstrating compliance with inspection schedules required by General Orders.¹⁷ Several key issues are summarized below and discussed further in section F of these comments.

Out of 967 transmission towers in the High Fire-Threat District (HFTD) that were scheduled for climbing inspections in 2020,¹⁸ PG&E failed to conduct any climbing inspections before PG&E's internal goal of the end of August 2020.¹⁹ PG&E had aimed to complete these inspections by August 31, 2020 "before peak wildfire season."²⁰ Even after the Federal Monitor discovered this issue and brought it to the attention of PG&E management, PG&E did not prioritize inspections on towers in the HFTDs.²¹ Cal Advocates' discovery on this issue found that PG&E's management provided no strategic guidance to the staff regarding how to sequence inspections.²²

¹⁵ PG&E's response to Data Request CalAdvocates-PGE-NonCase-RK-07032020, Questions 3 and 36, August 7, 2020.

¹⁶ ProPublica, "How a PG&E Contractor With a Sketchy Past Made Millions After California's Deadliest Fire," June 30, 2020, <https://www.propublica.org/article/how-a-pg-e-contractor-with-a-sketchy-past-made-millions-after-californias-deadliest-fire#969990>

¹⁷ Per PG&E's response to Data Requestion CalAdvocates-PGE-R1810007-32, Question 2, January 27, 2021, internal audits by PG&E revealed "41,343 distribution poles assumed to be late based on the recorded pole installation date being greater than 20 years or the absence of the installation date and no corresponding inspection record."

¹⁸ PG&E, *Response to Order Regarding Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1258), November 3, 2020, pp. 3-4.

¹⁹ U.S. District Judge William Alsup, *Order Re Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1247), October 20, 2020, Exhibit A, p. 4.

²⁰ PG&E's 2020 Wildfire Mitigation Plan set a deadline of December 31, 2020 for these inspections. The August 31 date was PG&E's internal target. PG&E, *Response to Order Regarding Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1258), November 3, 2020, pp. 3-4.

²¹ PG&E, *Response to Order Re Monitor Letter*, filed in U.S. District Court for the Northern District of California, November 3, 2020, p. 4.

²² PG&E's responses to Data Request CalAdvocates-PGE-R1810007-29, Question 4, December 18, 2020.

PG&E has failed to complete many asset inspections. PG&E discovered it could not confirm that it had performed intrusive pole inspections on more than 41,000 poles within the timeframes required by General Order 165.²³ Additionally, in March 2021, about a month after it had filed its 2021 WMP, PG&E sent a letter to the Safety Enforcement Division and the WSD stating that it had neglected to properly identify 24 substations in HFTDs for enhanced inspections.²⁴

4. PG&E's 2021 Wildfire Distribution Risk Model significantly changes the risk ranking of its circuit-segments.

For 2021, PG&E is using a new wildfire risk model,²⁵ which yields significantly different risk scores for each circuit compared to the previous model. The new model does not merely revise the old model; it entirely contradicts it.²⁶

Cal Advocates also has concerns related to the validity of the weather models PG&E uses to determine where and when to initiate a PSPS event. These issues are discussed further in Cal Advocates' separate comments on cross-cutting technical issues in wildfire mitigation plans.²⁷

5. High projected costs.

PG&E's projected spending on its WMP in 2021 has increased by more than half in the past year.^{28, 29} This large difference is unexplained by PG&E. Section O of these comments further discusses PG&E's costs associated with covered conductor, which are projected to cost as much as three times what SCE spends per mile.

²³ PG&E's response to Data Requestion CalAdvocates-PGE-R1810007-32, Question 2, January 27, 2021.

²⁴ PG&E's letter to the Safety and Enforcement Division re: PG&E 2019 and 2020 Wildfire Mitigation Plan Update, March 4, 2021.

²⁵ PG&E's 2021 WMP, pp. 4-5.

²⁶ PG&E's presentation on Grid Design and System Hardening, slide 4, February 23, 2021.

²⁷ See *Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities*, March 29, 2021, Section V.B.

²⁸ In its 2020 WMP, PG&E forecast spending \$3.19 billion in 2021. In its 2021 WMP Update, PG&E forecasts spending \$4.96 billion in 2021. This is an increase of 55.5 percent.

²⁹ PG&E's responses to Data Request CalAdvocates-PGE-2021WMP-05, Question 2, February 26, 2021; see also PG&E's 2021 WMP, Table 12.

PG&E is not appropriately scoping its mitigation efforts to be feasible, targeted, and effective. As demonstrated by PG&E's failures elsewhere to prioritize its work, PG&E may be failing to accomplish the most impactful work.

PG&E's significant spending increases will likely exacerbate its managerial shortcomings. PG&E is trying to do everything at once, without focus or setting priorities. Until PG&E can demonstrate that its plan is feasible and maximizes safety for both its workers and the public, its 2021 WMP should not be approved.³⁰

6. Remedies: The WSD should require PG&E to overhaul its WMP to address the fundamental causes of its recent failures.

PG&E's systemic issues are exemplified by a recent internal audit of its intrusive pole inspection program: "There are no documented controls in place for identifying root cause of human errors, potential rework, and continuous issues."³¹

PG&E's 2021 WMP acknowledges "shortcomings and gaps in several programs" in 2020³² and commits to some improvements, such as creating a steering committee³³ to determine where wildfire mitigation work occurs and performing quality assurance on 100 percent of vegetation management work in HFTD areas.³⁴ However, PG&E's 2021 WMP does not meaningfully address the severity of the utility's failures in 2020. Despite the enormous projected cost associated with the 2021 WMP, the WMP does not address the fundamental causes of PG&E's poor oversight of contractors, poor performance in asset inspections, and poor vegetation management.

Many of the issues discussed above and later within these comments were originally brought to light through the efforts of the Federal Monitor, which will no longer have oversight of PG&E after the beginning of 2022. As such, it is critical that stakeholders have confidence in

³⁰ See, e.g., Public Utilities Code Sections 8386(a), 8386(c)(3), 8386(c)(13), and 8386(c)(21).

³¹ PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, Attachment 2 (Confidential). Certain portions of this document are confidential, but the information included here is not.

³² PG&E's 2021 WMP, p. 2.

³³ PG&E's 2021 WMP, p. 5.

³⁴ PG&E's 2021 WMP, p. 48.

PG&E's plan and ability to address its 2020 shortcomings through its 2021 WMP after the Federal Monitor's oversight ends.

Possible remedies to PG&E's shortcomings could include expanding or intensifying the routine quality control elements of each wildfire mitigation program, scheduling more frequent program audits by PG&E's Electric Quality Assurance unit and external auditors, closely tracking the performance of contractors, developing an action plan to reduce worker injuries, and providing detailed workplans demonstrating that PG&E is targeting the maximum risk reduction in the most cost-efficient manner.

Therefore, the WSD should deny PG&E's 2021 WMP and direct PG&E to submit a new plan within 90 days. A revamped WMP should intensively focus on the highest-risk circuits first and on improving management oversight.

B. The WSD should require PG&E to justify the scope of its enhanced vegetation management (EVM) program.

PG&E's workplan for the EVM program is not well designed and will not expeditiously reduce risk. PG&E's approach is to treat all distribution lines in HFTDs over a 14-year period, rather than focusing on essential, near term results on the highest-risk circuits.³⁵

PG&E's EVM program expands vegetation management of distribution lines beyond the requirements of General Order 95, trimming to clearances wider than the required four-foot radial clearance.³⁶ This program also assesses the potential of nearby trees to strike the line, and trims or removes these trees as appropriate.³⁷

Under the EVM program, PG&E plans to treat 1,800 miles per year in 2021 and 2022.³⁸ PG&E operates 25,410 circuit miles of distribution line in HFTD,³⁹ so the EVM program only treats approximately 7.1 percent of HFTD miles per year. PG&E plans to incorporate these enhanced clearances from EVM into routine vegetation management on miles where EVM has been performed, so that the expanded clearances will persist as EVM is performed across HFTD.

³⁵ PG&E's response to Data Requests CalAdvocates-PGE-2021WMP-06, Question 10, February 24, 2021, and CalAdvocates-PGE-2021WMP-10, Question 12, March 3, 2021.

³⁶ PG&E's 2021 WMP, p. 625.

³⁷ PG&E's 2021 WMP, p. 625.

³⁸ PG&E's 2021 WMP, Table 12, Program 7.3.5.15 "Remediation of at-risk species," pp. 664-669.

³⁹ PG&E's 2021 WMP, p. 56.

PG&E plans to continue assessing trees for strike potential by covering about 7.1 percent of HFTD miles per year.⁴⁰ Under this schedule, it will take PG&E over 14 years to fully assess all HFTD distribution circuit miles. When asked to explain its reasoning for targeting only 7.1 percent of HFTD per year, PG&E represented that it “set its target based on the allocated budget associated with the EVM program.”⁴¹ With this circular explanation, PG&E fails to address *why* it is appropriate to assess only one 14th of its system each year for trees with a risk of striking the lines.

About one-fifth of PG&E’s circuit-miles in the HFTDs account for three quarters of the wildfire risk in HFTDs.⁴² The other four-fifths of HFTD circuit-miles are relatively low-risk. Therefore, under its current plan, PG&E will spend approximately 11 of the 14 years of the EVM cycle assessing relatively low-risk miles.⁴³

The WSD should require PG&E to present a detailed justification for the scope of its EVM program, including why it based the mileage of work planned on the allocated budget instead of risk reduction goals, and why addressing the highest-risk circuit miles essentially every 14 years is a reasonable and effective mitigation measure. The WSD should require PG&E to submit this report within 30 days of the WSD’s action statement.⁴⁴

C. The WSD should require PG&E to submit revised 2021 workplans for EVM and system hardening.

PG&E’s EVM and system hardening programs target only a small portion of its circuit miles in HFTDs. In 2021, only about seven percent of PG&E’s HFTD circuit miles will be

⁴⁰ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-10, Question 12, March 3, 2021.

⁴¹ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-06, Question 10, February 24, 2021.

⁴² Specifically, per PG&E’s 2021 Wildfire Distribution Risk Model for vegetation, 405 circuit segments, totaling approximately 5,200 miles, account for 75 percent of the total risk in HFTD. See the following section for additional detail. Analysis of PG&E’s responses to Data Request CalAdvocates-PGE-2021WMP-19, Question 2, March 15, 2021.

⁴³ Per PG&E’s 2021 Wildfire Distribution Risk Model for vegetation, approximately 5,200 miles account for 75 percent of the total risk in HFTD. Per PG&E’s 2021 WMP, p. 56, PG&E has approximately 25,410 miles of overhead distribution circuit in HFTD. At 1,800 miles of EVM per year, the riskiest segments would take approximately $5,200/1,800=2.9$ years, and the remainder will take approximately $(25,410-5,200)/1,800=11.2$ years.

⁴⁴ Pursuant to Public Utilities Code Section 8386.3(a), the WSD is expected to issue an action statement on PG&E’s WMP by May 5, 2021.

treated by EVM, and only about 0.7 percent will be treated with system hardening.⁴⁵ In order to make a meaningful impact on system-wide wildfire risk, these limited-scope programs must be carefully targeted to the highest-risk circuit segments.

1. PG&E’s EVM planning has improved but is still not sufficiently prioritized by risk.

PG&E’s EVM program is not sufficiently targeted to high-risk circuit-segments. PG&E states that it commits to performing at least 80 percent of its 2021 EVM work in the top 20 percent of the risk ranking of circuit segments.⁴⁶

This commitment should be easy to achieve since, as Table 1 shows, only a small fraction of circuit-segments account for the bulk of the vegetation-related risk on PG&E’s system.^{47, 48} Yet PG&E’s EVM workplan does not live up to this commitment: only 68 percent of the work⁴⁹ in PG&E’s 2021 Certified EVM plan is targeted to the riskiest 20 percent of circuit-miles.^{50, 51}

Moreover, just 66 extremely risky circuit-segments account for the top 20 percent of the cumulative risk on PG&E’s distribution system. Although PG&E should be intensely focused on these circuit-segments, less than 12 percent of EVM work is targeted at these highest-risk circuit-segments.⁵² This is far below PG&E’s stated commitment of 80 percent.⁵³

⁴⁵Per page 56 of PG&E’s 2021 WMP, PG&E has approximately 25,410 overhead distribution circuit miles in HFTD. Per Table PG&E-7.1-2 on p. 293, PG&E is targeting 1,800 miles for EVM, and 180 miles for system hardening, which amount to approximately 7% and 0.7%, respectively.

⁴⁶ PG&E’s 2021 WMP, p. 47.

⁴⁷ Per a discussion between Cal Advocates and PG&E on March 12, 2021, PG&E ranks its circuits by the attribute “mean_mavf_core_risk,” which represents the average risk along the circuit segment as determined by the 2021 Wildfire Distribution Risk Model. PG&E confirmed this understanding in its response to Data Request CalAdvocates-PGE-2021WMP-19, Question 1, March 15, 2021.

⁴⁸ Analysis of PG&E’s responses to Data Request CalAdvocates-PGE-2021WMP-19, Question 2, March 15, 2021.

⁴⁹ PG&E expects to perform 1,263 out of 1,859 miles of EVM on these segments, which is 68 percent.

⁵⁰ PG&E’s 2021 Certified EVM workplan. PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-10, Question 5, March 3, 2021.

⁵¹ PG&E’s 2021 Vegetation Risk scores. PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-19, Question 2, March 15, 2021.

⁵² PG&E expects to perform 217 out of 1,859 miles of EVM on these segments, which is 11.7 percent.

⁵³ These 66 segments have a cumulative length of only 577 miles. However, even interpreting PG&E’s statement to suggest that 80% of EVM miles will be targeted within the 20% of HFTD miles that represent the most risk (approximately 5082 miles), only approximately 68% of EVM miles appears to be

If PG&E were to focus on high-risk circuit segments, it could perform EVM on all 66 circuit-segments that account for the first 20 percent of the cumulative risk. These 66 segments represent 577 overhead circuit-miles, far less than the annual EVM target of 1,800 miles. Instead, PG&E’s workplan inexplicably calls for EVM on less than half of these miles in 2021. At minimum, PG&E should be able to treat all of these segments before the 2022 wildfire season).

Table 1 High-risk Circuit-Segments According to PG&E’s Vegetation Risk Scores				
	Number of circuit-segments	Number of circuit-miles	Miles with EVM scheduled in 2021	Percentage of EVM workplan
Top 20% of the total vegetation risk	66	577	217	12%
Top 75% of the total vegetation risk	405	5,242	1,263	68%
All distribution circuit-segments in HFTD	3,100	25,410	1,859*	100%
* PG&E intends to perform 1,800 miles of EVM projects in 2021, but the workplan includes 1,859 miles of projects.				

In short, PG&E continues to fail to prioritize risk, just as it did in 2019 and 2020. The Federal Monitor observed that PG&E completed the majority of its 2019 EVM work in relatively low-risk portions of its HFTDs.⁵⁴ Similarly, an analysis of PG&E’s 2020 EVM work shows that less than a quarter of PG&E’s 2020 EVM work was performed in the riskiest 20 percent of circuit-miles as identified by PG&E’s 2020 risk model.⁵⁵ Although PG&E’s 2020 risk model is limited, it is likely that these riskiest 20 percent of circuit-miles represented the overwhelming

targeted within these segments.

⁵⁴ Federal Monitor’s letter to Judge Alsup, (Case No. 14-CR-00175-WHA Doc. No. 1247-1), p. 2, October 16, 2020.

⁵⁵ PG&E performed 23 percent of its EVM work on the riskiest 20 percent of circuit-miles (approximately 5082 miles). Analysis of PG&E’s responses to Data Request CalAdvocates-PGE-2021WMP-10, Question 8, March 3, 2021.

majority of the total wildfire risk in HFTD.⁵⁶ Therefore, PG&E performed a small fraction of its EVM work in the places its risk model indicated as priorities.

PG&E did not appropriately prioritize its 2019 or 2020 EVM work to the highest-risk circuit segments, and its 2021 workplan still does not appropriately target EVM to maximize risk mitigation.

2. PG&E's system hardening plan does not target the highest-risk HFTD miles.

PG&E's 2021 system hardening workplan⁵⁷ poses similar concerns as its EVM plan. The wildfire risk on PG&E's distribution system is heavily concentrated in a few circuit-segments, but PG&E's system hardening plan does not focus on these segments.

PG&E's 2021 system hardening workplan has a limited scope. The workplan includes approximately 284 miles of potential covered conductor and undergrounding work in 2021.⁵⁸ PG&E only plans to harden 180 miles in 2021.

⁵⁶ PG&E's 2020 risk model only allowed for relative ranking of risk, and did not calculate an absolute risk value, so it is not possible to determine what percentage of the total risk was represented by a given circuit-segment. However, judging by the output from the 2021 Wildfire Distribution Risk Model (and PG&E's presentation at the WMP workshop on February 22-23, 2021), it is likely that the riskiest 20 percent of circuit miles represented a large portion of the total wildfire risk in HFTD.

⁵⁷ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-10, Question 6, March 3, 2021.

⁵⁸ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-16, Question 5, March 10, 2021. Note, PG&E's system hardening work plan includes an additional 10.6 miles of line removal and remote grid, which was omitted from this analysis.

<p style="text-align: center;">Table 2 High-risk Circuit-Segments According to PG&E’s Equipment Risk Scores</p>				
	Number of circuit-segments	Number of circuit-miles	Miles with hardening planned in 2021-2022*	Percentage of workplan
Top 20% of the total equipment risk	154	1,292	96	34%
Top 75% of the total equipment risk	758	9,168	197	69%
All distribution circuit-segments in HFTD	3,635	25,410	284	100%
<p>* PG&E intends to perform 180 miles of system hardening projects in 2021 but has identified 284 miles of covered conductor and undergrounding projects.</p>				

When ranked by the average equipment failure risk along each segment, 758 circuit segments (totaling approximately 9,168 circuit miles) account for approximately 75 percent of PG&E’s cumulative total equipment risk in HFTD.⁵⁹ At PG&E’s proposed pace (even if PG&E increases its pace in 2022 as planned),⁶⁰ it will take *over 20 years* to harden the high-risk segments.⁶¹ Yet nearly a third of PG&E’s proposed covered conductor and undergrounding miles fall outside the high-risk circuit-segments.

To materially reduce wildfire risk, PG&E needs to focus its system hardening efforts on the very riskiest distribution circuit-segments. Unfortunately, PG&E is not doing so. About 5 percent of PG&E’s overhead circuit miles in the HFTD account for 20 percent of PG&E’s cumulative total equipment-related risk.⁶² Yet only about a third of the planned system hardening miles fall within these extremely risky circuit segments.

⁵⁹ Analysis of PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-19, Question 3, March 15, 2021.

⁶⁰ PG&E states that it will harden 470 circuit-miles in 2022. PG&E’s 2021 WMP, Table 12.

⁶¹ Approximately 9,168 circuit-miles constitute 75% of PG&E’s cumulative total equipment risk in the HFTD. If PG&E performs 180 miles of hardening in 2021 and 470 miles of hardening in each subsequent year, it would complete 9,110 miles in 20 years.

⁶² These are the 154 circuit-segments that rank highest according to equipment risk in PG&E’s risk model. They encompass 1,292 circuit-miles.

PG&E's system hardening workplan does not primarily target the very highest risk segments. The scope of the program also covers 100 miles more than PG&E will actually treat in 2021, so the precise targeting of the program cannot be accurately assessed at this stage.⁶³

3. Remedies: The WSD should require updated 2021 workplans from PG&E.

PG&E has not demonstrated that it is targeting programs with narrow scopes (EVM and system hardening) to high-risk circuit segments. The WSD should require PG&E to provide updated 2021 workplans for its EVM and system hardening initiatives. Additionally, PG&E should be required to explain the apparent discrepancies noted above, to show how it is targeting 80 percent of its EVM work to the riskiest 20 percent of circuit-segments, and how it is targeting system hardening to maximize risk reduction.

The WSD should require PG&E to submit updated workplans for EVM and system hardening, when PG&E submits a revised WMP following denial. PG&E should submit updated workplans on a quarterly basis throughout the rest of the 2020-2022 WMP cycle.

D. The WSD should require PG&E to track the quality of work of individual contractors, and develop specific action plans to address underperforming contractors.

PG&E does not exert meaningful oversight over its contractors. Several PG&E internal audits have revealed that contractors have failed to follow procedures or were unaware of the correct procedures that needed to be followed.⁶⁴ In other cases, contractors have performed poor vegetation management work⁶⁵ or acted without securing required permits.⁶⁶

⁶³ The 284 miles of projects represent the current potential scope of the system hardening program (some of which may occur in 2022).

⁶⁴ PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, and CalAdvocates-PGE-2021WMP-03, Questions 1 and 6, February 17, 2021.

⁶⁵ Federal Monitor's Letter to Judge Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), October 16, 2020, attached as Exhibit A to U.S. District Judge William Alsup's *Order Re Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1247), October 20, 2020.

⁶⁶ PG&E's response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, Question 3, January 8, 2021.

1. Contractors have failed to follow procedures.

PG&E provided Cal Advocates with two audit reports from its internal Electrical Quality Assurance group.⁶⁷ Findings from these audit reports revealed that at least thirty crew personnel and five supervisors from the contractors PG&E employed to conduct Pole Test & Treat⁶⁸ were unaware of PG&E's procedure (TD 2325P-01) that they were supposed to follow.⁶⁹ Two of the five supervisors created their own procedures to follow.⁷⁰ PG&E staff responsible for supervising the contractors were also unaware that there had been a revision to the approved procedure on November 15, 2019.⁷¹

The internal audit turned up similarly troubling flaws in the quality control process for Pole Test & Treat inspections. In this instance, PG&E did not provide a quality control procedure to contractors.⁷² The manual created and used by the contractor "did not follow PG&E guidelines."⁷³ The audit also noted "inconsistent handling of failures due to lack of procedure."⁷⁴

In 2020, two contract crews used the wrong equipment to identify the primary cable and spiked the incorrect cable, failing to follow PG&E's procedures and causing an unplanned outage.⁷⁵ In another case, the contract crew did not know the difference between a load-break and dead-break primary elbow,⁷⁶ and pulled an energized dead-break elbow from a junction box,

⁶⁷ PG&E's response to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021.

⁶⁸ Pole Test and Treat, or PT&T, refers to intrusive pole inspections, per PG&E's 2021 WMP, p. 601.

⁶⁹ PG&E's response to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021.

⁷⁰ PG&E's response to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021.

⁷¹ PG&E's response to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021.

⁷² PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, Attachment 2 (Confidential). Certain portions of this document are confidential, but the information included here is not.

⁷³ PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, Attachment 2 (Confidential). Certain portions of this document are confidential, but the information included here is not.

⁷⁴ PG&E's responses to Data Request CalAdvocates-PGE-R1810007-32, Question 1, January 27, 2021, Attachment 2 (Confidential). Certain portions of this document are confidential, but the information included here is not.

⁷⁵ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-03, Question 6, February 17, 2021.

⁷⁶ Dead-break and load-break elbows are types of connectors for underground cable, found in pad-mounted electrical equipment. PG&E's response to Data Request CalAdvocates-PGE-2021WMP-03,

leading to another unplanned outage.⁷⁷ In response to these incidents, PG&E stated it “sent a guidance tailboard of the PG&E requirement to all Electric Distribution Contractors” and “PG&E discussed the incident and learnings with all Electric Distribution Contractors. We also sent the attached tailboard communication on Primary [Underground] Separable Terminations.”⁷⁸ In only one case did PG&E report placing a vendor on a safety stand-down and requiring them to develop a Safety Corrective Action Plan.⁷⁹

In summary, PG&E’s response to cases where the vendor was unaware of or did not follow procedures often amounted to a reminder of how procedures should have been followed.⁸⁰ In most cases, PG&E did not investigate further into the quality of other work the same vendor had performed, nor require full retraining on the topic.⁸¹ PG&E’s responses to these missteps fail to address the root causes of the mistakes.

2. Contractors did not secure required permits.

Following the CZU Lightning Complex Fires in August 2020, PG&E contractors conducted tree clearing vegetation management work in the Santa Cruz area. This work produced a set of implementation failures that exemplify PG&E’s ineffective management of contractors.

CAL FIRE, the California Coastal Commission, and the Central Coast Regional Water Quality Control Board sent multiple notices to PG&E stating that the utility had not filed for the appropriate permits for tree removal and grading work, and that PG&E was in violation of regulations for failing to water seasonal roads, contributing to erosion.⁸² CAL FIRE’s first notice to PG&E on October 30, 2020 stated that over the previous two years, PG&E had filed the required permits for similar work, but had failed to file any in this instance.⁸³ PG&E objected to

Question 6, February 17, 2021.

⁷⁷ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-03, Question 6, February 17, 2021.

⁷⁸ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-03, Question 6, February 17, 2021.

⁷⁹ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-03, Question 6, February 17, 2021.

⁸⁰ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-03, Question 6, February 17, 2021.

⁸¹ PG&E’s response to Data Request CalAdvocates-PGE-R1810007-33, Question 4, February 2, 2021.

⁸² PG&E’s response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, Question 3, January 8, 2021.

⁸³ PG&E’s response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, Question 3, January

the notice of violation, claiming that it was under no obligation to file a utility right-of-way exemption.⁸⁴ The dispute remains unresolved.

In addition to failing to secure the proper permits, the contractors trimmed or removed over 6,400 trees that were farther from the nearest PG&E asset than the height of the tree, meaning that the tree could not strike a PG&E asset even if it fell directly toward the line.⁸⁵ In over 100 cases, the trimmed tree was more than 1,000 feet from the nearest PG&E asset.⁸⁶ PG&E has not explained why it trimmed or removed these trees.⁸⁷

Although the restoration work after the CZU Lightning Complex Fires was not directly related to PG&E's 2020 WMP, it is similar in nature to the vegetation management work that PG&E performs as part of its WMP with some of the same contractors.⁸⁸ PG&E's inability to manage post-fire restoration work raises doubts about its ability to effectively manage its WMP programs and contractors.

3. Poor business practices for screening and overseeing contractors.

PG&E's business relationship with Bay Area Concrete demonstrates poor business practices, including inadequate screening of suppliers and weak oversight of contract work. PG&E used the services of Bay Area Concrete and its affiliates to (1) build a slurry disposal center in Paradise, California, to dispose of debris from the 2018 Camp fire, to (2) build a slurry

8, 2021.

⁸⁴ PG&E's response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, Question 3, January 8, 2021. This issue will be further addressed in a pending complaint proceeding at the Commission, Complaint (C.) 21-01-014.

⁸⁵ Cal Advocates' analysis of geospatial data provided in response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, Question 4, January 8, 2021.

⁸⁶ Cal Advocates' analysis of GIS data provided in response to Data Request CalAdvocates-PGE-NonCase-MGN-12142020, question 4, January 8, 2021.

⁸⁷ PG&E's response to Data Request CalAdvocates-PGE-NonCase-MGN-02172021, March 2, 2021.

⁸⁸ In response to Data Request CalAdvocates-PGE-NonCase-MGN-02172021, Question 2, March 2, 2021, PG&E provided a list of contractors who performed the restoration work after the CZU Lightning Complex Fires. In response to Data Request CalAdvocates-PGE-R1810007-34, Question 1, January 29, 2021, PG&E provided a list of all contractors who performed WMP-related work for the utility from 2018 to 2020. Several contractors appear on both of these lists.

dumpsite in 2019 at a PG&E substation located in Petaluma, California, and to (3) help build a base camp for the 2019 Kincadee fire.^{89, 90}

First, PG&E's reliance on Bay Area Concrete reveals an insufficient process of screening contractors for ethical standards. Bay Area Concrete had previously operated an "unlicensed dump" that engendered concerns about dust and water pollution.⁹¹ Shortly before Bay Area Concrete started to work for PG&E on the Camp Fire clean-up, the city of Hayward, California, had denied the company a permit to continue operating.⁹² With appropriate due diligence, PG&E should have avoided employing this firm.

Second, PG&E showed poor business practices in its relationship with Bay Area Concrete. PG&E did not have a written contract with the supplier for either the Paradise slurry disposal center or the Petaluma slurry dumpsite.⁹³ The lack of a written contract hinders effective oversight of work performed for PG&E due to unclarity about the expected scope, quality, and price of the work to be performed. Additionally, the lack of a written contract has contributed to disputes between PG&E and its supplier. PG&E disputes the supplier's claim that PG&E agreed to pay for its services.⁹⁴

⁸⁹ ProPublica, "How a PG&E Contractor With a Sketchy Past Made Millions After California's Deadliest Fire," June 30, 2020, <https://www.propublica.org/article/how-a-pg-e-contractor-with-a-sketchy-past-made-millions-after-californias-deadliest-fire#969990>

See also LegalReader, "PG&E Files Counterclaim in Recycling Company Lawsuit," March 8, 2021, <https://www.legalreader.com/pg-e-files-counterclaim-in-recycling-company-lawsuit/>; and ProPublica, "Lawsuit Reveals New Allegations Against PG&E Contractor Accused of Fraud" Feb. 26, 2021, <https://www.propublica.org/article/lawsuit-reveals-new-allegations-against-pg-e-contractor-accused-of-fraud>

⁹⁰ PG&E's response to Data Request CalAdvocates-PGE-NonCase-RK-07032020, Questions 3-4, 13-14, and 22-25, August 7-14, 2020.

⁹¹ ProPublica, "How a PG&E Contractor With a Sketchy Past Made Millions After California's Deadliest Fire," June 30, 2020.

⁹² ProPublica, "How a PG&E Contractor With a Sketchy Past Made Millions After California's Deadliest Fire," June 30, 2020.

⁹³ PG&E's response to Data Request CalAdvocates-PGE-NonCase-RK-07032020, Questions 2-5 and 12-15, August 7, 2020.

⁹⁴ PG&E's response to Data Request CalAdvocates-PGE-NonCase-RK-07032020, Questions 3 and 13, August 7, 2020.

In sum, PG&E's business relationship with Bay Area Concrete and its affiliates illustrates once again how PG&E has failed to effectively manage and oversee its suppliers.

4. Contractors did not perform high-quality vegetation management.

On October 16, 2020, the Federal Monitor sent a letter to U.S. District Judge William Alsup detailing a number of concerns with PG&E's enhanced vegetation management program. Among other items, the Federal Monitor found a tree contacting a line, which had been marked for removal twice, but never removed.⁹⁵ When asked how this had occurred, PG&E stated that a specific pre-inspector working for a vegetation management contractor had failed to follow the proper procedure to create a hazard notification to trigger the removal of the tree.⁹⁶ PG&E stated that the pre-inspector's supervisor had also failed to catch the omission.⁹⁷

PG&E responded by holding a mandatory "stand down" to review the Vegetation Management Hazard Notification Procedure with the vendor⁹⁸ and reviewing other work performed by the individual pre-inspector. However, PG&E did not bother to review other work supervised by the pre-inspector's supervisor, nor other work performed by the vendor as a whole.⁹⁹ This response is insufficient: PG&E made no effort to identify other related problems, or examine the root causes of the problem.

It is notable that PG&E has stated that its work verification process does not track results by vendor.¹⁰⁰ This suggests that PG&E is not properly tracking the quality of work performed by individual contractors, making it unlikely that a vendor's repeated poor performance would be easily discovered.

⁹⁵ Federal Monitor's Letter to Judge Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), pp. 1-2, October 16, 2020.

⁹⁶ PG&E's response to Data Request CalAdvocates-PG&E-R1810007-29, Question 1, December 18, 2020.

⁹⁷ PG&E's response to Data Request CalAdvocates-PG&E-R1810007-29, Question 1, December 18, 2020.

⁹⁸ PG&E's response to Data Request CalAdvocates-PG&E-R1810007-29, Question 1, December 18, 2020.

⁹⁹ PG&E's response to Data Request CalAdvocates-PG&E-R1810007-33, Question 4, February 2, 2020.

¹⁰⁰ PG&E's response to Data Request CalAdvocates-PG&E-R1810007-33, Questions 4 and 10, February 2, 2020.

At the PG&E Board of Directors meeting held on October 28, 2020, the Federal Monitor presented on several issues raised in its letter to Judge Alsup on October 16, 2020.¹⁰¹ However, the minutes of the Board of Directors meeting contain no specific recommendations from the Board to management based on the discussion.¹⁰² While PG&E's 2021 WMP does address its 2020 shortfalls in vegetation management,¹⁰³ the failure of the Board to make specific, actionable recommendations to management regarding the deficiencies noted by the Federal Monitor reveals a lack of commitment to improvement.¹⁰⁴

5. Remedies: The WSD should require PG&E to address its poor contractor oversight.

The WSD should require PG&E to improve its oversight of contractors, including tracking the quality of work of individual contractors, and developing specific action plans to address underperforming contractors. PG&E should provide this action plan when it submits a revised WMP following the denial of its 2021 WMP.

Among other things, PG&E should expand quality control of work performed by vendors with a history of flawed work. Additionally, as part of this effort, the WSD should require PG&E to schedule semi-annual internal audits of WMP initiatives that have been worked on by contractors. The results of these audits should be provided to the WSD and stakeholders.

E. The WSD should require PG&E to perform annual internal audits of its routine and enhanced vegetation management programs.

PG&E is not performing adequate routine vegetation management (VM) or enhanced vegetation management (EVM) work. The Federal Monitor's October 2020 letter noted "a series of process breakdowns" in PG&E's EVM work.¹⁰⁵

¹⁰¹ PG&E's Advice Letter 6068-E, January 29, 2021, Attachment 1, Board of Directors (BOD) and Safety & Nuclear Oversight (SNO) Committee Meeting Minutes, p. Atch1-64.

¹⁰² PG&E's response to Data Request CalAdvocates-PGE-NonCase-AWM-02112021, Question 2, February 26, 2021.

¹⁰³ PG&E's 2021 WMP, pp. 46-48.

¹⁰⁴ Cal Advocates previously expressed concern that PG&E's Board of Directors and Safety and Nuclear Oversight Committee had not provided any formal safety recommendations over three meetings in 2019. See Cal Advocates' letter to the Safety and Enforcement Division on December 17, 2019 regarding PG&E's Advice Letter 5700-E.

¹⁰⁵ Federal Monitor's letter to Judge William Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), p.

In one instance, the Federal Monitor observed a tree had been flagged for removal twice but was not removed.¹⁰⁶ PG&E attributes this to an error by the vendor who performed pre-inspection along the circuit segment associated with this tree.¹⁰⁷ However, PG&E never performed EVM work verification on the segment to verify that trees were worked as required by the program,¹⁰⁸ despite claims that PG&E performs work verification on 100 percent of EVM miles.¹⁰⁹ PG&E states that this was because this segment was not actually part of the EVM scope at the time the pre-inspector identified the tree,¹¹⁰ although this appears to differ from the Federal Monitor's understanding.

The Federal Monitor found multiple other issues with the EVM program:

- In 2019, the majority of PG&E's EVM miles were completed along relatively low-risk portions of its circuits in HFTDs, with 77 percent of the 2019 EVM mileage requiring no EVM tree trimming work.¹¹¹
- In 2020, PG&E performed 1,835 miles of EVM work, of which 14 percent failed work verification the first time.¹¹²
- Only 23 percent of PG&E's 2020 EVM work was performed in the riskiest 20 percent of circuit miles as identified by PG&E's 2020 risk model, which illustrates a failure to properly allocate resources to risk mitigation.¹¹³

1-2, October 16, 2020:

We have attached a finding from an October 4, 2020 inspection, during which we identified a tree that PG&E was supposed to have removed in mid-August, but twice failed to remove, seemingly because of a series of process breakdowns. Following the Monitor team's identification of the tree and immediate escalation to PG&E management, PG&E removed the tree within 24 hours.

¹⁰⁶ Federal Monitor's letter to Judge William Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), p. 1-2, October 16, 2020.

¹⁰⁷ PG&E's response to Data Request CalAdvocates-PGE-R181007-29, Question 1, December 18, 2020.

¹⁰⁸ PG&E's responses to Data Request CalAdvocates-PGE-R181007-33, Question 3, February 2, 2021, and CalAdvocates-PGE-2021WMP-06, Question 15, February 26, 2021.

¹⁰⁹ PG&E's 2020 WMP, updated February 28, 2020, p. 5-191.

¹¹⁰ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-06, Question 15, February 26, 2021.

¹¹¹ Federal Monitor's Letter to Judge Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), October 16, 2020, p. 3.

¹¹² PG&E's 2021 WMP Supplemental Filing, February 26, 2021, p. 53.

¹¹³ Analysis of PG&E's responses to Data Request CalAdvocates-PGE-2021WMP-10, Question 8, March

The Federal Monitor also observed EVM problems in 2019, with nearly a third of EVM work failing to pass work verification the first time.^{114, 115} In fact, the work failed verification because it had not been performed: PG&E sent work verification inspectors to locations where trees had not yet been trimmed.¹¹⁶

PG&E's failures in vegetation management work have been implicated in recent catastrophic fires as well. For example, PG&E has admitted to failing to follow-up on removal work on a number of trees flagged for removal following the Carr Fire in 2018.¹¹⁷ This unfinished work may have contributed to the deadly Zogg Fire in 2020. CAL FIRE has determined that the fire was ignited by a gray pine that was rooted near PG&E's lines.^{118, 119, 120} PG&E "believes the Gray Pine of interest may have been identified for removal (but not

3, 2021.

¹¹⁴ In 2019, 1,761 out of 2,573 miles (or 68 percent) of PG&E's EVM passed work verification on the first attempt. PG&E performed PG&E's 2021 WMP Supplemental Filing, p. 53, February 26, 2021.

¹¹⁵ Federal Monitor's 2019 Letter to Judge Alsup (Case No. 14-CR-00175-WHA), July 26, 2019, p. 2: "PG&E's contractors are missing numerous trees that should have been identified and worked under applicable regulations and the EVM program. Thus, not only is PG&E falling short of its EVM goals for the year, but the quality of the completed work is questionable."

¹¹⁶ PG&E's September 2020 WMP Quarterly Report, p. 164; PG&E's response to Data Request CalAdvocates-PGE-R181007-27, Question 3, October 23, 2020.

¹¹⁷ PG&E, *Response to Request for Follow Up by PG&E Concerning its October 26 Submission* (Case No. 14-CR-00175-WHA Doc. No. 1265), November 18, 2020, pp. 22-26.

¹¹⁸ CAL FIRE, *News Release: CAL FIRE Investigators Determine Cause of the Zogg Fire*, March 22, 2021: "After a meticulous and thorough investigation, CAL FIRE has determined that the Zogg Fire was caused by a pine tree contacting electrical distribution lines owned and operated by Pacific Gas and Electric (PG&E) located north of the community of Igo." <https://www.fire.ca.gov/media/u2kh4nyd/zogg-fire-press-release.pdf>

¹¹⁹ ABC News, "California's Zogg Fire caused by tree hitting PG&E power lines, Cal Fire says," March 23, 2021, <https://abcnews.go.com/US/californias-zogg-fire-caused-tree-hitting-pge-power/story?id=76628527>

¹²⁰ PG&E, *Response to Order Requesting Information Re Zogg Fire and Order for Further Information Re Zogg Fire* (Case No. 14-CR-00175-WHA Doc. No. 1250), October 26, 2020, p. 6; PG&E, *Response to Request for Follow Up by PG&E Concerning its October 26 Submission* (Case No. 14-CR-00175-WHA Doc. No. 1265), November 18, 2020, pp. 21-22.

removed) during restoration efforts following the Carr Fire in 2018.”¹²¹ ¹²² PG&E has made conflicting statements about whether this tree was marked for removal.¹²³

These issues, as well as concerns with PG&E’s management of contractors who perform vegetation management and other work for the utility (noted in section D), demonstrate faults in PG&E’s ability to effectively target and implement its vegetation management programs.

Given the importance of vegetation management in reducing wildfire risk, the WSD should require PG&E to perform annual internal audits to identify all process breakdowns within its routine and enhanced vegetation management programs. This internal audit should specifically identify the underlying causes of the vegetation management flaws identified in the Federal Monitor’s letter and include specific corrective actions to mitigate these causes systemwide. Cal Advocates recommends that the WSD require this internal audit of PG&E’s programs on an annual cycle and that PG&E promptly share the findings with stakeholders via the service list of R.18-10-007. Within 30 days after the audit, PG&E should be required to submit a corrective action plan for all problems that have been identified.

F. The WSD should require PG&E to audit its asset inspections and recordkeeping practices, and present corrective actions.

PG&E’s asset inspections suffered a number of oversights and process breakdowns in 2020. According to the Federal Monitor, PG&E failed to perform all 967 enhanced climbing inspections of 500 kV towers in HFTD prior to peak fire season, despite PG&E’s internal goal to complete these inspections by August 31, 2020.¹²⁴ Furthermore, the Federal Monitor also found significant shortcomings in asset inspections in 2019:

The Monitor team found issues likely missed by PG&E’s inspectors on approximately 12 percent of the assets our team

¹²¹ “PG&E currently believes the Gray Pine of interest may have been identified for removal (but not removed) during restoration efforts following the Carr Fire in 2018, based on certain records recently reviewed by PG&E concerning that restoration work.” PG&E, *Response to Request for Follow Up by PG&E Concerning its October 26 Submission* (Case No. 14-CR-00175-WHA Doc. No. 1265), November 18, 2020, p. 22.

¹²² Judge William Alsup, *Questions for Follow-Up* (Case No. 14-CR-00175-WHA Doc. No. 1307), February 18, 2020, p. 5.

¹²³ Judge William Alsup, *Questions for Follow-Up* (Case No. 14-CR-00175-WHA Doc. No. 1307), February 18, 2020, pp. 1-2.

¹²⁴ Letter from the Federal Monitor to Judge Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), pp. 3-4, October 16, 2020.

inspected, and [PG&E] inspectors failed to collect basic asset information for PG&E’s recordkeeping purposes on approximately one-third of assets inspected.¹²⁵

In PG&E’s November 2020 response to the Federal Monitor’s findings, PG&E stated, “Due to operational delays associated with digitizing inspection forms for 500 kV towers...these inspections [enhanced climbing inspections of 500kV towers] were not started until early August [2020].”¹²⁶ Digitizing forms is not a valid reason to delay critical inspections of high-risk assets given that PG&E could have performed inspections with paper forms.

Moreover, when PG&E finally did begin the climbing inspections of transmission towers in early August, the inspections began outside HFTD rather than in the highest-risk areas, due to a lack of direction provided to the execution team.^{127, 128} When asked who was responsible for setting priorities about where to perform the inspections, PG&E acknowledged that the decisions were not guided by risk:

There was no precise starting point specified for 2020 tower climbing inspections. The in-scope transmission structures were provided to the execution team with no specific physical starting point.¹²⁹

This type of management failure demonstrates PG&E’s continued failure to make safety central to its culture. It is inexcusable that PG&E cannot execute inspections based on risk, or even broadly prioritize areas with the greatest risk.

Separate from PG&E’s failure to meet its goals for tower climbing inspections, an internal audit by PG&E’s Electric Quality Assurance unit in September 2020 revealed that 41,343 distribution poles did not have records demonstrating that intrusive (Pole Test & Treat)

¹²⁵ Letter from the Federal Monitor to Judge Alsup (Case No. 14-CR-00175-WHA Doc. No. 1247-1), p. 3, October 16, 2020.

¹²⁶ PG&E, *Response to Order Re Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1258), November 3, 2020, p. 4.

¹²⁷ “At that time, the work execution group was not given specific guidance on where to initiate the inspections following the delay, and the decision was made to start in non-HFTD areas where about 60% of the 500 kV towers are located. This was a process breakdown.” PG&E, *Response to Order Re Monitor Letter* (Case No. 14-CR-00175-WHA Doc. No. 1258), November 3, 2020, p. 4.

¹²⁸ PG&E’s response to Data Request CalAdvocates-PG&E-R1810007-29, Question 4, December 18, 2020.

¹²⁹ PG&E responses to data request CalAdvocates-PGE-R1810007-29, Question 4, December 18, 2020.

inspections were performed within the last 20 years.¹³⁰ PG&E's 2021 WMP states that PG&E actually goes beyond the General Order 165 requirements, and inspects distribution poles every 10 years.¹³¹ However, PG&E was unable to confirm that it has inspection records showing that all poles located with HFTDs had been inspected on either the General Order 165 or PG&E's internal schedule.¹³²

Continuing this pattern of failure, PG&E sent a letter to the Safety Enforcement Division and the WSD on March 4, 2021 stating that PG&E had not inspected 24 hydroelectric substations in HFTDs in 2020, and had also failed to perform enhanced inspections of 5 associated poles in the HFTD in 2019 and 2020.¹³³ These assets were omitted from the scope of the 2020 WMP enhanced inspections.¹³⁴ These omissions raise the question of what other assets PG&E failed to include in its enhanced inspection scope.

PG&E's March 4, 2021 letter also states that PG&E did not have complete asset information for certain hydroelectric facility distribution lines,¹³⁵ which echoes similar findings by the Federal Monitor (noted above in this section).

These examples – from missed inspections, to an inability to produce inspection records, to failing to collect complete asset information – demonstrate systemic disorganization within PG&E's inspection process.

The WSD should require PG&E shareholders to hire a consultant to perform a full audit of its enhanced inspection processes and scope. PG&E should be required to present a report to the WSD identifying corrective actions that address the causal factors that contributed to the

¹³⁰ Intrusive inspections are required at least every 20 years by General Order 165. PG&E's response to Data Request CalAdvocates-PG&E-R1810007-32, Question 2, January 27, 2021.

¹³¹ PG&E's 2021 WMP, p. 584.

¹³² PG&E's response to Data Request CalAdvocates-PGE-2021WMP-09, Question 7, March 4, 2021.

¹³³ The missed inspections were enhanced, ground-based asset inspections, which PG&E planned to perform on 100 percent of distribution poles in HFTD areas in 2019. The five poles were linked to hydroelectric facilities. This issue is unrelated to the intrusive pole inspections discussed above. See PG&E's letter to the Safety and Enforcement Division re: PG&E 2019 and 2020 Wildfire Mitigation Plan Update, March 4, 2021, p. 4.

¹³⁴ PG&E's letter to the Safety and Enforcement Division re: PG&E 2019 and 2020 Wildfire Mitigation Plan Update, March 4, 2021.

¹³⁵ PG&E's letter to the Safety and Enforcement Division re: PG&E 2019 and 2020 Wildfire Mitigation Plan Update, March 4, 2021, p. 3.

issues outlined above. Additionally, the WSD should require PG&E to publicly serve (via the service list of R.18-10-007) the causal evaluation and list of recommendations from the independent contractor it has hired to examine its distribution intrusive pole inspections.¹³⁶

G. The WSD should require PG&E to file regular reports on its quality assurance and control processes for inspections.

PG&E uses vague and noncommittal language to describe PG&E's processes for quality assurance and quality control (QA/QC) of distribution and transmission asset inspections.¹³⁷ For example, PG&E states:

Among other things, quality assurance could mean establishing baseline metrics and measures of program performance to highlight outliers in any inspection process step. Quality controls can be established to identify inspection personnel who report abnormally high or low rates of corrective findings in the field. This could also mean identifying inspection personnel who experience abnormal rates of changes of their initial findings (increased or decreased priority of findings, rejection of findings).¹³⁸

Use of language such as “could mean,” “can be established,” and “could also mean” is not responsive or helpful. It indicates a lack of commitment to a specific, actionable process to ensure that all inspections are performed adequately, and that underperforming inspectors are retrained or removed from inspection work (as appropriate). This vague language also makes it harder to hold PG&E accountable as such weak language could enable PG&E to avoid enforcement if its failures persist.

In addition to using vague language, PG&E is asserting that its QA/QC processes for asset inspections are relatively new. When asked how many times PG&E has implemented controls related to “identifying inspection personnel who experience abnormal rates of changes

¹³⁶ PG&E hired an independent contractor to support a causal evaluation to investigate this item and recommend corrective actions. PG&E's response to Data Request CalAdvocates-PGE-2021WMP-09, Question 7, March 4, 2021.

¹³⁷ PG&E's 2021 WMP, Section 7.3.4.14, pp. 618-620.

¹³⁸ PG&E's 2021 WMP, p. 618, emphasis added.

of their initial findings,” PG&E responded that it did not have a procedure in place in 2020.¹³⁹ As such, the effectiveness of PG&E’s QA/QC controls related to this issue cannot be verified.

PG&E is the only large utility that does not perform quality control in the field for asset inspections. While PG&E performs “inspection work verification sampling and data analysis” to “enable timely corrective interventions,”¹⁴⁰ this quality control process entails only a review of the inspection records (including photos) and does not include a physical reinspection of assets in the field.¹⁴¹ By contrast, SCE states that it plans to perform QC inspections of completed inspections for 5,000 transmission, distribution, and generation structures in HFTD areas,¹⁴² and SDG&E randomly selects 1.5% of electric inspections to reassess.¹⁴³ In a meeting between Cal Advocates and representatives from PG&E, SCE, and SDG&E on March 12, 2021, SCE and SDG&E both clarified that their QC processes include a physical reinspection of the asset.

Detailed and accurate asset inspections are vital to ensure PG&E has up-to-date knowledge of potential failures, early enough to correct them before they can cause an outage or ignition. However, PG&E’s stated process to assure the quality of these inspections is vague and largely untested.

The WSD should require PG&E to file a quarterly or semi-annual report detailing any changes to its inspection QA/QC processes. In these reports, PG&E should be required to provide the following:

- The number of inspection personnel (either employee or contractor) who, to date, have reported abnormally high or low rates of corrective findings in the field;
- The number of inspection personnel who, to date, have observed abnormal rates of change of their initial findings;¹⁴⁴

¹³⁹ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-09, Question 10, March 2, 2021.

¹⁴⁰ PG&E’s 2021 WMP, p. 619: “inspection work verification sampling and data analysis seek to rapidly sample and monitor performance to enable timely corrective interventions such as re-training, guidance clarification, and even re-inspection.”

¹⁴¹ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-09, Question 11, March 2, 2021.

¹⁴² SCE’s 2021 WMP, p. 184.

¹⁴³ SDG&E’s 2021 WMP, p. 155.

¹⁴⁴ Per PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-09, Question 10, February 25, 2021, PG&E does not yet have specific, objective criteria for what constitutes “abnormal rates of change” in this context. PG&E is developing this metric, with intent to implement it in the second quarter of 2021.

- The number and percentage of inspections (of each type) that failed QC on the first attempt;
- The number of cases in which an inspection QA/QC process has resulted in a re-inspection of assets;
- For each case above, the short-term and long-term corrective actions PG&E has taken to remediate the issue.

The WSD should also convene a technical working group with the three large IOUs and interested stakeholders to develop best practices for QA/QC. This working group should address best practices for asset and enhanced vegetation management inspections, and how the utilities assure the quality of asset inspections and enhanced vegetation management work that has been completed.

H. The WSD should require PG&E to submit a corrective action plan to address the high number of worker injuries related to wildfire mitigation efforts.

PG&E reports a large number of injuries associated with wildfire mitigation activities in 2019 and 2020. In 2019, PG&E had 92 employee or contractor injuries.¹⁴⁵ In 2020, PG&E had one fatality and 95 injuries (72 of which were contractor injuries associated with vegetation management).¹⁴⁶ Per PG&E's comments on WMP Table 5, these numbers represent the number of OSHA-*recordable* injuries, rather than the number of OSHA-*reportable* injuries which is

¹⁴⁵ PG&E's second supplemental response to Data Request CalAdvocates-PGE-2021WMP-07, Question 12, March 26, 2021.

¹⁴⁶ PG&E's 2021 WMP Errata, Tables 4 and 5, March 17, 2021.

what the WSD requested.¹⁴⁷ As OSHA-recordable injuries encompass a broader range of injuries,¹⁴⁸ meaningful comparisons between PG&E and its peer utilities are not possible.¹⁴⁹

PG&E's original 2021 WMP submission reported inaccurate numbers of injuries and fatalities. PG&E originally reported 53 injuries and 1 fatality in 2019, and 70 injuries in 2020,¹⁵⁰ before correcting these numbers in their March 17, 2021 errata¹⁵¹ and March 26, 2021 revised data request responses.¹⁵² While correcting the errors in the initial filing of PG&E's 2021 WMP, the errata creates a significant discrepancy with PG&E's 2020 WMP.¹⁵³

PG&E's measures implemented to reduce injuries are insufficient. PG&E was unable to provide information for the most common contributing factors to injuries due to vegetation management (the largest category by far), stating that PG&E tracks types of incidents rather than contributing factors.¹⁵⁴ Instead, PG&E provided only cursory descriptions of the types or proximate causes of injuries, such as "Cut, Puncture, Scrape, Noc [sic]"¹⁵⁵ or "Fall/Slip/Trip-To

¹⁴⁷ "PG&E does not generally and centrally track Occupational Safety and Health Administration (OSHA) reportable incidents for contractors." PG&E's 2021 WMP, p. 268.

¹⁴⁸ The wildfire mitigation plan submissions require utilities to report how many employees or contractors suffered "OSHA-reportable" injuries related to wildfire mitigation work. OSHA-reportable injuries are serious, involving inpatient hospitalizations, amputations, loss of an eye, or heart attacks. See 36 Code of Federal Regulations 1904, Subpart E, <https://www.osha.gov/laws-regs/regulations/standardnumber/1904/1904.39>.

Recordable injuries include: "Any work-related injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job; any work-related injury or illness requiring medical treatment beyond first aid; any work-related diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones or teeth, and punctured eardrums" and certain other situations. See <https://www.osha.gov/recordkeeping>.

¹⁴⁹ According to Tables 4 and 5 from their respective WMP submissions, SCE had 5 OSHA-reportable injuries and 1 fatality associated with mitigation activities from 2019 to 2020. SDG&E had no OSHA-reportable injuries or fatalities in 2019 or 2020.

¹⁵⁰ PG&E's 2021 WMP, Tables 4 and 5.

¹⁵¹ PG&E's 2021 WMP Errata, Tables 4 and 5, March 17, 2021.

¹⁵² PG&E's second supplemental response to Data Request CalAdvocates-PGE-2021WMP-07, Question 12, March 26, 2021.

¹⁵³ Per PG&E's Revised 2020 WMP, Table 2, filed February 28, 2020, PG&E reported 1 fatality and 28 injuries associated with wildfire mitigation work in 2019.

¹⁵⁴ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-07, Question 12, March 1, 2021.

¹⁵⁵ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-17, Question 2, March 17, 2021.

Floor/Walkwa [sic]”.¹⁵⁶ In 15 cases, the cause of injury was listed as either “NULL” or “Unknown.”¹⁵⁷

Without properly tracking either the immediate causes or the underlying factors that contribute to worker injuries, PG&E’s ability to implement effective corrective actions to reduce the possibility of injury during its wildfire mitigation activities is hampered. PG&E’s stated measures amount to verifying contractor training records, interviewing vegetation management leadership, and reviewing vendor safety oversight plans.¹⁵⁸ PG&E has not demonstrated that it investigated the causes of injuries that may have been due to unsafe processes and procedures.

PG&E’s efforts to ensure worker safety in other wildfire mitigation initiatives are similarly lacking. For the categories of utility inspection and grid hardening, PG&E states it “has not implemented, and does not plan to implement, any measures...to reduce the number of injuries and fatalities associated with [these categories of work] specifically.”¹⁵⁹

PG&E *does* provide a lengthy list of general improvements such as increasing supervisor field time, safe driving campaigns, making heat exhaustion products available, and improving employee and contractor trainings.¹⁶⁰ These mitigations are likely to address general causes of injury such as exertion or falls, but are unlikely to address injuries due to specific circumstances that may arise in different areas of work. Moreover, PG&E’s list includes actions taken since the beginning of 2019, so it is unclear whether PG&E has taken any action in response to the large numbers of worker injuries that occurred in 2019 and 2020.

While PG&E has taken some steps to reduce the number of injuries associated with WMP initiatives, the level of detail provided, and the inaccuracies in WMP non-spatial Tables 4 and 5, raise concerns with PG&E’s ability to track injuries accurately and to develop effective mitigation strategies.

The WSD should require PG&E to perform an internal audit on worker safety in its vegetation management, asset inspection, and grid hardening programs. The audit should:

¹⁵⁶ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-17, Question 2, March 17, 2021.

¹⁵⁷ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-17, Question 2, March 17, 2021.

¹⁵⁸ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-07, Question 12, March 1, 2021.

¹⁵⁹ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-17, Questions 1 and 3, March 17, 2021.

¹⁶⁰ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-17, Question 5, March 17, 2021.

- Identify the root causes of these worker injuries;
- Examine why the number rose so sharply from 2019 to 2020;
- Investigate longer-term trends for worker injuries occurring in the course of similar work at PG&E (e.g., vegetation management, asset inspections, and grid rebuilding), even if the work occurred prior to PG&E’s first WMP; and
- Identify corrective actions to mitigate any root causes found.

PG&E should also fully explain the errors in its original data tables. The results from these audits should be served via the R.18-10-007 service list by the end of September 2021.

I. The WSD should require PG&E to explain whether and why it continues to install hazardous equipment in HFTD areas.

It appears that PG&E continues to install expulsion fuses, which are considered to be fire hazards, in HFTD areas. The geospatial data PG&E provided with its 2020 Quarter 4 Quarterly Report indicates that 1,529 expulsion fuses were installed in HFTD areas in 2020, and 1,268 were installed in 2019. This is troubling because, as PG&E explains, expulsion fuses have “the potential to spread hot molten metal material which could cause one or more ignitions.”¹⁶¹ Exempt (or non-expulsion) fuses “reduce fire risk.”¹⁶²

Meanwhile, PG&E plans to *replace* 1,843 expulsion fuses in HFTD areas in 2020 and 2021.¹⁶³ If PG&E’s data is accurate, it means that PG&E is installing expulsion fuses in areas with high fire risk even faster than it is removing them due to their fire risk.

While PG&E claims that, “some expulsion fuses have additional safety features, including self-containment capabilities, which enable them to be categorized as exempt,” it was unable to state whether any of the 2,797 fuses it has recently installed in the HFTD meet the requirements to be exempt.¹⁶⁴ Contrary to PG&E’s assertion, the California Code of Regulations states that only a “current limiting non-expulsion fuse” is considered exempt, which does not appear to allow for any exempt expulsion fuses.¹⁶⁵

¹⁶¹ PG&E’s 2021 WMP, p. 486.

¹⁶² PG&E’s 2021 WMP, p. 486.

¹⁶³ PG&E’s 2021 WMP, p. 236.

¹⁶⁴ PG&E’s response to Data Request CalAdvocates-PGE-2021 WMP-20, Question 2, March 16, 2021.

¹⁶⁵ California Code of Regulations, Title 14, § 1255, “Exemptions to Minimum Clearance Provisions -

Installing new equipment that poses a fire hazard, while PG&E is simultaneously working to remove such equipment, is neither prudent nor just and reasonable. Therefore, the WSD and the Commission should clarify that the costs of installing non-exempt fuses, or replacing recently installed non-exempt fuses, in HFTD areas are not recoverable from ratepayers.

J. The WSD should require PG&E to develop and provide a workplan for replacing expulsion fuses in HFTD.

PG&E forecasts replacing approximately 1,200 non-exempt fuses and other non-exempt equipment in HFTDs in 2021.¹⁶⁶ However, as of March 2021, PG&E does not have a workplan for where these fuse replacements will occur.¹⁶⁷ Without a specific workplan, it is impossible to determine if PG&E is effectively targeting these replacements to maximize their risk reduction.

PG&E has approximately 22,000 expulsion fuses in HFTDs,¹⁶⁸ and forecasts replacing about five percent of them in 2021. At this rate, it will take PG&E nearly two decades to remove all the expulsion fuses from the HFTD. By comparison, Bear Valley Electric Service replaced more expulsion fuses than PG&E in 2020, although PG&E's service territory is two thousand times as large.^{169, 170}

Not all of PG&E's circuits in HFTDs have the same risk. As discussed previously, 758 circuit segments account for 75 percent of the total equipment-related wildfire risk in PG&E's

PRC 4292.”

¹⁶⁶ PG&E's 2021 WMP, p. 486.

¹⁶⁷ “As described in Section 7.3.3.7 of the 2021 WMP, PG&E plans to replace approximately 1,200 expulsion fuses with CAL FIRE exempt fuses in 2021. At this time the location of these fuses is being developed.” PG&E's response to Data Request CalAdvocates-PGE-2021WMP-15, Question 3, March 9, 2021.

¹⁶⁸ Extracted from the geospatial data PG&E provided with its 2020 Q4 Quarterly Report. Note that PG&E's 2020 WMP states, “PG&E estimates it has roughly over 15,000 non-exempt fuse devices.” See PG&E's 2020 WMP, revised on February 28, 2020, p. 3-6.

¹⁶⁹ Bear Valley Electric Service replaced 2,001 expulsion fuses in 2020 and plans to replace the remaining 901 expulsion fuses on its system in 2021. PG&E replaced 643 expulsion fuses in 2020 in the HFTD in 2020 and plans to replace 1,200 in 2021. Bear Valley plans to finish its fuse replacement program in 2021. See Bear Valley's 2021 WMP, p. 59; PG&E's 2021 WMP, pp. 358 and 486-487.

¹⁷⁰ Bear Valley Electric Service also has significantly lower unit costs than PG&E. Bear Valley estimates a cost of about \$1,800 per fuse replacement, while PG&E estimates \$12,500 per fuse. See Bear Valley's 2021 WMP, Table 12; PG&E's 2021 WMP, p. 488 and Table 12.

HFTD.¹⁷¹ While the system hardening model specifically estimates risk associated with *conductor* failure, it is the best approximation for *fuse* risk available at this time.

The WSD should require PG&E to develop and submit a specific workplan for 2021 and 2022 for replacing expulsion fuses in HFTD. PG&E should submit this workplan when it submits a revised 2021 WMP. Additionally, PG&E should be required to develop a three-year workplan for fuse replacements, to be submitted with its 2022 WMP submission.

K. The WSD should require PG&E to develop a workplan to replace small copper conductor across its HFTDs.

In PG&E's September 2020 Quarterly Report, in response to Condition PG&E-2 "Equipment Failure," PG&E stated that a "leading factor" contributing to PG&E's high rate of equipment failures was "the large percentage of small copper conductor found across PG&E's rural service territory."^{172- 173} However, in PG&E's Supplemental WMP Filing, PG&E stated, "The quantity of "6 CU" copper conductor removed in relation to [System Hardening Program projects] is not a data point that PG&E specifically maintains and thus the information is not readily available."¹⁷⁴

Thus, while PG&E states that it knows the mileage of small copper conductor in HFTD,¹⁷⁵ PG&E's response above indicates that the amount of small copper conductor that has been removed in HFTD, or that is planned for removal in HFTDs, is not tracked. Given PG&E's claim that the prevalence of small copper conductor is a "leading factor" in PG&E's equipment failures, it is important for PG&E to track the amount of small copper conductor being replaced within these high-risk areas.

The WSD should require PG&E to track the amount of small copper conductor replaced within HFTDs. PG&E should also be required to develop and provide a workplan to replace

¹⁷¹ Analysis of PG&E's 2021 Wildfire Distribution Risk Model for system hardening. PG&E's responses to Data Request CalAdvocates-PGE-2021WMP-19, Question 3, March 15, 2021.

¹⁷² PG&E's September 2020 Quarterly Report, p. 98.

¹⁷³ In PG&E's Supplemental Filing from February 26, 2021, in response to Action PGE-27 (Class B), PG&E stated that conductor replacement programs are included in two separate Maintenance Activity Types (MAT). MAT 08W is PG&E's System Hardening Program which is focused on HFTD areas.

¹⁷⁴ PG&E's 2021 WMP Supplemental Filing, p. 36, February 26, 2021.

¹⁷⁵ "Defining small copper conductor as 4, 6 and 8 copper, we have 3,589 miles in Tier 2, Tier 3 and Zone 1 HFTD," PG&E's response to Data Request CalAdvocates-PGE-2021WMP-16, Question 6, March 10, 2021.

small copper conductor in its highest-risk circuit segments within HFTDs within a specified timeframe.

L. The WSD should require PG&E to justify its use of non-composite poles.

PG&E plans on replacing 15,000 wood transmission poles with steel over the next ten years.¹⁷⁶ However, steel poles may not be the safest choice.

SCE is replacing a number of distribution poles with composite poles,¹⁷⁷ which provide “arcing resistance.”¹⁷⁸ Laboratories have shown that a current produced on conductor-to-structure contact on a composite pole¹⁷⁹ will significantly lower wildfire ignition risk.¹⁸⁰ The Camp Fire¹⁸¹ and Kincade Fire¹⁸² were both caused by conductor-to-structure contact on steel

¹⁷⁶ PG&E’s 2021 WMP, p. 567.

¹⁷⁷ “To reduce the risk of fires and fire damage to poles and equipment, when poles need to be replaced in HFRA, SCE replaces them with fire resistant composite poles if the pole supports equipment or is in a woodpecker prone area.” SCE’s 2021 WMP, p. 211.

¹⁷⁸ SCE’s 2021 WMP, p. 211.

¹⁷⁹ At an applied voltage of 240 kV, the leakage current across a four-foot length of a composite pole sample resulted in a maximum current of 54 microamperes. “RS Pole Module Testing and Quality Assurance Overview.” RS Technologies Inc., p. 12. Available at <https://www.rspoies.com/sites/default/files/resources/Module%20Testing%20and%20Quality%20Assurance%20Overview%20V1.2.pdf>.

¹⁸⁰ “With traditional earth-fault detection sensitivity of 5-10 amps on rural powerlines in Victoria, ‘branch touching wire’ earth faults are certain to produce a fire in worst case conditions. If powerline earth-fault protection systems were to detect and respond to 0.5 Amp faults within two seconds, fire risk in ‘branch touching wire’ faults in worst case conditions would be reduced tenfold compared to current levels.” “Powerline Bushfire Safety Program,” pp. 6-7. Available at

https://www.energy.vic.gov.au/_data/assets/pdf_file/0022/41719/R_D_Report_-_Marxsen_Consulting_-_Vegetation_conduction_ignition_tests_final_report_15_July_2015_DOC_15_183075_-_external_.PDF

Per the above, it can be estimated that a 0.5 Amp (500,000 microamperes) has approximately a 10% of causing an ignition in worse-case conditions. As 54 microamperes is approximately ten thousand times smaller, the likelihood of ignition due to conductor contact with a composite pole is expected to be very low.

¹⁸¹ “A Summary of the Camp Fire Investigation.” Butte County District Attorney, p. 2. Available at <https://www.buttecounty.net/Portals/30/CFReport/PGE-THE-CAMP-FIRE-PUBLIC-REPORT.pdf?ver=2020-06-15-190515-977>. Per pp. 2-3 of this report, a C-hook supporting an energized line had worn through, allowing the line to contact the tower structure.

¹⁸² Jaxon Van Derbeken. “Kincade Fire Tied to PG&E Failure to Decommission an Unneeded High-Voltage Line.” Available at <https://www.nbcbayarea.com/news/local/kincade-fire-tied-to-pge-failure-to-decommission-an-unneeded-high-voltage-line/2384828/>.

transmission structures, which raises concerns with PG&E’s plan to replace wood poles with steel.

PG&E has not explained why it selected steel rather than composite transmission structures. The WSD should review document “WildfireMitigationPlans_DR_CalAdvocates_047-Q03-Atch01_CONF,” which PG&E provided confidentially in response to Cal Advocates’ question regarding pole materials.¹⁸³

PG&E is also spending over \$300 million per year¹⁸⁴ replacing wood *distribution* poles with new wood poles.¹⁸⁵ Wood distribution poles are a fire risk. Canadian utility Manitoba Hydro states that “pole fires are a common cause of electrical outages.”¹⁸⁶ PG&E is using an “intumescent mesh covering” to cover some wood poles in Tier 2 and 3 HFTD areas.¹⁸⁷ However, PG&E has provided no evidence that this covering will prevent wildfires caused by wire-to-structure contact.¹⁸⁸ Even if the covering does prevent fires from wire-to-structure contact, PG&E would need to also cover its wood crossarms with this material to significantly reduce the wildfire risk from wire-to-structure contact.¹⁸⁹

To maximize the safety benefits of PG&E’s investment at a time when PG&E is replacing a significant number of poles, the WSD should require PG&E to provide a detailed analysis that shows why the pole materials it has selected are appropriate risk mitigation measures. This analysis should include a complete lifecycle cost-benefit analysis on pole material for both transmission and distribution. PG&E’s analysis of pole material should specifically include wood, steel, and composite materials and the risk reduction from conductor-to-structure contact for each material. The WSD should require PG&E to submit the results of this analysis with PG&E’s WMP submission in 2022, if not sooner.

¹⁸³ PG&E’s confidential response to Data Request CalAdvocates-PGE-2021WMP-13, Question 3, March 9, 2021.

¹⁸⁴ PG&E’s 2021 WMP, Table 12.

¹⁸⁵ PG&E’s 2021 WMP, p. 484.

¹⁸⁶ “Pole fires.” Manitoba Hydro. https://www.hydro.mb.ca/outages/pole_fires/

¹⁸⁷ PG&E’s 2021 WMP, p. 484.

¹⁸⁸ PG&E response to Data Request CalAdvocates-PGE-2021WMP-13, Question 1, March 9, 2021.

¹⁸⁹ Crossarms made of wood or metal on a wood or metal structure normally have a current path to ground and, therefore, represent an arcing and fire risk.

M. The WSD should require PG&E to study the benefits of performing routine climbing inspections of transmission structures below 500 kV in HFTD areas.

PG&E annually performs climbing inspections of 500 kV transmission tower structures in HFTD Tier 3, and every 3 years for towers in HFTD Tier 2.¹⁹⁰ All transmission structures, including those below 500 kV, are inspected by ground and aerial inspections.¹⁹¹ However, only 500 kV structures are subject to regular climbing inspections.¹⁹² Other transmission structures are inspected by climbing inspections only on an “as-triggered” basis, which can include structural concerns, or “to assess a condition that could not be adequately assessed when identified during a detailed ground aerial inspection or patrol.”¹⁹³

Two major wildfires in the past three years have been linked to PG&E transmission towers operating below 500 kV: the Camp Fire in 2018 (115 kV tower)¹⁹⁴ and the Kincade Fire in 2019 (230 kV tower).¹⁹⁵ While PG&E states that it performs routine ground and aerial inspections of transmission structures in HFTDs, PG&E’s decision to only perform climbing inspections of its highest-voltage towers is at odds with PG&E’s record of fires on lower voltage transmission lines.

The WSD should require PG&E to study the efficacy of performing detailed climbing inspections of all transmission structures in HFTDs on a regular schedule. The study should examine alternative schedules, ranging from annual inspections to a five-year cycle. PG&E should also demonstrate the efficacy of alternatives, such as aerial inspections. In particular, PG&E should examine the efficacy of aerial inspections in early detection of the types of failures that led to the Camp and Kincade Fires. PG&E should be required to submit this report by the end of September 2021.

¹⁹⁰ PG&E’s 2021 WMP, p. 583.

¹⁹¹ PG&E’s 2021 WMP, pp. 583-584.

¹⁹² PG&E’s 2021 WMP, p. 583.

¹⁹³ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-09, Question 15, March 2, 2021.

¹⁹⁴ “A Summary of the Camp Fire Investigation.” Butte County District Attorney, p. 2. Available at <https://www.buttecounty.net/Portals/30/CFReport/PGE-THE-CAMP-FIRE-PUBLIC-REPORT.pdf?ver=2020-06-15-190515-977>.

¹⁹⁵ PG&E’s incident report submitted to SED on October 24, 2019.

N. The WSD should require PG&E to study the benefits of performing aerial inspections of distribution assets.

While PG&E utilizes aerial inspections¹⁹⁶ for transmission assets and substations,¹⁹⁷ and for patrol inspections of distribution lines,¹⁹⁸ PG&E's WMP does not provide for the use of aerial inspections for detailed inspections of distribution assets. Aerial inspections (conducted from a drone or helicopter) can detect issues that may not be visible from ground-based detailed inspections, such as woodpecker damage to the top of crossarms, deteriorated electrical connections on top of transformers, or missing/deteriorated insulator pins.¹⁹⁹

In 2019, SDG&E began a pilot program to determine whether the use of drones could improve or enhance its inspection efforts in HFTDs.²⁰⁰ An analysis of over 8,000 distribution poles inspected both from a drone and from the ground determined that, on average, drone inspections found 51 percent more issues on the same assets compared to ground inspections.²⁰¹ In 2020, the vast majority of SDG&E's critical (level 1) inspection findings in HFTD areas were identified with drone inspections. SDG&E's drone inspections (all in Tier 3 HFTD) identified 132 critical issues,²⁰² while all other types of inspections in HFTD areas identified 32 such problems.²⁰³

SCE performs both ground and aerial inspections of its overhead distribution system,²⁰⁴ and in 2020, aerial inspections accounted for 4,808 level 1 or 2 distribution inspection findings in HFTD areas, compared to 26,604 from ground inspections.²⁰⁵ Both SDG&E's and SCE's use of

¹⁹⁶ Per PG&E's 2021 WMP, pp. 589, aerial inspections can refer to inspections performed by drone, helicopter, and aerial-lift-vehicle.

¹⁹⁷ PG&E's 2021 WMP, pp. 583-584.

¹⁹⁸ PG&E's 2021 WMP, p. 652.

¹⁹⁹ SCE's 2021 WMP, p. 238.

²⁰⁰ SDG&E's 2021 WMP, p. 247.

²⁰¹ SDG&E's 2021 WMP, p. 248.

²⁰² Per SDG&E's 2021 WMP, p. 248, drone inspections of distribution assets found 132 "emergency" issues and 1,823 "priority" issues in 2020.

²⁰³ These are distribution inspections performed in HFTD areas, including patrol inspections, detailed ground inspections on the compliance schedule, and supplemental (more frequent) detailed ground inspections. Per SDG&E's 2021 WMP, Table 1, detailed and patrol inspections found 32 level 1 issues and 1,121 level 2 issues in 2020.

²⁰⁴ SCE's 2021 WMP, p. 239.

²⁰⁵ SCE's response to Data Request CalAdvocates-SCE-2021WMP-13, Questions 1 and 2, March 17,

ground and aerial inspections demonstrate that both types together find more level 1 and 2 problems, which should reduce the likelihood of equipment failure resulting in wildfire or other negative consequences.

PG&E should begin piloting aerial inspections while it studies their efficacy. There is significant evidence that aerial inspections provide real value in mitigating equipment hazards, when performed on distribution assets in HFTD areas. When PG&E submits its revised 2021 WMP following denial, PG&E should propose a proof-of-concept aerial inspection program to inspect a subset of distribution assets in high-risk areas. The pilot should be started promptly and designed to gather field data on the efficacy of aerial inspections. PG&E should compare the aerial inspections against detailed ground inspections of the same assets, and report on its findings in its WMP submission in 2022.

The WSD should also direct PG&E to perform a study to determine the cost and benefit of augmenting its detailed distribution inspections with aerial inspections. The study should consider alternative schedules, ranging from annual inspections to a five-year cycle. The WSD should require PG&E to submit this study with its WMP submission in 2022 alongside the results of the pilot program.

O. The WSD should investigate PG&E's covered conductor costs, which are far in excess of SCE's costs.

PG&E's covered conductor costs are much higher than SCE's costs (on a unit basis), and PG&E has not meaningfully explained its high costs. Thus, Cal Advocates is concerned PG&E is not sufficiently efficient in its system hardening.

In 2020, PG&E spent more than twice as much per mile as SCE on its equivalent covered conductor program.²⁰⁶ It is not clear what contributes to this large cost difference; SCE implies

2021.

²⁰⁶ In 2020, PG&E spent approximately 2.3 times as much per mile as SCE for covered conductor installation. PG&E spent approximately \$439 million on 333 miles of overhead distribution hardening, per PG&E's response to Data Request CalAdvocates-PGE-2021WMP-12, Question 2, March 8. During this same period, SCE spent \$546 million on 965 miles of covered conductor installation, per SCE's 2021 WMP, Table 12. These correlate to a per-mile spend of \$1.3 million for PG&E and \$0.57 million for SCE.

that replacing poles and transformers are part of SCE's covered conductor program,²⁰⁷ which suggests these ancillary costs would not account for PG&E's significantly higher expenditures.

Looking at forecasts, PG&E plans to spend nearly a billion dollars on covered conductor installations in 2021 to 2022,²⁰⁸ with an average cost of \$1.6 million per mile. This is approximately triple SCE's 2021 projected costs of about \$0.54 million per mile.²⁰⁹ With costs this high, PG&E cannot deliver widespread risk reduction at a reasonable cost. PG&E must reduce its costs so that it can harden a significant fraction of its distribution system.

Additionally, because PG&E's costs exceed SCE's by three-fold, it is critical to ensure that PG&E is efficiently allocating money to address the highest risk circuit-segments. As discussed previously (see section C.2), PG&E's hardening efforts are not effectively targeted at high-risk circuits.

Besides raising questions of efficiency, PG&E's high costs for its system hardening also raise questions about PG&E's managerial effectiveness and decision-making. PG&E must demonstrate that it is capable of effectively managing infrastructure projects to deliver risk reduction speedily and at a reasonable cost.

To this end, the WSD should first require PG&E to separate its data for different types of hardening activities (overhead hardening, line removal, remote grid, and undergrounding).²¹⁰ When PG&E submits its revised 2021 WMP (following denial of its present submission), PG&E should provide costs, miles treated, and risk-spend efficiency (RSE) estimates for each activity.

Second, the WSD should require PG&E to investigate what makes PG&E's overhead distribution hardening program significantly more expensive per mile than SCE's covered conductor program and investigate ways to reduce this cost. PG&E should submit the findings of this investigation when it submits its revised 2021 WMP following denial.

Third, the WSD should direct PG&E to substantially improve the efficiency of its system hardening programs by the time of its WMP submission in 2022.

²⁰⁷ SCE's 2021 WMP, pp. 210 and 223.

²⁰⁸ Specifically, PG&E plans to spend \$259 million in 2021 and \$677 million in 2022, for a total of \$936 million. PG&E response to Data Request CalAdvocates-PGE-2021WMP-12, Question 2, March 8, 2021.

²⁰⁹ SCE's 2021 WMP, Table 12.

²¹⁰ PG&E's 2021 WMP, Table 12, program 7.3.3.17.1, "Updates to grid topology to minimize risk of ignition in HFTDs, System Hardening, Distribution" aggregates the costs and the RSEs associated with covered conductor, undergrounding, and remote grids.

P. The WSD should direct PG&E to justify its information technology (IT) needs.

In 2020, PG&E recorded capital and operating expenditures of approximately \$113 million in relation to IT needs associated with wildfire mitigation. In 2021, this number is projected to rise to \$143 million.²¹¹ These costs account for approximately 60 percent of PG&E’s total electric division IT expenditures .²¹²

While SDG&E and SCE do not list WMP-related IT costs in a similar manner to PG&E, a sum of all programs under the “Data Governance” category indicates that SDG&E’s highest forecast WMP-related IT expenditure from 2021 to 2022 is \$22.7 million.²¹³ SCE’s highest forecast is \$16.8 million during the same period.²¹⁴

PG&E’s WMP-related IT costs appear to be significantly higher (almost \$100 million higher) than its peer utilities. The WSD should direct PG&E to explain why its IT needs are so expensive and whether it has considered less costly alternatives (such as using cloud computing services through Amazon Web Services or Microsoft Azure).

Q. The WSD should require PG&E to explain why its filings about ignition investigations contradict one another.

In PG&E’s September 2020 Quarterly Report, in response to Condition PG&E-2 Equipment Failure, PG&E stated:

One reason why we have higher than expected equipment failures is the current protocol for categorizing “initiating events.” At this time, when a PG&E first responder is unable to identify the cause for ignition in a timely manner, our reporting standards and requirements direct that the ignition cause is defaulted to equipment failure. In many instances, this designation may not

²¹¹ PG&E’s 2021 WMP, Table 12, Program 7.3.7.5 “Other, IT projects to support wildfire mitigation work.”

²¹² Per PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-08, Question 12, February 25, 2021, PG&E’s total IT expenditures for the electric division were approximately \$188 million in 2020, and are projected to be approximately \$223 million in 2021.

²¹³ SDG&E’s 2021 WMP, Table 12, sum of all entries under the category “Data Governance.”

²¹⁴ SCE’s 2021 WMP, Table 12, sum of all entries under the category “Data Governance.”

properly categorize the true cause for ignition, but it remains documented as such.²¹⁵

In PG&E's Supplemental Filing, in response to Action PGE-26 (Class B), PG&E stated that its earlier response to Condition PGE-2 in its September 2020 Quarterly Report required correction, and provided the following:

PG&E has a detailed process for investigating the cause of every potentially PG&E-attributable ignition event and correcting systems of record when discrepancies are identified. This investigation process and associated systems of record do not have a default for a suspected initiating cause.²¹⁶

PG&E asserts that the statement in its September 2020 Quarterly Report "was written by employees who misunderstood PG&E's ignition investigations process and thus mistakenly included the statement regarding defaulting to equipment failure."²¹⁷

Here, PG&E appears to admit that it assigned inappropriate personnel to write this response. This raises concerns related to the validity of other statements within the September 2020 Quarterly Report and subsequent reports. PG&E should explain how this happened. Alternatively, it is possible that PG&E *did* assign appropriate personnel to respond to the WSD's conditions. This raises the concern that the stated process in the September 2020 Quarterly Report may have been an "unofficial" process followed by some personnel in the field, leading to incorrect classifications of ignition causes.

The WSD should require PG&E to provide a detailed explanation for the difference between its responses in the September 2020 Quarterly Report and its Supplemental Filing. Furthermore, PG&E should investigate whether any field personnel have, in the last three years, followed the process stated in the September 2020 Quarterly Report and assigned ignitions a default cause of "equipment failure" prior to a thorough investigation.

The WSD should also require PG&E to review the accuracy of its other responses to conditions in its September 2020 Quarterly Report. PG&E should correct any mischaracterizations found and provide an affidavit for the accuracy of the rest. PG&E should

²¹⁵ PG&E's September 2020 Quarterly Report, p. 98.

²¹⁶ PG&E's 2021 WMP Supplemental Filing, p. 34, February 26, 2021.

²¹⁷ PG&E's response to Data Request CalAdvocates-PGE-2021WMP-16 Question 1, March 10, 2021.

submit these supplemental filings when PG&E submits a revised WMP following denial. The WSD must hold PG&E accountable for its failures to provide accurate information to the Commission.

R. The WSD should require PG&E to justify and update its risk-spend efficiency (RSE) calculations.

PG&E included detailed spreadsheets with its 2021 WMP submission with RSE estimates for many of its mitigation initiatives. Cal Advocates has noted a number of erroneous assumptions and irregularities that diminish the accuracy and therefore the usefulness of these calculations. RSEs represent the efficiency of a given program at mitigating risk by estimating the quantifiable amount of risk reduced for each dollar in expenditures related to the program.

Flawed RSEs could contribute to a flawed overall strategy for risk mitigation. For example, it could lead to a utility cutting a useful program. Alternatively, it could result in expanding an ineffective program, which could cause unwarranted charges to ratepayers and contribute to a catastrophic wildfire due to programs addressing less risk than predicted.

1. PG&E’s data submissions include multiple errors.

PG&E’s rapid earth-fault current limiter pilot was originally reported to have an RSE of 0.06.²¹⁸ PG&E later revealed that this RSE score was due to an error in its calculations and the correct value is 104.²¹⁹ In PG&E’s errata on March 17, 2021, PG&E corrected a number of costs, and updated 12 more RSE values, several of which changed by an order of magnitude or more.²²⁰

2. Some of PG&E’s estimates are based on flawed logic.

PG&E relies on flawed assumptions to estimate effectiveness for maintenance programs and vegetation management. For example, many of PG&E’s inspection programs estimate effectiveness based on the number of maintenance tags discovered and remediated:

The expectation here is that if something is marked as a Priority A, it is unlikely to last through a Priority B tag, which is to be addressed within 90 days. Using that assumption, PG&E estimated

²¹⁸ PG&E’s 2021 WMP, Table 12, Program 7.3.3.17.4 “Updates to grid topology to minimize risk of ignition in HFTDs, Rapid Earth Current Fault Limiter.”

²¹⁹ PG&E Response to MGRA_010 Q27, March 2, 2021.

²²⁰ PG&E’s 2021 WMP Errata, pp. 19-22, March 17, 2021.

that something that is tagged with Priority A is expected to fail between the duration of correction between an A and a B tag, or between 30-90 days. As such, a Priority A tag is estimated to fail within 60 days. To annualize this, PG&E estimates that there is a $1.0 - (60/365) = \sim 84$ percent chance of failure. This was conservatively reduced to 70 percent after review with the PG&E team.²²¹

In a similar (but inverse) manner, PG&E estimates that Priority B tags have a 38 percent chance of failure, which PG&E then adjusted upward to 50 percent.²²²

When asked to justify the adjustments made to the estimated failure rates of Priority A and B tags, PG&E stated, “subject matter experts... thought 84% could be too high,” and “subject matter experts... thought 38% could be too low.” In both cases, PG&E stated, “there is no additional evidence to support the revised failure rate.”²²³

In addition to lacking supporting evidence, PG&E’s estimates are not logical, as PG&E inspects its highest risk assets once per year.²²⁴ If a priority A tag truly would fail within 60 days if un-remediated, then the combination of PG&E’s inspection cycles and the “estimated” failure time would imply that PG&E’s inspections are unlikely to catch most issues that would be considered priority A before they fail.

Furthermore, for program 7.3.5.2, “Detailed inspections of vegetation around distribution electric lines and equipment,” PG&E assumes the probability of an untrimmed tree causing an outage to be 70 percent.²²⁵ When asked to justify this, PG&E explained that it “used the same estimation as with assets and inspections to ensure consistency across how tags are utilized.”²²⁶ This assumption is inherently flawed, since vegetation management and asset inspections are completely different programs with different causes of failure.

²²¹ PG&E’s 2021 WMP, p. 65.

²²² PG&E’s 2021 WMP, p. 65.

²²³ PG&E’s response to Data Request CalAdvocates-PGE-2021 WMP-06, Question 4, March 1, 2021.

²²⁴ PG&E’s 2021 WMP, pp. 586 and 612.

²²⁵ PG&E’s 2021 WMP, attachment 7.3.5_RSE_Input_Template_EO_WLDFR.xlsm.

²²⁶ PG&E’s response to Data Request CalAdvocates-PGE-2021 WMP-06, Question 6, February 24, 2021.

3. PG&E’s program exposures should track the percentage of assets treated annually.

Many of the inputs to PG&E’s RSE calculations do not appear to be consistent with definitions in other parts of PG&E’s WMP. Table 3 below is a partial list of apparently inconsistent data points in PG&E’s RSE calculations. The most severe contradictions appear to occur with program exposure (the fraction of relevant assets that the program reaches each year).²²⁷ PG&E explains that its exposure calculations are “based on the ratio of ignition count targeted by the initiative over the inherent risk (i.e. ignition count absent of this initiative).”²²⁸

Table 3 A partial list of contradictory data inputs to PG&E’s RSE calculations			
Input	Location of Input	Reason for Questioning the Accuracy	Location of Reason For Questioning the Accuracy
100% program exposure for crossarm maintenance	PG&E’s 2021 WMP Attachments “7.3.3_RSE_Input_Template_EO_WLDFR” sheet “1-Program Exposure”	PG&E states that PG&E conducts bi-annual patrols in HFTD Tier 2 rural areas, which would imply not every crossarm is looked at each year by PG&E.	PG&E’s 2021 WMP p. 281
100% program exposure for distribution pole replacement and reinforcement	PG&E’s 2021 WMP Attachments “7.3.3_RSE_Input_Template_EO_WLDFR” sheet “1-Program Exposure”	PG&E states that PG&E conducts intrusive pole inspections on a 10-year cycle.	PG&E’s 2021 WMP p. 601

²²⁷ Per PG&E’s 2021 WMP, attachment 7.3.3_RSE_Input_Template_EO_WLDFR.xlsm, “exposure” is the fraction of the total tranche exposure, to which the program applies. In other words, for a given tranche (e.g., “HFTD - Distribution - Tier 3 – All,” the fraction of that tranche to which a given mitigation program applies).

²²⁸ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-06, Question 1, March 1, 2021.

<p>11.1% - 20.4% program exposure for expulsion fuse replacement program in HFTD Tier 2 and 3</p>	<p>PG&E’s 2021 WMP Attachments “7.3.3_RSE_Input_Template_EO_WLDFR” sheet “1-Program Exposure”</p>	<p>Per the geospatial data PG&E provided with its 2020 Q4 Quarterly Report, PG&E has over 22,000 expulsion fuses located in the Tier 2 and Tier 3 HFTD areas. In its 2021 WMP, PG&E states that PG&E completed 643 fuse replacements in 2020, plans to complete 1,200 fuse replacements per year in 2021 and 2022. This corresponds to a rough program exposure in HFTD Tier 2 and 3 of $643/15,000 = 3\%$ for 2020, and $1,200/(22,000) = 5.4\%$ for 2021, and 2022.</p>	<p>PG&E 2020 WMP p. 3-6 PG&E 2021 WMP p. 236</p>
<p>Near 100% program exposure for other corrective actions on transmission and distribution in HFTD Tier 2 and 3</p>	<p>PG&E’s 2021 WMP Attachments “7.3.3_RSE_Input_Template_EO_WLDFR” sheet “1-Program Exposure”</p>	<p>PG&E performs asset inspections in on a third of its HFTD Tier 2 transmission assets per year. In addition, PG&E patrols HFTD Tier 2 circuit miles bi-annually for distribution in rural areas.</p>	<p>PG&E 2021 WMP pp. 9 and 483</p>

In response to Cal Advocates’ data requests, PG&E asserts that there is nothing wrong with its RSE inputs and states that “exposure is not based on inspection cycles.”²²⁹ According to PG&E’s logic, PG&E’s inspection frequency will not change the overall risk reduction. However, this assumption appears to contradict PG&E’s own practice of altering its inspection frequency depending on the level of risk in the area.²³⁰

4. PG&E’s WMP is missing RSE calculations.

PG&E did not calculate risk scores for many of its programs. Table 4 lists programs with high capital or operational expenditures projected for 2021, where RSE calculations were not provided.

²²⁹ PG&E’s response to Data Request CalAdvocates-PGE-2021WMP-06, Question 1, March 1, 2021.

²³⁰ PG&E inspects assets in HFTD Tier 3 annually, and assets in Tier 2 every three years, PG&E’s 2021 WMP, pp. 583-584.

<p style="text-align: center;">Table 4 A partial list of PG&E’s large programs where RSEs were not calculated</p>			
Program where RSE Scores Were Not Calculated	2021 Capital Expenses	2021 Operational Expenses	Notes
Transmission System Hardening	\$314 million	\$0	
Detailed Transmission Vegetation Inspections	\$86 million	\$101 million	
PSPS Mitigation through Grid Operations	\$0	\$68 million	
Backup Generation for PSPS Mitigation	\$55 million	\$1 million	
Transmission Tower Replacement	\$40 million	\$55 million	
Distribution, Transmission, and Substation: Fire Action Schemes and Technology	Unknown	Unknown	PG&E expects to spend \$30 million on this program in 2021. ²³¹ PG&E did provide an RSE range of 0.85-5 in a data request response, which assumes that this unproven, proprietary technology can prevent 95% of fires. ²³²
Transmission Circuit Breaker Maintenance	\$27 million	\$2 million	
Substation Construction for PSPS Mitigation	\$22 million	\$0	
Legacy Recloser Controller Replacement	\$17 million	\$0.1 million	

The Commission and WSD must ensure that PG&E is maximizing its risk reduction for the money PG&E allocates. This is especially true for programs such as those listed above, which are not required to satisfy specific regulatory requirements. RSE scores can provide valuable insight into whether implementing these programs is an efficient use of resources.

The WSD should require PG&E to submit RSE scores for programs with significant expenditures in PG&E’s WMP, particularly if that program is not designed to meet a specific regulatory requirement. Cal Advocates recommends requiring RSE scores for programs with

²³¹ PG&E’s 2021 WMP, p. 303.

²³² PG&E’s supplemental response to Data Request CalAdvocates-PGE-2021WMP-06, Question 2, March 5, 2021.

projected annual expenditures in excess of \$5 million. However, it may be reasonable to make exceptions for activities where RSE estimates will not materially influence decision-making. This includes certain activities that must be performed regardless, such as emergency preparedness planning or community outreach related to de-energization events. Likewise, it includes foundational activities that support other programs, such as data governance and risk analysis. In these cases, PG&E should clearly identify the reasoning and justify not performing a RSE.

5. The WSD should require PG&E to justify and update its RSE calculations.

PG&E's estimates of maintenance effectiveness and program exposures, and its decision not to estimate a number of RSEs, all raise significant concerns related to the validity of PG&E's RSE scores. Due to the number and severity of errors, the WSD cannot rely on PG&E's current RSE scores to determine or validate resource allocation.

The WSD should require PG&E to justify each assumption in its RSE calculations, and submit a report on these assumptions. For cases where current data is not available to justify a calculation, PG&E should explain its efforts to collect and analyze the necessary data to improve the RSE estimates. PG&E should submit this report, along with revised RSE calculations in a supplemental filing to its 2021 WMP, including estimates of the RSEs for high-expenditure programs where PG&E has not yet provided an RSE.

As discussed in Cal Advocates' comments on cross-cutting WMP issues, the WSD should also consider developing its own risk calculation framework for all utilities to use, to prevent the type of issues noted in this section.

IV. CONCLUSION

Cal Advocates respectfully requests that the Wildfire Safety Division adopt the recommendations discussed herein.

Respectfully submitted,

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March 29, 2021

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V. Appendix A: WMP cost comparison for large utilities

2021 WMP Spending Forecasts (millions of dollars)			
	Operating Expenses	Capital Expenditures	Total
PG&E	2,396	2,559	4,955
SCE	596	1,109	1,706
SDG&E	187	459	646

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April 13, 2021

Via Electronic Mail

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Wildfire Safety Division
California Public Utilities Commission
San Francisco, CA 94102
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Subject: Reply Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities

Dear Director Thomas Jacobs,

The Public Advocates Office at the California Public Utilities Commission (Cal Advocates) respectfully submits the following reply comments on the 2021 Wildfire Mitigation Plan Updates of Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E). We respectfully urge the Wildfire Safety Division to adopt the recommendations discussed herein.

Please contact Nathaniel Skinner (Nathaniel.Skinner@cpuc.ca.gov) or Henry Burton (Henry.Burton@cpuc.ca.gov) with any questions relating to these comments.

Sincerely yours,

/s/ Carolyn Chen

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I. INTRODUCTION

Pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (Commission) and Resolution WSD-011, the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) submits these reply comments on the 2021 Wildfire Mitigation Plan (WMP) Updates submitted by the large investor-owned utilities (IOUs or utilities).¹

Resolution WSD-011, the *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*, established guidelines and a schedule for WMP submissions in 2021. Pursuant to Resolution WSD-011, Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) submitted 2021 WMP Updates on February 5, 2021. PG&E, SCE, and SDG&E all submitted Supplemental WMP Filings on February 26, 2021.

Resolution WSD-011 permits any interested person to serve opening comments on the large IOUs' 2021 WMPs by March 17, 2021 and reply comments by March 24, 2021. On February 23, 2021, Cal Advocates, Green Power Institute (GPI), Mussey Grade Road Alliance (MGRA), the Protect Our Communities Foundation, The Utility Reform Network (TURN), and Will Abrams requested an extension of the reply comment deadline to April 6, 2021. On February 26, 2021, the Wildfire Safety Division (WSD) approved the deadline change. On March 31, 2021, PG&E, SCE, and SDG&E requested an extension of the reply comment deadline to April 13, 2021,² and on April 2, 2021, the WSD approved this request.

Cal Advocates makes the following comments:

¹ Many of the Public Utilities Code requirements relating to wildfires apply to "electrical corporations." See, e.g., Public Utilities Code Section 8386. These comments use the more common term "utilities" and the phrase "electrical corporations" interchangeably to refer to the entities that must comply with the wildfire safety provisions of the Public Utilities Code.

² The Public Advocates Office supported this request.

- A. PG&E has not demonstrated that its WMP minimizes wildfire risks.
- B. The WSD should require the utilities to validate their wildfire risk models.
- C. The Commission should not allow utilities to use WMPs to circumvent Commission decisions in general rate cases (GRCs).

II. DISCUSSION

A. **PG&E has not demonstrated that its WMP minimizes wildfire risks.**

Public Utilities Code Section 8386(a) requires each electrical corporation to operate its facilities “in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment.” Additionally, Public Utilities Code Section 8386(c)(3) requires each electrical corporation to describe in its WMP how it will minimize the risk of catastrophic wildfires. Comments submitted by several stakeholders present compelling evidence that PG&E’s 2021 WMP Update does not maximize safety, because PG&E has not designed its WMP to achieve the greatest feasible risk reduction with the resources available.

1. **PG&E has not demonstrated the ability to effectively implement its WMP.**

In their comments, the Joint Local Governments correctly stress the importance of implementation³ and call attention to the “increasing disconnect between PG&E’s vegetation management activities as they appear on paper and as they are enacted in practice.”⁴

Cal Advocates agrees with the Joint Local Governments’ perspective. As we observed in opening comments, “a plan is only as good as its execution”⁵ and PG&E has

³ *Comments of the Joint Local Governments on PG&E’s 2021 Wildfire Mitigation Plan Update*, March 29, 2021 (Joint Local Governments Comments), p. 2: “The 2021 WMP update promises to remedy ... past failings, but the real test of any plan is how well it is implemented.”

⁴ Joint Local Governments Comments, p. 4.

⁵ *Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Update of Pacific Gas and Electric Company*, March 29, 2021 (Cal Advocates Comments on PG&E), p. 6

a troubling record of over-promising and under-delivering.⁶ PG&E’s 2021 WMP Update does not meaningfully address the fundamental cause of PG&E’s past implementation failures: systemic managerial weakness.⁷ Until PG&E improves its management, it will not achieve the highest feasible degree of safety.

2. PG&E has not addressed the risk posed by its own operational failures.

In its comments, TURN correctly observes that PG&E’s risk analysis is incomplete because “PG&E fails to model operational failure as a risk driver,” even though several catastrophic wildfires in recent years “were caused by PG&E operational failures.”⁸ Similarly, Will Abrams notes that the large utilities fail to conduct a thorough analysis of recent catastrophic failures and identify solutions, with PG&E being the “most egregious” example.⁹

Cal Advocates agrees with TURN and Will Abrams. As demonstrated in our opening comments, PG&E has a systemic problem of operational failures and uneven quality of work,¹⁰ and yet PG&E frequently fails to examine the root causes of its safety failures.¹¹ As Will Abrams observes, PG&E’s operational failures are not unforeseeable black swan events, but “common white swans.”¹²

Until PG&E examines *why* adverse events occur, the resulting risk analysis will not inform PG&E of the steps it needs to take to improve. Because PG&E’s current risk analysis omits a central driver of risk (operational failure), the risk analysis cannot lead to good decision-making.

⁶ Cal Advocates Comments on PG&E, pp. 6-12.

⁷ Cal Advocates Comments on PG&E, pp. 6-12.

⁸ *Comments of The Utility Reform Network on 2021 Wildfire Mitigation Plan Updates*, March 29, 2021, as corrected March 30, 2021 (TURN Comments), pp. 15-16.

⁹ *William B. Abrams Comments on 2021 Wildfire Mitigation Plans*, March 29, 2021 (Will Abrams Comments), pp. 4-5.

¹⁰ Cal Advocates Comments on PG&E, pp. 6-12 (Section A), 18-24 (Section D), 24-27 (Section E), 27-30 (Section F), and 32-35 (Section H).

¹¹ Cal Advocates Comments on PG&E, pp. 11, 20, 23, and 33-35.

¹² Will Abrams Comments, p. 7.

PG&E's 2021 WMP Update will not solve PG&E's wildfire risk problem, because it does not address the core problem that PG&E faces: a systemic failure of management. Therefore, the WSD should deny PG&E's WMP and direct PG&E to submit a revised WMP that addresses this problem.

3. PG&E's wildfire risk modeling is seriously flawed.

MGRA identifies in its comments several flaws in PG&E's risk modeling practices, which is troubling since wildfire risk modeling is fundamental to utilities' abilities to select and prioritize mitigation measures. Moreover, as MGRA observes, this problem is "highly impactful because PG&E has completely changed its mitigation priorities based on the new model."¹³

MGRA's analysis shows that PG&E's ignition probability model is seriously flawed in that it "makes some dubious assumptions and produces a result that strongly conflicts with data and analysis from numerous sources: specifically, it concludes that ignition probability is not wind dependent . . ."¹⁴ In fact, the data show that "utility-ignited wildfires are to a great extent a problem of wind."¹⁵ MGRA identifies several technical aspects of its ignition probability model that PG&E should correct. Among other things, PG&E relies on annual average wind speeds rather than the wind speed at the time of the ignition, and PG&E fails to account for wind-caused damage to its facilities during de-energization events.¹⁶

MGRA notes that PG&E's wildfire consequence modeling is also flawed. PG&E, like the other two large utilities, limits the duration of fire simulations to eight hours.¹⁷

¹³ Mussey Grade Road Alliance Comments on 2021 Wildfire Mitigation Plans of PG&E, SCE, and SDG&E, March 29, 2021 (MGRA Comments), p. 12.

¹⁴ MGRA Comments, p. 11; see also pp. 14-32.

¹⁵ MGRA Comments, p. 32.

¹⁶ MGRA Comments, p. 33.

¹⁷ MGRA Comments, p. 12.

This modeling choice materially changes the conclusions one draws from the model and may result in a misallocation of resources to less risky locations.¹⁸

Cal Advocates agrees with MGRA that the flaws in PG&E’s risk modeling must be addressed immediately before the WSD can approve the WMP.¹⁹ Without sound risk modeling, PG&E cannot show that it has selected the right mitigation measures in the right places, and therefore its WMP fails to meet the standard required in Public Utilities Code Section 8386 to “minimize the risk of catastrophic wildfire.”²⁰

4. PG&E’s Enhanced Vegetation Management (EVM) Program is not designed to efficiently reduce risk.

TURN observes that PG&E’s enhanced vegetation management program does not appear to be well designed to reduce risk²¹ and PG&E has not justified the scope of the program.²² Cal Advocates has raised similar concerns, noting that (1) PG&E does not justify the design and scope of the enhanced vegetation management program²³ and (2) PG&E has not prioritized enhanced vegetation management work on the highest-risk circuit segments.²⁴

As discussed in our comments, PG&E plans to spend too much effort performing enhanced vegetation management in relatively low-risk areas, which detracts from its ability to promptly address critical wildfire risks. Because PG&E’s enhanced vegetation

¹⁸ MGRA Comments, p. 12.

¹⁹ MGRA Comments, p. 38.

²⁰ Public Utilities Code Section 8386(a) (requires each electrical corporation to “construct, maintain and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment”); Public Utilities Code Section 8386(c)(3) (requiring each WMP to include “a description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires”); *see also* Public Utilities Code Section 8386(c)(17), requiring “A methodology for identifying and presenting enterprisewide safety risk and wildfire-related risk that is consistent with the methodology used by other electrical corporations unless the commission determines otherwise.”

²¹ TURN Comments, pp. 20-24.

²² TURN Comments, p. 22.

²³ Cal Advocates Comments on PG&E, pp. 12-13.

²⁴ Cal Advocates Comments on PG&E, pp. 14-16.

management program does not maximize the safety gains that can be achieved with the resources PG&E is dedicating to its WMP, PG&E has failed to meet the requirements of Public Utilities Code Section 8386 to “minimize the risk of catastrophic wildfire” and its WMP should be denied.²⁵

5. PG&E’s system hardening program does not address high-risk locations.

Like PG&E’s enhanced vegetation management program, PG&E’s system hardening plan is not designed to efficiently minimize wildfire risks. TURN notes that PG&E’s system hardening program does not appear to efficiently reduce risk²⁶ and PG&E fails to make a reasonable showing that the scope of the program is justified.²⁷ Cal Advocates similarly showed that PG&E’s system hardening program is not efficiently reducing risk or effectively focused on risk.²⁸

By prioritizing system hardening on the highest-risk circuit-segments, PG&E could achieve greater safety with the same resources. Therefore, PG&E’s WMP does not establish how it prevents or minimizes wildfire risks, as required by Public Utilities Code Sections 8386(a) and 8386(c)(3), and the WMP should be denied.²⁹

²⁵ Public Utilities Code Sections 8386(a) and 8386(c)(3); *see also* Public Utilities Code Sections (c)(11), requiring “A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation’s service territory.”

²⁶ TURN Comments, p. 24.

²⁷ TURN Comments, pp. 25-27.

²⁸ Cal Advocates Comments on PG&E, pp. 16-18.

²⁹ Public Utilities Code Section 8386(a) requires each electrical corporation to “construct, maintain and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment.” Public Utilities Code Section 8386(c)(3) requires each WMP to include “a description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires.” *See also* Public Utilities Code Sections 8386(c)(11) (identified and prioritized wildfire risks), and 8386(c)(13) (ensuring system achieves highest level of safety, reliability, and resilience including through hardening and modernizing).

6. PG&E’s risk-spend efficiency (RSE) analysis does not support effective decision-making.

MGRA and TURN observe that PG&E bundles several types of system hardening as a single program³⁰ and, therefore, does not estimate the risk-spend efficiency of specific hardening activities such as covered conductor, undergrounding, and traditional overhead hardening.³¹

TURN additionally notes that PG&E’s failure to perform sufficiently granular risk-spend efficiency analysis harms decision-making.³² As TURN correctly notes, risk-spend efficiency analysis should be performed on tranches of assets that have “homogeneous risk profiles” so that the utility can determine which assets should be treated first.³³

Cal Advocates also identified numerous flaws in PG&E’s risk-spend efficiency analyses³⁴ and concluded that PG&E’s risk-spend efficiency estimates are not a reliable basis for deciding how to allocate resources³⁵ and “could contribute to a flawed overall strategy for risk mitigation.”³⁶

PG&E’s failure to perform sufficiently granular risk-spend efficiency analysis prevents the WSD and other stakeholders from determining whether PG&E has selected the best mitigation options to reduce risk. Consequently, PG&E cannot demonstrate that it has designed its 2021 WMP Update to minimize wildfire risk as required by law.

B. The WSD should require the utilities to validate their wildfire risk models.

Wildfire risk modeling is a crucial issue, because the large utilities rely on their risk models to determine where and when to perform mitigation measures. If the risk

³⁰ MGRA Comments, pp. 67 and 69; TURN Comments, pp. 26-27.

³¹ MGRA Comments, p. 69.

³² TURN Comments, pp. 18-20 and 25.

³³ TURN Comments, p. 19, citing D.18-12-014.

³⁴ Cal Advocates Comments on PG&E, pp. 46-51 (Section R).

³⁵ Cal Advocates Comments on PG&E, p. 51.

³⁶ Cal Advocates Comments on PG&E, p. 46.

models are wrong, then the utilities will spend time and money fixing the low-priority problems before more urgent ones. The utilities could end up spending years – and billions of dollars – working on circuits that only seem to be high-risk, while critical risks remain unaddressed.

MGRA identifies important concerns with the techniques that utilities use to model wildfire risk. Specifically, all three large utilities limit the duration of simulated wildfires to eight hours.³⁷ This modeling technique produces smaller fires than are observed in reality.³⁸ The results underestimate the risk of wildfires that ignite in remote areas but can spread into population centers over a period longer than eight hours. This modeling choice may skew decision-making, leading utilities to prioritize mitigations near population centers and ignore other circuits that also carry serious risks. In short, technical choices in risk modeling materially affect the practical conclusions one draws from the model.

Next, MGRA’s comments provide strong evidence that the utilities have not validated their models adequately. The WSD should require the utilities to show their work of validating their models.

In our comments on the utilities’ 2020 WMPs, Cal Advocates urged the WSD to require the utilities to “perform and publish validation analyses of the models they use to assess wildfire risk.”³⁹ In opening comments this year, we recommended that the WSD convene a technical working group in summer 2021 to examine wildfire risk models⁴⁰ and require the utilities to “produce public technical papers that describe, step-by-step, how each modeling product works.”⁴¹

³⁷ MGRA Comments, p. 12.

³⁸ MGRA Comments, p. 12.

³⁹ *Comments of the Public Advocates Office on the 2020 Wildfire Mitigation Plans*, April 7, 2020, pp. 57-59.

⁴⁰ *Comments of the Public Advocates Office on the 2021 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities*, March 29, 2021 (Cal Advocates Comments on SCE, SDG&E, and General Issues), pp. 29-35.

⁴¹ Cal Advocates Comments on SCE, SDG&E, and General Issues, p. 34.

Absent risk models that are accurate and reliable, the utilities cannot demonstrate that they have set the right mitigation priorities. Therefore, the WSD should move quickly to ensure that the utilities adopt empirically sound and well tested practices for risk modeling, as recommended by MGRA and Cal Advocates, to better meet the requirements of Public Utilities Code Section 8386.⁴²

C. The Commission should not allow utilities to use WMPs to circumvent Commission decisions in general rate cases (GRCs).

TURN raises concerns that the electric utilities are using WMPs to circumvent Commission decisions in general rate cases (GRCs) or to otherwise undermine GRC ratemaking principles, in violation of Public Utilities Code Section 8386.4 (disallowing double recovery of costs), Section 451, and Section 451.3.⁴³ Cal Advocates shares TURN’s concerns, discussed in more detail below.

1. PG&E’s transmission and distribution maintenance programs contain routine operating costs.

TURN notes that PG&E treats repairs to its distribution and transmission infrastructure as WMP initiatives (which are supposed to be incremental to compliance requirements),⁴⁴ while simultaneously stating that the repairs are “in compliance” rather than exceeding compliance standards.^{45, 46}

Furthermore, as TURN notes, PG&E apparently “intends to record all of these [equipment repair] costs in the WMP memorandum account as ‘incremental’ to its

⁴² Public Utilities Code Sections 8386(a) and 8386(c)(3); *see also* Public Utilities Code Sections 8386(c)(11) (identified and prioritized wildfire risks) and 8386(c)(17) (methodology for identifying wildfire-related risk).

⁴³ TURN Comments, pp. 7-11, 31-32, and 47-49.

⁴⁴ See PG&E’s 2021 WMP, Table 12, initiatives “7.3.3.12.3 Other corrective action, Maintenance, Transmission” and “7.3.3.12.4 Other corrective action, Maintenance, Distribution.”

⁴⁵ TURN Comments, p. 31.

⁴⁶ PG&E’s 2021 WMP, Table 12, initiatives 7.3.3.12.3 and 7.3.3.12.4.

authorized rate case costs.”⁴⁷ This is improper because transmission and distribution repairs are normal operating costs and, therefore, are not appropriately booked in the WMP memorandum accounts. The forecast cost of such repairs is one component of the base revenue requirement approved in each general rate case; therefore, if PG&E records such costs to a memorandum account and seeks recovery, it would be seeking double recovery.⁴⁸

The WSD should require PG&E to explain why its compliance activities related to equipment repairs and the associated costs are incremental to the work and funding already authorized in its general rate case.

2. SCE’s covered conductor program is subject to litigation in its GRC.

TURN observes that SCE’s covered conductor program in its 2021 WMP update mirrors SCE’s position in its 2021 GRC Phase 1 application,⁴⁹ for which a decision is pending.⁵⁰ Thus, it appears the scope of SCE’s proposed covered conductor work has already been litigated in the 2021 GRC proceeding.⁵¹ However, the scope and workplan for SCE’s covered conductor program in the 2021 WMP are *not* contingent on a general rate case decision.^{52, 53} This raises the possibility that SCE will implement its covered conductor program essentially as proposed in the general rate case, regardless of whether

⁴⁷ TURN Comments, p. 31.

⁴⁸ If a utility spends less on operational expenses than the GRC revenue requirement authorized for this purpose, the leftover revenue is profit.

⁴⁹ Application 19-08-013, *Application of Southern California Edison Company (U338E) for Authority to Increase its Authorized Revenues for Electric Service in 2021, among other things, and to Reflect that Increase in Rates*.

⁵⁰ TURN Comments, pp. 9 and 47-48.

⁵¹ TURN Comments, pp. 47-48.

⁵² SCE’s 2021 WMP, pp. 210-213. In the discussion of covered conductor installation, SCE makes no reference to the general rate case proceeding or decision.

⁵³ SCE’s data request responses regarding covered conductor make no reference to the general rate case proceeding or decision. See SCE’s responses to Data Request CalAdvocates-SCE-2021WMP-07, Questions 1 and 2, March 8, 2021; SCE’s response to Data Request CalAdvocates-SCE-2021WMP-12, Question 1, March 16, 2021; SCE’s supplemental response to Data Request CalAdvocates-SCE-2021WMP-12, Question 1, March 17, 2021.

the Commission approves, rejects or modifies SCE's proposal in the general rate case decision. Contrary to the Commission's clear intention, SCE could then seek cost recovery after the fact.⁵⁴

3. The Commission should require utilities to abide by GRC decisions.

The Commission and the WSD should explicitly state that electric utilities may not use the WMP process to circumvent or relitigate general rate case decisions. Once an issue has been litigated and decided in a general rate case, the utility is obligated to abide by that decision. If a utility seeks to change the outcome of a general rate case, the proper mechanism is to file a petition for modification or an application for rehearing of the decision.

If the Commission rejects a proposal in a general rate case, or decides that a different budget is just and reasonable, the utility should not be able to record the costs in a memorandum account and seek to have the costs deemed reasonable after the fact. Therefore, Cal Advocates supports TURN's recommendation that the WSD and the Commission make clear its intent "in the WMP decision or resolution that, in the case of any divergence between an approved WMP and the programs approved in a final GRC decision, the utility's cost recovery is bound by the program budget and unit costs approved in the GRC decision."⁵⁵

III. CONCLUSION

Cal Advocates respectfully requests that the Wildfire Safety Division adopt the recommendations discussed herein.

⁵⁴ SCE could record any excess costs (above what is approved in the GRC) in a memorandum account and seek cost recovery later, subject to reasonableness review.

⁵⁵ TURN Comments, p. 9.

Respectfully submitted,

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To: [Paul Hellman](#); [Lio Salazar](#); [Adam Fieseler](#)
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Date: Thursday, May 20, 2021 10:52:24 AM

Tracie Huff
Administrative Secretary I
Planning Division
Shasta County Resource Management
1855 Placer Street STE 103
Redding CA 96001
(530) 225-5532 Phone
(530) 245-6468 Fax
resourcemanagement@co.shasta.ca.us

-----Original Message-----

From: Evan Watson <watson.evand@gmail.com>
Sent: May 20, 2021 10:51 AM
To: SCPlanning <scplanning@co.shasta.ca.us>
Subject: Comment on Fountain Wind

Hello Members of the Planning Commission:

I grew up on the Big Bend Road and attended Cedar Creek and Montgomery Creek Schools. I am writing today to urge the planning commission and the county supervisors to deny a permit for the Fountain Wind Project. At the core of my concern is wildfire safety for the communities of Round Mountain, Oak Run, Montgomery Creek, Hill Crest, Moose Camp, and Big Bend. As articulated by the recent letter from the Associated Aerial Firefighters, if the windmills project proceeds, it will limit the use and effectiveness of aerial firefighting. That is an unacceptable risk and burden to place on communities and landowners. When I was five the Fountain Fire nearly burned the home I grew up in. When we returned after a two week evacuation there was a red swath of fire retardant between our driveway and the edge of the fire. I am thankful for the tanker and pilot that flew in the load of retardant. Without it my family may very well have lost our home.

I am very supportive of Shasta County embracing and benefiting from renewable energy projects. However, proceedings with a project that puts communities and lives at risk is not wise, especially when there are alternatives such as biomass that are more suited to our area. Thank you for your time.

Sincerely,

Evan Watson
530-949-1641

From: Charis Scofield <charis.scofield@gmail.com>

Sent: Saturday, June 5, 2021 7:56 PM

To: FountainWind411 <FountainWind411@esassoc.com>

Subject: Re: Fountain Wind Project Update: Notice of Planning Commission Hearing

I think the most important thing to consider is what does Pit River tribe think? If it is Pit River land, then it is just the stealing of land all over again without it being their project/ their choice. Being Winnemem Wintu, and my family losing their homes in Kennett because of eminent domain to build Shasta Dam, this is disheartening that it seems the tribal land is ignored yet again for a project that is not even environmentally friendly.

These are my thoughts I am submitting in opposition to the project.

Charis Scofield

--

Charis

www.charisscofield.com

From: [Stremple Susan](#)
To: [Lio Salazar](#)
Subject: FountainWind411
Date: Monday, June 7, 2021 3:35:42 PM

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Dear Mr. Salazar,

I believe whole heartedly in alternative energy, however, not at the expense of safety. Cal Fire says they will not be able to fly water tankers into the area due to the Wind Turbines. I don't know how you can put people's lives and property in danger. After the fires we have seen in California it seems almost criminal to allow these turbines to be built with the knowledge that it is a mountainous area and in case of a fire, air tankers cannot be used.

Please reconsider your position.

Sincerely,

Susan Stremple

From: [bruce stein](#)
To: [Lio Salazar](#)
Subject: Re: Against Planned Obsolescence
Date: Monday, June 7, 2021 3:41:03 PM

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On Jun 6, 2021, at 8:36 AM, bruce stein <brucelstein@gmail.com> wrote:

Mr. Salazar,

I am all for alternative energy sources and options. How many times do we need to start with a good idea but fail in execution? If the planned 5 windmills are built near Moose Camp and Cal Fire is correct in saying that the windmill presence will prevent them from flying fire tankers there then at what cost are we achieving progress?

Please, for once, make sure planning takes into account inevitable environmental problems. Fires have been a way of life in CA and global warming will only make that reality more frequently a problem. We know that fires have been and will be a problem near Moose Camp and the adjacent regions. Let's plan for what is inevitable now and not insist on doing another bone-headed, short-sighted government plan.

Thanks for reading.

Bruce

From: ebeltz@ebeltz.net
To: [Lio Salazar](#)
Subject: Comment Re: Shasta Wind
Date: Monday, June 7, 2021 10:17:13 PM

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Greetings Planner Salazar:

I am a retired Geology professor and have more than average experience with planning and CEQA. I reviewed the Fountain Wind EIR and replies by your planners to two thousand pages of comment. I was disturbed by the lack of subject understanding and professionalism displayed by your planners. It would seem from their replies, that this is a "done-deal, shoe-in, no-comments-matter" project. As we all know, those projects are the ones that get sued. In the interest of avoiding "too long/don't read," I have listed some parts of the EIR/replies which are particularly troublesome in the Appendix below.

Executive summary:

- * Incomplete alternatives analysis.
- * Documents which do not permit reasonable members of the public to understand the cumulative impacts of the project.
- * Cumulative impact analysis rejected by relevant agencies.
- * Too many impacts which cannot be mitigated. Projects with even one Unmitigated Impact can get sued. Here you have more than one - and those you have are "hot buttons."
- * Fiduciary risk - unless you have a specific agreement with the developer, litigation costs will be borne by Shasta County taxpayers which is not likely to make anyone popular.

I am certain you understand that the need for civic harmony is paramount. I recommend either sending this EIR back to the planning department for additional work as recommended by the state agencies who will also be asked to issue permits for this project, or - simplest of all - denying it.

Sincerely yours,

Ellin Beltz
Ferndale, CA

APPENDIX

My specific concerns include but are not limited to:

All quotes are from your publication

at <https://www.co.shasta.ca.us/docs/libraries/resource-management-docs/eir/fountain-wind-project/feir/web-fwp-feir-vol-1-2021.04.pdf?nocache>

(A) “New Design Features and Applicant Proposed Measures”

page 1-5 FEIR, April 2021 are documents which should be included in the EIR for consideration prior to approval of the project. This section is full of deferred mitigation, even though the writer claims they are not “mitigation measures,” elsewhere in many other wind turbine CEQA documents, these are standard mitigation measures and should be so considered here. Particularly the Bird and Bat Conservation Strategy, the Nesting Bird Management Plan and Invasive Species Management Plan should be completed and included in the EIR prior to final approval. Anything less opens this document and your county to litigation - as has happened elsewhere on these same issues.

(B) “Scenic Vistas Character or Visual Quality of Publicly Accessible Views”

The view will never be the same again. The EIR states clearly that there is no way to mitigate this impact and that it remains severe regardless of make or model of turbine. Night lighting will flash red dots along all ridges. Night in fog will be pulsing red sky over the ridges - visible for dozens of miles in every direction. The turbines are installed in the high places which results in their visual impact extending over a huge area. Parts of Fountain Ridge can be seen two counties away. Do you really wish to permanently change the night sky for three counties?

(C) “Bald and Golden Eagles”

The bald eagle is the symbol of our one nation, united under God. But this says “The Draft EIR’s analysis of Impact 3.4-3 concludes that the Project could, unless mitigated, result in significant adverse impacts to or direct mortality of bald and golden eagles. “With the implementation of Mitigation Measures (listed) the impact would **remain significant and unavoidable**. Those last four words mean “Eagles will be killed.” There is no mitigation for death. There will be large mortality. Fairly obviously, this is why these projects are routinely opposed by and taken to court by people and entities who care for animals and the natural environment.

(E) “Other raptors”

“The Draft EIR’s analysis of Impact 3.4-8 concludes that the Project could, unless mitigated, result in mortality and injury to raptors (including goshawk), as a result of collisions with wind turbines and electrical transmission lines (listed)... the impact would remain **significant and unavoidable**.” More dead birds are expected and nothing can or will be done that can help them. (

(F) “Bats”

“The Draft EIR’s analysis of Impact 3.4-13 concludes that the Project could, unless mitigated, result in direct mortality and injury to bats, including special-status species....the impact would remain **significant and unavoidable.**” Simply stated, these turbines are death from above to anything that flies.

(G) “Cumulative Impacts”

“The Draft EIR’s analysis of Impact 3.4-18 concludes that the Project could cause a cumulatively considerable contribution to a significant cumulative impact to avian and bat species from collisions with Project infrastructure.” In plain English this says, there is no mitigation that will stop the deaths of flying animals.

(H) “Cultural”

The Draft EIR’s analysis of Impact 3.6-3 concludes that the Project would, unless mitigated, cause a substantial adverse change in the significance of a tribal cultural resource... **the impact would remain significant and unavoidable.**”

(I) “1.2.3.2 List of Applicant-Proposed Conservation Measures”

This list is almost amusing in that earlier in the document it said “no impact” to several of the types of animals listed here, and then says this will “reduce potential impacts.” Three of these refer to the DEIR, without update to the EIR so you know right there that no impact was found. Usually if there is no impact that would be “zero” and there is no way in real life to reduce an impact to less than zero.

(J) Comments: The agency received 2,000 pages of comments. That would indicate great public interest in this project.

(K) "U.S. Department of Interior letter"

The US Department of the Interior requested that the night skies stay dark. Planner's answer: “the Project’s extension of turbine lighting across ridge lines would be significant in the cumulative context because it would result in a cumulatively considerable contribution to an existing adverse cumulative condition. No reasonable, feasible mitigation measures are available to reduce the Project’s incremental contribution to a level that it would not be cumulatively considerable (i.e., a less than significant contributor to cumulative conditions). From other locations, Project lighting would be visible cumulatively, as one drives along SR 299, decreasing the area along SR 299 where no turbine lighting is visible..... This would result in additional locations along SR 299 where a few safety lights would be visible. The Project would result in an extension of areas along SR 299 where turbine lighting is visible, resulting in turbine lighting in areas with very limited nighttime lighting. Therefore, the Project would have cumulative considerable contribution to an adverse cumulative condition. No reasonable, feasible mitigation measures are available to reduce the Project’s incremental contribution to a level that it would not be cumulatively considerable”
Summary: yes it will make more light pollution at night, but whatever, developer has to make money.

(L) "California Fish and Wildlife Department letter"

As expected from the agency which regulates biological resources for the state, the California Fish and Wildlife Department (CDFW) made specific requests: "If take of Fully Protected species is unavoidable, CDFW recommends the Project develop a Natural Community Conservation Plan (NCCP) that would authorize this take." They state that the cumulative impacts analysis is incorrect and why. CDFW states that several species were not studied as they should have been and therefore the analysis is flawed for birds, bats, mammals and plants. Specifically in plants the CDFW states that certain habitat types - clearly listed on public resources - were overlooked and questions the conclusions of the EIR due to those omissions. In the wetland section, it points out that EIR data tables are incorrect and that the errors from this cascade through the DEIR and need to be fixed. CDFW says that the status of several species in the EIR and appendices are/were incorrect and that these errors cascade throughout the documents (p. 2-52

<https://www.co.shasta.ca.us/docs/libraries/resource-management-docs/eir/fountain-wind-project/feir/web-fwp-feir-vol-1-2021.04.pdf?nocache>) Your planners replies to the agency are in some cases amusing especially as some of them contradict the EIR documents they cite. Basically someone at the county told the CDFW to stuff it. Personally, if I were a county supervisor, I would be embarrassed at the quality of replies to the agencies. There is no way your planner - no matter how excellent - knows the regs as well as the agencies who work with them all the time. These letters are intended to help the project. I don't understand why your people would reject the agencies's help and guidance. That they went so far as to underline multiple paragraphs of their reply shows a lack of professionalism and respect to the agency. Only some of the agency recommendations were "partially accepted," the rest were brushed off.

(M) "Organization and Public letters"

Then come nearly 2,000 letters from organizations and the public. The replies were predictable. No one but your planners has an allowable opinion because they are in favor of the project, doing it however they want, and nothing anyone says is going to change anything is the essence of their replies. I realize I am summarizing 500 pages of replies here, but they are consistently dismissive and in many cases disrespectful of the agencies, organizations and members of the public who apparently wasted their time trying to improve the project. Superior to inferior writing is a predictable method of riling up a marginalized public and is not usually recommended for civil harmony. It must be particularly galling for members of the public who are actually correct in their statements and who were dismissed like ignorant children by your planners' replies.

(N) "One of many examples of internal contractions and misinformation"

Particularly I would refer to to Page 2-125 "The comment correctly notes that members of the public identified potential cumulative effects to aesthetics as a topic to be evaluated in the EIR for this Project. See Draft EIR Appendix J, Scoping Report, at pages 9 and 10. In part based on these suggestions received as part of the scoping process, the County analyzed the potential for the Project's impacts to combine with the impacts of other projects, such as the Hatchet Wind Project, to cause or contribute to a significant cumulative effect on aesthetics in Draft EIR

Section 3.2.5. ... Viewer exposure, viewer types (including drivers), visual sensitivity, and movement (“texture”) all are concepts that inform the analysis (see Draft EIR at pages 3.2-2 and 3.2-3).” This statement is directly contradicted by the agency who differed with the cumulative analysis of this same set of sections as stated above in comments K & L. I think the agencies are more likely to be correct than your planner, no matter how good they are at planning. Continuing to read these replies shows thousands of hours of tax dollars wasted telling agencies, organizations and citizens that their concerns are invalid based on DEIR number this and that, when the agencies are saying there’s big holes in parts of this document that are not filled by multiple paragraphs of underlining pretending to be authority.

This concludes the Appendix of this comment, thank you. Ellin Beltz

From: Steve Johnson <shaggyburn@gmail.com>
Date: June 10, 2021 at 2:55:16 PM PDT
To: Tracie Huff <thuff@co.shasta.ca.us>, Clerk of the Board Mailbox
<ClerkoftheBoard@co.shasta.ca.us>, Joe Chimenti <jchimenti@co.shasta.ca.us>,
Leonard Moty <lmoty@co.shasta.ca.us>, Mary Rickert
<mrickert@co.shasta.ca.us>, Patrick Jones <pjones@co.shasta.ca.us>, Les Baugh
<lbaugh@co.shasta.ca.us>, Paul Hellman <phellman@co.shasta.ca.us>, Lio
Salazar <lsalazar@co.shasta.ca.us>
Subject: Fwd: Office Depot Scan

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Dear Ms. Huff,

Attached is a letter to each member of the Shasta County Planning Commission and to each member of the Shasta County Board of Supervisors concerning the Fountain Wind project, and specifically the potential wildfire risk posed by the proposed project. I respectfully request that you forward this email and the attached letter to each member of the Planning Commission and ask the members to read and seriously consider the comments in my letter before the upcoming public hearing on the matter currently scheduled for June 22, 2021.

I am a retired attorney who practiced for over 30 years in one of the largest, and I believe best law firms in the United States, Gibson Dunn & Crutcher. In the course of my legal career, I represented wind farm developers, public utilities, and others in relation to various alternative energy projects, and other significant litigation matters. I have litigated over wind farms in the Altamont Pass and Tehachapi areas of California, and represented one of the largest insurance companies in the world in litigation concerning the performance of the then largest solar electric generation facility in the world (located in Kramer Junction, CA). Early in my career I did some legal work following the oil spill in Alaska

from the Exxon Valdez. I have also represented timber companies, and have led or participated in several internal investigations, including an independent investigation into the San Bruno explosion of a PG&E transmission line in 2010, that led to PG&E paying hundreds of millions to claimants, and \$1.6 billion in fines to the CPUC. In that matter, I worked with a team of lawyers representing an independent committee of the Board of Directors of PG&E. I have also represented several Fortune 500 companies in the course of my career, including companies such as Intel, Amazon, Hewlett Packard, Hertz, Walmart, and American Express, just to name a few, as well as a number of banks and other financial institutions. I have litigated CEQA and other land use cases in the past, and in the later stages of my career, I rarely would get involved in litigation matters where there was not at least tens of millions or hundreds of millions of dollars at stake. I am now retired, and a full time resident of Shasta County, where I have owned a 400 acre ranch near Montgomery Creek for nearly 20 years. I believe I bring a unique perspective to the Fountain Wind matter, and I think the Planning Commissioners will be interested in what I have to say on the matter. Given the time limitations at the upcoming public hearing, I have put my comments on the important issue of wildfire risk in the attached letter, and ask that each of the Planning Commissioners review and consider my letter before they vote on the matter following the upcoming public hearing, and that each member of the Board of Supervisors also review and consider the comments in my letter before they later vote on the matter as well, as regardless of how the Planning Commission comes out on this, its decision is sure to be appealed by one side or the other to the BOS in the end.

Thank you for your time and attention to this matter.

Respectfully submitted,

Steven J. Johnson

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June 9, 2021

Shasta County Planning Commission
Shasta County Board of Supervisors
Shasta County Planning Department
1855 Placer Street, Suite 103
Redding, CA 96001

Re: Fountain Wind Project Application

Dear Shasta County Planning Commissioners and Board of Supervisors:

I write to provide comments on the Final Environmental Impact Report for the proposed Fountain Wind project and to urge you to vote no and deny the project application. You owe it to yourselves, and to your constituents, to read this letter before you vote on the project.

First and foremost, the Fountain Wind project will greatly increase wildfire risk and should never be built, as proposed, in the highest fire danger zone in the state. The project site has burned before in the Fountain fire, and there have been numerous fires in the Montgomery Creek and Round Mountain areas since then, including a fire two summers ago that resulted in the evacuation of the town of Montgomery Creek. That fire was fought, in large part, from the air using resources that had already been scrambled for the Carr fire, which was in its first week at the time. Of course, if the Fountain Wind project had been built before that fire, aerial firefighting would have been more difficult if not impossible, and we would have had two fires burning toward Redding at the same time, the Carr fire from the West and the Montgomery Creek fire from the East. The point is, you should not only consider the impact of one catastrophic fire, but should also consider multiple fires, as occurred last summer, and at the time of the Carr fire, all at the same time, that together constrain firefighting resources, and often spread to hundreds of thousands of acres in a short period of time.

The tens of thousands of acres on which the Fountain Wind project are proposed to be built include some of the area that was burned in the Fountain Fire. Setting aside the irony that the "Fountain Wind" project was named after what was then the largest forest fire in Shasta County history, the "Fountain Fire," the fact remains that the project area is now even more fire prone than it was then. This is because highly flammable, densely packed pine trees were planted there after the Fountain Fire, and are now 30-50 feet tall. Since these densely packed Ponderosa pines are highly flammable (more so than most other conifer species, and these have been grown very close together), there is now a higher fire risk there than the natural forest that was there before and that burned down in the Fountain Fire. And we are in a period of severe drought, making matters even worse.

The point is, this location is totally unsuitable for this type of project, and the project should never be built there under any circumstances. It is an area of frequent lightning strikes, which have sparked many fires in the Montgomery Creek area in recent years. The turbines and associated electrical infrastructure could easily cause a forest fire, despite the proposed mitigation measures that amount to little more than rearranging the deck chairs on the Titanic (during that tragedy someone proposed that all the passengers go to one side of the deck of the ship to balance it out, after it started listing badly, but it sunk anyway, and hundreds died, including the ship's designer who was on board and had previously declared it "unsinkable." He probably would have said it was unsinkable or that there was "less than significant impact" from icebergs in an EIR if they had those back then). After the iceberg struck, the designer of the ship who had said it was unsinkable went to the Captain and said the ship would sink in a couple of hours. That was quite a flip flop. The point is he knew that the collision with the iceberg would soon overcome the design elements that were supposed to make the ship unsinkable. So yes, the nacelles have built in sprinklers. So do a lot of buildings, and none of those buildings have ever burned down, right? To trigger the sprinklers, you first have to have a fire. Which means something has already gone horribly wrong. The turbine has been hit by lightning or has malfunctioned and caught on fire. And sparks are already flying, from high above into the surrounding forest. Have you ever seen the crown of a tree explode in a forest fire? Have you ever seen the explosive fire that can be caused by a single lightning strike? There can be an explosion of fire, like a strike from a missile. And yes, there is a mitigation "fire plan" and "evacuation plan." Would such a plan have prevented the loss of life and billions in damages caused by the Camp fire? The Carr fire? The Zogg fire? The dozens of other fires in California last year? Of course not. Those fires spread very quickly to thousands of acres in high winds. The Titanic sunk only a few days into its maiden voyage after being declared "unsinkable." Are you willing to bet the very lives of your constituents that there won't be lightning, won't be a fire, in the project area at any time in the next 40 years if you approve this project? That the so-called "mitigation measures" will prevent or contain any and all fires there? That everyone will escape a massive forest fire there pursuant to the project's "escape plan" given that there is only one way out, Highway 299, and it may be blocked by the fire?

Wind turbines can and do catch on fire from time to time by themselves. This has happened in wind projects before, all over the world. Which is why almost all wind turbine projects are not built in high fire risk danger zones. Human activity associated with the turbines can also cause a fire. Trucks, project operations, power lines, fossil fuels (in the nacelles and on the ground) can all cause forest fires. Indeed, a wind project in Washington had a wind turbine catch on fire and start a forest fire there just two summers ago, so there is recent evidence that this can and does occur. Fortunately, that project was built in high desert (few trees) and the fire was able to be contained to only 500 acres. The same fire in the Fountain Wind site could have easily spread quickly to be another Carr fire. There were likely similar mitigation measures in place there too, but it didn't stop the fire from happening, caused by one of the wind turbines catching on fire.

Forest fires in the project area can also be caused by dry lightning. The proposed 72 turbines would be the largest lightning rods ever built in Northern California. 72 giant lightning rods in the highest, most extreme fire danger zone in the State. And while they would be grounded, like many tall structures are, these towers will actually attract more lightning to the area, and lightning strikes are never one and done. Instead, lightning tends to hit structures (man made, like wind turbines, or natural such as trees) and then splinter off into multiple threads, causing multiple fires, especially in dry lightning storms. And a single storm can cause hundreds of lightning strikes. These turbines have giant metal structures at the top (nacelles generating electricity with lots of friction and grease and other fossil fuels inside that can catch on fire) and they are so tall, they will each be a major draw in lightning storms. Indeed, each turbine at full blade height, will be nearly twice as tall as the Statue of Liberty. Think how tall that is. Think of Lady Liberty holding that flame above her head, and then think of another on top, twice as tall, that attracts lightning and now imagine that the flame she holds is a real flame in high winds. How far will the sparks fly? Recall in the Carr fire, and other recent fires, that the wind would spark new additional fires a half a mile away (called spot fires). How many fires in how broad an area could be caused by flaming turbines? Now close your eyes and picture what lightning looks like. It is not a single burst, that might hit one turbine only and then travel through the grounding system into the ground. Lightning doesn't look like that. And lightning doesn't work like that either.

More likely, if the project is built, an electrical storm with dry lightning that hits tall objects and splinters into countless offshoots, could end up causing 20 or 30 or more fires in the 30,000 acre project area, all at the same time, even if none of the nacelles catch on fire. This sort of event--a lightning complex of fires--happened in many of the lightning storms that caused fires all over California last summer, even without wind turbines--multiple fires over a large area all burning at the same time. Last summer, one of those fires happened in Santa Cruz county, actually 20 fires started by the same lightning storm that combined into a single fire that burned 40 percent of the County. Yes, 40 percent of the land area of that county burned last summer. 35,000 people were evacuated. Over 1,000 homes were burned down. Now imagine that it occurred here in this County, begun at the project site by lightning hitting the turbines, and imagine further that the fire(s) could not be fought from the air (due to 72 giant impediments to aerial firefighting, creating a practical no fly zone). So the fire spreads unnecessarily, to hundreds of thousands of acres, and burns into Redding. Such a fire might be named Fountain Fire II. Only here, much of the tragedy, or at least the severity of the tragedy, could have been easily prevented or minimized (by you voting no on building the 72 giant lightning rods in the first place, and associated electrical infrastructure, and by making sure that we don't create additional hazards to aerial firefighting in what is already an extreme high fire danger zone of the County).

There were something like 1000 fires caused all over the state by a single storm system last summer. They called many of those fires "lightning complex" fires. Since such an event is even more likely when lightning is drawn to the area by giant wind turbines, this project will just make the high fire danger in the project site area even worse. In other words, the project, if built, will exacerbate the high fire risk problem that already exists

there, and the FEIR admits as much, but here is the catch. It can't be mitigated. The turbines will attract lightning--some of the strikes may hit the ground directly, some may splinter off the towers into the trees, some may splinter off of the densely packed pine trees themselves, and likely there will be many, many fires in that 30,000 acres all at the same time if and when it happens. The reason this is important, is that you must understand that if and when dry lightning fires occur there, it is highly likely that there will be several fires that need to be fought over a large area all at the same time, which makes fighting fire from the air even more important.

However, if a lightning complex group of fires occurs there, the very existence of the wind turbine project there, even if the fires are sparked naturally, will nonetheless impede firefighting efforts from the air. No helicopters or air tankers will be able to get in there, with the turbines in the way, turning a fire or fire complex, that might have been contained more quickly, into a raging fire like the Carr fire, the Camp fire, the Hirz fire, the Delta fire, or the Zogg fire--a raging inferno spread over hundreds of thousands of acres, out of control, that will burn down Montgomery Creek, Round Mountain, Oak Run, Burney, Bella Vista, and potentially burn into Redding from the East, just as the Carr fire burned many miles into Redding from the West and jumped the Sacramento River with a 7000 foot tall fire tornado. No mitigation can prevent or fix that. The turbines will create a virtual no fly zone. The FEIR says that helicopters should be able to fly between the turbines, as long as they know where they are (ignoring the stuff that firefighters and even ordinary people like us call "smoke.") The solution or "mitigation" proposed in the FEIR is that CALFIRE will be told where the turbines are. No kidding, that's it. And what does the FEIR rely on? Apparently the fire chief said that it helps to know where the impediments to aerial firefighting are. No kidding, that's it. So we either have a no fly zone or we put our aerial firefighters at great risk to try to duck and weave among the turbines, if they dare go in there at all. Gee, that seems worth it for a little more tax revenue, doesn't it? I repeat, no mitigation can prevent or fix the 72 skyscraper-like impediments to aerial firefighting, or prevent a lightning complex of multiple fires all at the same time from a lightning storm drawn to that area by the wind turbines, or splintered off into the trees by strikes on the turbines. And just in case, I will repeat it again. No amount of mitigation, no notices on the bulletin board in the trailer on site, no additional "training" of operations personnel to grab a fire extinguisher or call 911 if they see a fire a half a mile away in a remote area of the project site, no number of lightning rods or sprinklers in the tops of the turbines, no canned list of two or three dozen "mitigation measures" that they put in every EIR like this, will prevent or fix the problem. The only way to prevent it is to not build the project there.

People will die horrible deaths and be burned alive in such a fire or "fire complex." This type of human tragedy just happened in the Carr fire, the Camp fire, and less than a year ago, in the Zogg fire. Close your eyes again and picture in your mind the burned up charred bodies of small children and other innocent victims unable to escape from such a fire. It is hard to picture isn't it? There were over 80 such charred burned bodies in the Camp fire. Several in the Carr fire. Some in the Zogg fire too, including persons trying to flee the fire (unsuccessfully) on the only escape route. Which also happened in the Camp fire, one of the worst tragedies in California history.

So, if a fire happens at the Fountain Wind site and people die horrible deaths, it's not your fault right? You have an EIR to rely on, so not your fault? The EIR tragically concludes, based on no substantial evidence, that, if mitigation measures are adopted, there would be "less than significant impact" on wildfire risk from the building and operation of the Project on this site--a site that is in the highest, most extreme, forest fire danger zone in the State. **The only real mitigation measure that will work—the one that the EIR spends thousands of pages avoiding any real discussion of for obvious reasons—is don't build the project there.** The so-called "no project" alternative is given short shrift in the EIR, and no alternative sites are considered at all. The FEIR was written to downplay the risks and gain your approval. It systematically eliminates any serious discussion of the real risks here, and dodges and weaves around all of the thousands of comments on the DEIR, avoiding addressing most of them by means of pat meaningless, and often repetitive statements. So yes, the FEIR is supposed to give you some sort of cover, I suppose, for approving the project. But after the tragedy occurs, if it occurs, that will all fall by the wayside.

So before you vote on this project, you really have to first consider or imagine yourself, and what your personal world will be like, after the fire, after the tragedy has occurred. You really need to put yourself in that place and picture your world after such a tragic event actually happens. You need to understand that people will blame you for the tragedy, at least in part, after the fact, and they will be right. And therefore you need to take personal responsibility for your vote, and think of the consequences, before you vote. By the tragedy, I mean a forest fire like the Camp fire, like the Carr fire, like the Zogg fire, and like so many others in the State in recent years, where people died horrible horrible deaths. Only this one will have likely been preventable. By you.

The County is already on notice that major fire danger in this county is real and that these types of wildfires will happen again and again in heavily forested areas, in high fire danger zones, which is why that area, that project site, is rated the highest fire danger zone in the entire State. It is hard to think of a more inappropriate, unsuitable location to build this project than that site. Please help me. Can you name a more inappropriate site to build this project on? What would a more inappropriate site look like? There isn't a more high fire risk zone where the project could be built and be more dangerous. I can't think of a more dangerous site in terms of wildfire risk, can you?

After the tragedy, after the massive fire happens, if it happens after the project is built, no jury, no member of the public, no state or federal investigator, no plaintiff's attorney, no one in the planning department (current folks who favored this project or approved it will likely be gone after pushing this project and later realizing that it caused a tragedy that could have been so easily avoided by building the project somewhere else), indeed no one, will think that the project should have been built at all in that location. Everyone, including the public and the press, and including the thousands of claimants suing the project and the County, will think and agree that approving the project and building it there was beyond negligent, beyond gross negligence, beyond reckless. There may even be criminal investigations. I don't say that lightly. There have been

criminal investigations into PG&E, for example, after recent fires. Indeed PG&E was held criminally liable for several felonies by a federal jury after the San Bruno disaster (in that case, a gas explosion that burned up a neighborhood). The theme that the federal prosecutors put to the jury? (I attended the closing arguments.) **That the decision makers put profits over safety.** Money over people's lives. The questions will be asked in investigation after investigation, trial after trial--just how did this thing get approved and built in that extremely high fire danger zone anyway? Any fifth grader could see that to build this kind of project in such a high fire danger zone was ridiculously irresponsible and put the lives of the public at great risk. And then people died, just as they knew they would if the tragedy were to occur. What were they thinking?

As in the federal criminal trial of PG&E after the San Bruno disaster, people will accuse those who were in a position of being able to avoid the disaster of putting money (in this case, increased tax revenues from the project) ahead of the lives and safety of the public. And, of course, the public and the victims will cry out for justice against anyone who approved the project or recommended its approval. At a minimum, careers may be ruined. **Worse still, you will have to live with yourselves.** I ask you to imagine what your world will be like if or after the tragedy happens, and everyone is investigating how the thing got approved when it so obviously should have never been built there in the first place.

In such event do you really think that you will be able to hide behind an EIR that is plainly insufficient under CEQA and does its best to ignore all the elephants in the room? **Do you really believe, in your heart of hearts, that anyone will believe you when you say that you didn't think that the project would add to the fire risk at that site or impede fire fighting efforts from the air? How would you answer such questions under oath? Really?**

The finding in the EIR that, in light of certain mitigation measures, there is "less than significant impact" of the project on wildfire risk is unsupported by substantial evidence as required by CEQA and unsupportable, if not downright embarrassing. In CEQA terms, there is no substantial evidence to support the conclusions therein, and therefore the whole fire section violates CEQA. The "mitigation measures" include fire safety measures, "Nacelle Fire Risk Reduction" (primarily if a nacelle catches on fire, there is a system in the nacelle that is supposed to put the fire out), and an "Emergency Response Plan." Almost all of which means nothing in a major forest fire, where hundreds or thousands of homes burn to the ground and people die. The emergency response plan when the fire tornado crossed the Sacramento River in the Carr fire was, of course, fire fighters and public safety officers racing through neighborhoods telling people to evacuate immediately. (Another less kind way to put it is that the evacuation "plan" amounted to run for your lives).

Indeed, the flawed EIR will likely be a focus of billions of dollars of claims in lawsuits against the project owner or developer (which will likely be an LLC that could be forced into bankruptcy), if not the County. Plaintiff's lawyers will search of course for a deep

pocket when filing the hundreds of lawsuits that are sure to ensue, if a major fire occurs. Potential liability will be blindingly obvious. Do you really think, that after billions of dollars of damages, loss of life, and a tragedy of errors beginning with your vote, that the County will ultimately be found to be completely immune? Ask the cigarette manufacturers. Ask PG&E. Ask Monsanto (the maker of Round Up). Ask the asbestos companies. They all thought they would be immune from lawsuits too. It is a certainty that Plaintiffs lawyers will file lawsuits claiming billions of dollars in damages after a major fire emanating from this site. Hundreds of lawsuits just happened after the Carr fire, the Camp fire, and now the Zogg fire, all fires in which people were burned alive. Such claims, from multiple fires, bankrupted PG&E, which faced 50 billion dollars of claims in its bankruptcy, mostly from wildfires allegedly caused by negligent maintenance of power lines. Criminal investigation(s) have either concluded with liability or are still ongoing.

But a fire in the Fountain Wind site, unlike negligent maintenance of power lines, will present additional facts that will likely shock the public. Here, the fire might have been prevented by not building the project at that site at all, and there were a plethora of reasons not to. **Here, the County will have allowed some of the largest turbines ever built in California to be built in the highest fire danger zone in the state, knowing of the fire risk, and having just witnessed people being burned alive in Shasta county less than a year before, and more burned alive the year before that and the year before that.** All to get a little more tax revenue? Really?

No jury, after people are burned alive, will think for one minute that anyone reasonably could have ever found, in an EIR or otherwise, that "mitigation measures" would result in a project that did not pose a significant increased risk of wildfire. No one will believe that it was "reasonable" or that there was "substantial evidence" to support a finding like that in the EIR, or that it was reasonable for any public official, charged with the protection of the public he or she serves, to believe that all the increased wildfire risks could be adequately mitigated. That part of the EIR will be an exhibit in countless lawsuits, and no doubt scrutinized in investigation after investigation, and we all know that it can't withstand any scrutiny at all. Common sense after such a tragedy tends to prevail. Common sense will tell you that you must vote no. Indeed, if you vote yes and the tragedy occurs, you may very well be called to testify and answer questions yourself as to how you let this happen, and what your role in failing to prevent it was. People will be blamed, careers will be ruined, and litigation will likely bankrupt the project, leaving burned towers twisting in the wind forever that will never be removed, giant fire scars, loss of homes, loss of businesses, and potentially catastrophic loss of life. The impact on the County and its finances will be catastrophic too. Think it can't happen? Look at recent fire after fire, in this county and neighboring counties. Look at all the hundreds of lawsuits that have been filed and are still being filed following every major wildfire. Look at PG&E. Think again. This project should never be built in this location.

It can be built in another area where there are no trees. Simple as that. But your Planning Department wouldn't allow alternative sites to be considered, and the FEIR

refused to and doesn't even consider any alternative, safer sites. Another violation of CEQA, and there are too many others to list here. And of course, the County's zoning and general plan are both woefully inadequate. The County wouldn't even consider a temporary moratorium while it got its house in order. Does this look bad to you yet? What are you going to say if and when the tragedy occurs and the public and investigators start asking you questions on how you let it all happen?

Third graders could tell you that you don't build a project that can cause wildfires in the middle of a tinder dry forest during a drought. We all know now that you don't build nuclear power plants on active earthquake faults (see Fukushima, still melting down out of control 10 years later, no doubt it was thought to be "safe" after "mitigation measures" when built). Things melt and cause a toxic horror show in forest fires too. You don't overburden an electrical power grid that has already been proven to be unsafe (see PG&E, and investigations into causes of recent fires). No mitigation measures can solve the problem that this is just an inappropriate site for this kind of project. The project should be built in another county, or another state, on bald ridges, away from population centers, where there are no trees. Not here, not spread through 30,000 acres of tinder dry highly flammable and densely packed forest. And not where there is only one way out, Highway 299, which could be blocked by the fire, exacerbating an already tragic situation. This project should not be built on the proposed site. Period full stop.

There are three or four major wind development areas in the State of California that already have thousands of turbines. Have you been to any of them, toured any of them? I have. They are San Geronio Pass (near Palm Springs), Tehachapi, Altamont Pass, and the Delta. What do they all have in common? No trees. They also have thousands of aging wind turbines in those areas twisting in the wind, leftover from defunct projects, that can be replaced with new, next generation turbines, like the ones proposed for Fountain Wind. And there are many other more suitable (and safer) sites outside the state too, like in Texas and Wyoming, where there are thousands and thousands of turbines already, and all surrounded by—you guessed it—no trees. How many alternative sites did this public agency, indeed the lead agency, consider in the EIR? Oh, I forgot, none. Great optics for the public, plaintiff's lawyers, and juries if the fire happens. Whose decision was it to intentionally not consider any alternative, safer sites? Don't look around. Since you are voting, and you didn't ask or insist that alternative, safer sites for the project be considered, then the decision not to consider safer, alternative sites was yours.

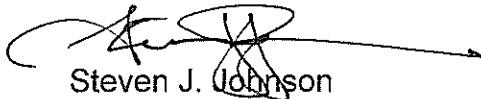
I have a ranch in Montgomery Creek near the project area that was partially burned in the Fountain Fire (including the original homestead there, which burned to the ground), and my life and the lives of my family will be put at risk if you vote yes. I am not against wind power, if it is located where there is little or no fire danger and away from towns and populated areas. This is not a suitable site for this kind of project. Period full stop.

Please do the right thing for once in your life and vote no. The lives of innocent citizens in Shasta County are at stake and may very well depend on your no vote.

For the record, I reserve all rights and remedies, at law or in equity, should this project be approved, and for the potential CEQA litigation that is sure to occur if this project is approved. For CEQA purposes and otherwise, I officially contest all statements and conclusions in the FEIR on all of the grounds stated in this letter, and on all of the grounds stated in any other letters or other communications to public agencies considering this project, at any and all stages of the proceedings, including scoping comments, comments on the DEIR, comments on the FEIR, and any other comments, objections, letters or communications, including comments or objections in emails, and comments and objections made in any presentations to the planning director, the County counsel, and/or the County's consultant(s), all of which I incorporate by reference and reiterate in objecting to the Final EIR, including the recent presentation to those individuals regarding the Fountain Fire and fire risk from this project, as well as any comments or objections made at the time of any public hearing on this matter, all of which I request to be included in the administrative record of this matter, and all of which present additional reasons to vote no on the conditional use permit application. I also ask that all files, notes, emails, messages, and internal and external communications by, between or among County planners, staff, consultants, Commissioners, Supervisors, and to or from project proponents or opponents be preserved for future production in the event of litigation, and that all electronic evidence, including but not limited to emails and text messages, whether on computers, networks, cell phones or any other electronic devices of all concerned be similarly preserved.

Please do the right thing here and vote no.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Steven J. Johnson', with a long horizontal line extending to the right.

Steven J. Johnson

cc: Planning Director Hellman
Senior Planner Lio Salazar

From: [Elizabeth L Lattin](#)
To: [Clerk of the Board Mailbox](#)
Cc: [Maggie Osa](#); cdjmd7160@frontier.com
Subject: Planning commissioners
Date: Wednesday, June 9, 2021 5:23:55 PM

EXTERNAL SENDER: Do not follow links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Chairman Chimenti, Lady and gentlemen of the Board, Planning commissioners, Staff, and Public, Beth Messick Lattin of the CIOFWP..

Response 21-1 Not consider TANC because it was not a project and there is no evidence of any pre or post TANC movement---- and yet Many agencies refer to RETI2- a 10 year old Energy plan for projects and transmission lines anticipated in all areas of California. Plan developed by CPUC and CalSO, plus other agencies. No need to look at TANC huh.

Response 21-3 These wind questions are not environmental-You still did not address wind shear factors or turbulence.

Response21-5Your right there probably was not a response from the Army Corp of engineers--because there was a change of hand during and shortly after your notice to them. The current gentleman in control knows nothing about this project.

Fish and Game is thrown under the turbines.

Pattern Energy is thrown under the turbines.

The Department of the Interior is thrown under the turbines.

All are thrown under the turbines to the professional experience of the planner, who favors the project, who has the only opinion that matters and will do what they want to get this approved. They don't care if they are disrespectful, manipulative, and oppressive. Dismissing all that we who 'aren't able to understand this project' .

We understand---all to well. Once again your planning department comes to exploit us--And once again WE RISE!

Vote no Fountain wind project!

To: Lio Salazar, Senior Planner, Fountain Wind Project
Paul Hellman, Shasta County Planning Director
Shasta County Planning Commissioners
Shasta County Board of Supervisors

June 10th 2021

From: Joe and Maggie Osa, Montgomery Creek, CA

We are providing our response, to be included in the Fountain Wind project final attachment, to be presented to the Planning Commissioners.

Since the Fountain Wind Scoping meeting in January 2019 you have witnessed our opposition to the Project. Although we are not a CEQA expert, we have dug into the issues surrounding this project over the last 2 ½ years and still firmly believe the Fountain Wind Project is the wrong Project for this area for many reasons.

Executive Summary:

Wrong Project for Shasta County! You can do as many additional environmental studies as you like but you will never be able to mitigate to less than “Significant and Unavoidable,” the destruction of the Cultural and Tribal resources, the deaths of the wildlife, aesthetics, and increased wildfire threat which will put additional lives at risk!

The Fountain Wind DEIR identified the following environmental issues to be “Significant and Unavoidable”; Aesthetics, Air Quality, Biological, and Cultural and Tribal Resources. However, we clearly don’t see how Wildfire didn’t make the list since we are classified as Tier 2/3 and “Very High Wildfire Severity Zone” already and adding any increase to the potential for a wildfire is “Significant.” As stated in the FEIR, pg. 2-580, “CEQA does not require the impacts of a project to be mitigated to baseline levels. Instead, CEQA requires potentially significant impacts to be mitigated to a level below a “threshold of significance.” This response is absolutely ridiculous when a “Significant” wildfire classification has already been established within and/or surrounding the entire Project site! For the County to try and indicate that the current “Baseline Conditions” classification is some kind of benign condition and separate from the “Threshold of Significance” classification/definition is irresponsible and is a clear indicator that the County is working to get this Project approved no matter the cost! The County cannot make any changes to the wildfire classification, set at the highest in the state, and then minimize the wildfire threat with such a response. A single spark in the middle of a fuel farm is Significant just as it is for us in this area. FACT: the Project and surrounding communities are the in the Tier 2/3, and “Very High Wildfire Hazard Zone” which stands alone as “Significant and Unavoidable”! No mitigation, or attempt to play on words, in the DEIR/FEIR can change that classification to “Less than Significant.” You cannot change the FACTS of the current classification and ANY SPARK, not just a turbine fire, COULD BE THE RESULT OF LOSS OF LIVES!

The California Environmental Quality Act (CEQA) requires the county to examine a number of environmental factors with just some listed above. If there are substantial impacts, the law requires they be mitigated to levels that are considered insignificant. As has been proven in the DEIR/FEIR numerous substantial impacts cannot be mitigated, so the County, as the lead agency, is not supposed to permit the project. There is no valid evidence that the County could provide that would warrant any “statement of overriding considerations” stating that while the impacts are unavoidable, the project is so important it should be approved anyway. The County cannot mitigate a life loss due to the increased wildfire threat alone, restore any destruction imposed to the Pit River Tribe’s cultural and sacred sites prayer and fasting sites, bring back lost species of raptors, birds, or bats in this area, restore healing and peaceful view sheds, fix PG&E’s antiquated and unsafe transmission grid, nor fix the thermal and overvoltage issues on the 230 kV lines to

Cottonwood. Shasta County can't meet all of the state's SB 100 energy requirements alone, and it already produces more power than needed, the jobs are limited and should be more suited to the current industries found in the area, and we are not here to support the financial gain of the landowner nor the developer at the expense of the County's residents or natural and cultural resources. As the lead agency the County must choose a No Project Alternative!

Additional Feedback to the FEIR

Hundreds of communities around the World are fighting to stop industrial wind developments in their areas for many of the same reasons and some are succeeding. The communities that resist onshore wind developments, such as Fountain Wind, is in a 'David and Goliath situation' over onshore wind with the David's not usually the winner. As the FEIR states the County received over 2,000 pages of emails, letter, including over 2,300 Stop Fountain Wind petition signatures. The community is involved and want this Project denied.

The evidence of bias, to get this Project approved, was clearly found within the DEIR and documented, and now the responses found in the FEIR only further support the claims. Legitimate input and/or questions requesting additional data analysis, and Agency input/feedback were simply dismissed as "Disagreements" and "Opinions" or "The mitigation measures included in the Final FEIR are adequate, legally enforceable, and appropriately mitigate potential impacts to less-than-significant levels" as in the response to the CDFW for a TAC.

We know that DEIR/FEIR documents are overwhelming and difficult to comprehend and so we expect many of the Shasta County residents will not take the time to review them nor respond. We completely understand how the community members believe their voices, comments, questions, and concerns are not heard when you witness how our input has been minimalized and ignored in the FEIR responses. Several commenters provided valid and legitimate concerns, and questions, regarding missing studies and data analysis required to support several proposed mitigation measures that were otherwise based on unsupported assumptions. The responses provided by the County minimized the lack of the requested data, and analysis, as unnecessary, and as "disagreements" and "opinions" and they would only rely on the facts – provided only by the County. The FEIR responses erroneously indicate that only the data and analysis provided in the DEIR/FEIR is required for FEIR certification and any missing data is irrelevant and unnecessary. These types of response from the County is dismissive since community members provided comprehensive, educated, and valid concerns which were not considered.

Pit River Cultural and Scared Sites:

The financial benefits stated by ConnectGen cannot override the destruction of the Pit River Tribe's, and other surrounding Native American Tribes', cultural resources and scared sites.

As was found in the Terra-Gen Humboldt County Wind Project, which was denied in December 2019, Mike Wilson (Supervisor) stated "He wanted to support the project but couldn't do so if it meant adding to the generational trauma suffered by Wiyot tribal members, whose ancestors had been victims of an attempted genocide, by forever altering a "culturally important" landscape." Terra-Gen responded that they could float a potential solution – "money from the projected \$9.8 million of local sales and property tax revenues from the project could be redirected to "certain affected people" at the board's discretion." Terra-Gen stated "the company was then and there pledging \$1 million to go to the endowment to be dispersed as the board see fit." Addressing her comments directly to Terra-Gen's representatives, Cheryl Seidner, the Wiyot Tribal elder, responded on behalf of the tribe, "There's not enough money to do that. You would not sell your mother, we cannot sell our earth. And I don't mean to be disrespectful. You don't know where Indigenous peoples come

from. We come from here. We come from the earth.” Moments later, motions were made and the board voted 3-2, to deny the project.

The Fountain Wind DEIR received some of the same objections from the Pit River Tribal members, which the project cannot mitigate, and have proven to be substantial, as were found in the Terra-Gen wind project. Fountain Wind representatives have also been found canvassing the local communities to garner support through their own “endowments or community benefit agreements” to entice the Tribal and community members to buy (bribe) their support. Ads from Fountain Wind have been seen regarding funding to Shasta Beam for additional towers for internet service within the Intermountain areas, youth programs for the Cedar Creek and Montgomery Creek schools, and whatever else \$1 – 2 million dollars will buy in order to get support for their industrial wind project. The sad reality is that yes the Intermountain internet service needs improvement and schools need additional funding, along with numerous other projects, however the unincorporated communities should not have to turn-over our way of life and be subjected to 72 - 679 foot industrial turbines to get some of the same benefits/services found in other areas of Shasta County. The funding for better internet or schools should come from the County or State itself, particularly since the COVID-19 pandemic brought forth the glaring disparities of basic services for school children and participation with the Planning Commissioner and/or the BOS via virtual means. Many Intermountain community members cannot afford the internet service and/or it simply is not fast enough without the needed upgrades from the Providers.

In the FEIR, Page 2-160, states very clearly the voice of opposition, and the importance of saving their way of life, from just one of the Pit River Tribal members, Radley Davis, “The topography of the Project Site is central to my peoples identity, our oral traditions, our tribal history and our spiritual connections. Changing the landscape in this dramatic fashion is another state-sanctioned action that leads to dispassion of homelands and is yet another attempt to erase our people from history.” Another member, Brandy McDaniels, Madesi Band Cultural Representative for the Pit River Nation, states “As you can see the homelands of the Madesi people play a great role in our healing from the past forced removal and government backed genocidal acts against us that cause great loses, historical trauma, dispassion from our homelands, and racially motivated acts of violence and terror in order to take possession of our Ancestral lands were we have resided since time immemorial. We are so connected to the land that our connections with the land is tied to our identity as a people and one cannot be distinguished from the other.” As witnessed by the Wiyot Tribe, and now the Pit River Tribe, their objections go much deeper than we can understand. The developers for these types of Projects cannot fully comprehend just how devastating, destructive, and life changing these types of projects are on the cultural history of our Native American culture and how it is just a continued genocide and eradication of them as a people. The impact on them if this project is approved cannot be captured in words within the DEIR/FEIR. We stand with the Pit River Tribe in their resolution supporting a No Project Alternative!

Wildfire

The DEIR/FEIR states the wildfire risk goes from “Potentially Significant” to “Less than Significant” based on the proposed mitigation measures alone is impossible. Since the Project site, including the communities surround the Project, are already in a “Significant” wildfire threat as noted by the classification of a Tier 2/3 and “Very High Wildfire Hazard Zone” and the DEIR/FEIR cannot minimize the existing classification just to get the Project approved. The DEIR/FEIR tried to separate the current “Baseline Classification” from the appropriate “Significance” level in order to minimize the Project’s potential to increase the wildfire threat which clearly cannot be mitigated! The Project is proposed in the highest wildfire threat zones within the

State so it is unreasonable and irresponsible for the County to state that the introduction of the largest industrial wind project in the Western US into this artificially forested area can somehow be mitigated to “Less than Significant” The communities around the Project site are the first to loss power during a PSPS event and the last to regain power once they complete the aerial flyovers to inspect the power lines.

California has recently committed over \$2 Billion dollars (double the amount of 2020) in order to provide additional lines of defense against the increasing wildfires across the state. The PG&E bankruptcy also revealed their antiquated transmission grid, proven to be unsafe and in dire need of billions in upgrades. The safety risks due to the PG&E grid are clearly documented and unacceptable in the highest wildfire hazard zones within the state. In addition, the failures of the execution of PG&E’s wildfire mitigation Plan for 2020/2021 and the additional oversight by the CPUC shows the necessary work and upgrades are still a long way from being completed.

The FEIR states “Comments about the current state of the electric grid are beyond the scope of the CEQA process for this Project.” And “It does not task the EIR with analyzing the sufficiency, reliability, or safety of the grid as a whole.” If these issues are not addressed in the EIR who is responsible to obtain the data, provide the additional analysis, including the needed reports for the public review and the decision-makers? The County, including all the decision-makers for this Project, know of the failed PG&E transmission grid, and unless they obtain and review the needed data regarding the safety of the physical electrical environment for the Fountain Wind Project - the largest industrial wind electrical system in the North State since Shasta Dam, then how will they/you make the determination needed pursuant to Zoning Plan Section 17.92.020.F for the use permit? Who in the County will has the expertise to override PG&E’s statements regarding the necessary upgrades safety measures and the CPUC’s enhanced oversight, which is expected to take the next 12-14 years?

“That the establishment, maintenance or operations of the use, building or facilities applied for will not under the circumstances of the particular use, be detrimental to the health, safety, peace, morals, comforts and general welfare of persons residing or working in the neighborhood of the proposed use or be detrimental or injurious to property and improvements in the neighborhood or in the general welfare of the county. “

In August 2019, Kari Haley-Hathaway, gave a presentation regarding insurance in high fire hazard areas, to the Shasta County Board of Supervisors. The information from the meeting minutes is provided below.

Kari Haley-Hathaway, owner of Haley Insurance Marketing, Inc., gave a presentation regarding insurance in high fire hazard areas. Ms. Haley-Hathaway pointed out a rise in insurance premiums and discussed an escalation in non-renewal policies by insurance carriers due to wildfire threats across the state of California.

Ms. Haley-Hathaway explained the risk factors that insurance companies use to decide insurance premiums, speaking on the difference between Wildfire Scoring and ISO Protection Class Ratings as they are applied to risk assessment. She also stated that non-renewed policies are at an all-time high in California, which is causing independent insurance agents increased difficulty in identifying fire protection policies for homeowners.

In response to questions from Supervisor Rickert, Ms. Haley-Hathaway stated that local realtors are experiencing greater challenges when attempting to sell properties due to current insurance rates associated with high fire risk areas. She also stated that she read the governor was working on

addressing the issue, but the Commissioner for the California Department of Insurance did not feel the state was in dire straits yet.

In response to questions from Supervisor Baugh, Ms. Haley-Hathaway explained that there are several areas within the City of Redding that are still considered high wildfire hazard areas several months after the Carr Fire. She also added that individual properties and neighborhoods are not taken into consideration for risk assessment, which is detrimental to homeowners who are taking action to mitigate fire hazards while living in a high fire zone.

In response to questions from Supervisor Moty, Ms. Haley-Hathaway assessed that the health of the insurance industry in California was less than satisfactory and the worst she has observed since 1992. She further stated homeowners should be concerned over the annual renewal of their insurance policies even with diligent efforts taken towards fire mitigation.

Considering this was discussed in 2019 does the County think these issues have improved at all especially that we are in another draught year? Many home owners, including ourselves, have had to move to the CAL FAIR plan to get insurance for our properties and only expect the situation to get worse. Now CA Insurance Commission is talking about not insuring homeowners who want to rebuild after a fire has destroyed our homes in wildfire prone areas. The increase in the potential ignition sources stated in the Fountain Wind FEIR, even just one, let alone thousands is simply unacceptable and cannot be mitigated as even the one spark in this area is Significant.

As the decision-makers you must deny the special use permit and vote No Project! Any financial gain for the County is not worth the very lives of any of its residents.

SCC and General Plan

In March of 2019, we met with Lio Salazar, the senior planner for the Fountain Wind Project. Lio at that time indicated to us that **Shasta County does not have any clear guidance regarding “large scale industrial wind facilities” and that the Shasta County Code (SCC) needs to be updated** to address those issues however, it is expensive to get the SCC zoning code updated (approximately \$10,000 with no budget for it). When you review the SCC and the Fountain Wind DEIR/FEIR you will see several comments regarding the lack of SCC updates in relation to “large scale industrial wind facilities” in the SCC. How can so many reviewers be wrong and/or make the determination the code and general plan need updates? The SCC does identify “small wind energy system” in detail so, if the intent was for “large scale industrial wind facilities” to be addressed, why hasn’t the SCC been updated to reflect those same types of parameters as for “small wind energy systems?” What is the tallest they can be and on how many acres? How far from the property lines of surrounding land owners? How far from the incorporated areas of the County? Should they be within the forested Very High Wildfire Hazard Severity Zone, and/or Tier 2/3 zones, or not?

In addition, we challenge the County Fountain Wind FEIR with quoted updates to the SCC that were inappropriately based solely on Paul Hellman’s memo to the Board of Supervisors on August 15th 2019. The lack of proper SCC zoning was brought up during one of the Public Comment periods at the Board of Supervisor meetings. When the memorandum was provided by Paul Hellman, we indicated that we whole heartedly disagreed with the interpretation and now the Planning Department is trying to indicate the memorandum, quoting it in the FEIR page 3-3, as an update to the SCC zoning. The memorandum itself incorrectly states current SCC and further implies that since the SCC lacks clear “terms” regarding “large scale wind energy facilities” that the SCC is henceforth updated via the memorandum itself. The memo states “In the absence of an established term for such systems, they are referred to as “large scale energy facilities” in

this memorandum”; that would be fine for the memorandum to use that term but the FEIR quotes it as though it is now part of the SCC which is inaccurate and misleading. Is that really the process for proper review and updates to the SCC? If the SCC is missing established terms needed for a clear and concise understanding of their own SCC then it is obvious that it needs revision. The SCC needs updates to specify how, what, and where, these industrial project should be developed within Shasta County. The statement within the SCC that says that Wind Energy Systems that fall outside of the specifications for a “small wind energy system” can be approved with a Special Use Permit was never intended for large industrial wind developments like Fountain Wind and Hatchet Ridge, it was intended for outliers of “small wind energy systems.” Can Shasta County be so concerned about a “small wind energy system” (not over 80 feet for a 5 acre plot of land) clearly specified within the SCC zoning and then not outline or provide parameters for wind turbines hundreds of feet tall that may cover thousands of acres? Where in this process are established well vetted safeguards put in place to protect the surrounding landowners and residents of these proposed industrial complexes? The memorandum states that Hatchet Ridge and Fountain Wind projects are the only large scale wind energy facilities which have been proposed. That statement is true to date however, who is to say that other “Big Wind” industrial developers will not target Shasta County, such as outlined in the Fountain Wind DEIR biological appendix which had a map extending additional project sites up to the McCloud area, due to the County’s outdated and ambiguous SCC?

Biological

On page 2-555 of the FEIR the American Bird Conservancy Wind Assessment Map (2020) was provided, showing the entire Project area encompassed a Globally Important Bird Area. The Wind Assessment Map promotes Bird Smart Wind Energy development by highlighting areas of importance to birds that should be avoided or approached with caution by wind energy developers.

The FEIR response, page 2-586, was shocking and dismissive at best. The FEIR states “This designation was given by the American Bird Conservancy to national forest lands throughout the west, some of which occur in the Project vicinity. The Project is proposed on private lands and therefore is not mapped or characterized by the American Bird Conservancy as a globally important bird area.” WHAT? Since the American Bird Conservancy Wind Assessment map does not distinguish from private, public, or national forest lands.....oh by the way neither do the birds or bats. How can this response even be considered as a valid response? Birds as we all know nest, and fly, where they want without regard to private, public, or national forest lands. As outlined by the American Bird Conservancy the entire area, via the Assessment Map, private, public, national forest is a Globally Important Area which will further impact and decimate avian species.

Outside of the DEIR/FEIR/CEQA

We recognize that several key areas for the decision-makers are outside of the CEQA process so where and when can we obtain these additional reports and data that will be or should be presented to the decision-makers?

- 1) Reliability and safety of the transmission grid at, near, and surrounding the Fountain Wind Project? If the FEIR states “it does not task the EIR with analyzing the sufficiency, reliability, or safety of the grid as a whole” then where is it analyzed at and/or near the Project site? The transmission grid where the Project makes the intertie, or the transmission from the Project to Cottonwood, or anywhere in between? How can the County presume that any part of the transmission grid is safe and/or what areas are currently being upgraded and worked?

- 2) How can the County properly access the PG&E transmission grid when it was not evaluated in the DEIR/FEIR at all – the Physical Electrical Environment for the Project, and as listed in the Project objectives #2, “Interconnect to the Northern California Transmission Grid?” Just because the County did not receive a response directly from PG&E/CAISO/CPUC then it cannot “assume” that the transmission grid is safe, nor sufficient, for the injection of the intermittent renewable energy brought by the Fountain Wind Project. These facts (not opinion) are from PG&E’s own statements that they have over 7,100 miles of transmission grid upgrades over the next 12-14 years estimated at over \$40 billion dollars. So is any of those 7,100 miles of transmission upgrades within/at/near the Fountain Wind Project and how will the County make that determination and provide the data analysis?
- 3) Thermal overload and voltage issues between the Round Mountain Sub-station and Cottonwood sub-station, affecting all of the 230 kV lines, as outlined in the information is documented within the 2018/2019 and 2020/2021 CAISO Transmission Plan. The Cottonwood line is also now being addressed in the latest transmission plan which is also the intertie for the Fountain Wind Project. How will the County know if the injection of the Fountain Wind Project makes the thermal overload issues worse or can introduce additional risks not yet identified?
- 4) The status of the PG&E Wildfire Mitigation Plan and the impacts of increased safety issues at or near the Project Site. Documents provided at the Planning Commission and Board of Supervisors meetings Public Comment Periods from Dr. Nathaniel Skinner, CPUC, Wildfire Safety Division, and Public Advocates Office. The documents state that PG&E “Out of 967 transmission towers in the High Fire-Threat District (HFTD) that were scheduled for climbing inspections in 2020 ¹⁸ PG&E failed to conduct any climbing inspections before PG&E’s internal goal of the end of August 2020.¹⁹ This is just one finding from the CPUC, along with 35 others found in the report, that have yet to be addressed. The comments made regarding PG&E’s unsafe transmission grid are not “opinions” but facts from the CPUC and PG&E themselves.
- 5) The efforts of the Planning Department to update SCC by the Memorandum dated August 15, 2019 (Consistency of Large Scale Wind Energy Facilities with the General Plan and Zoning Plan) which is now also quoted inappropriately within the Fountain Wind DEIR revisions, page 3-3. Is this the standard practice of updates to the SCC, via memorandum from the Planning Department Director, when the SCC sufficiency/clarity/consistency is questioned? It is my understanding the SCC revisions are brought before the Board of Supervisors so when was this issue voted on for the updates to the SCC quoted within the FEIR? How can the revisions to the Fountain Wind DEIR be made as if they are true, when the revisions are based on Paul’s memorandum which incorrectly quotes the SCC zoning, and then the FEIR quotes the memo as though it is existing code? The SCC zoning should not be so ambiguous and open ended that you can “drive a bus through” as they say, but it should be clear and intentionally defined with no ad hoc interpretation from the Planning Department. The SCC zoning code needs to be stated clearly, and be factual for all the readers, with the intended parameters clearly outlined, for the community members and developers alike. Anything less than the needed updates to the SCC leaves the County, and residents, vulnerable to only relying on the developers to set the standards that the County should have taken the action to define and impose. Without thorough evaluation and consideration from the County, to protect the residents surrounding these development areas, the County is left to relying on “Big Wind” to control matters and limiting how Shasta County conducts business! If the County wants to allow “large scale wind energy facilities” then why hasn’t the SCC and General Plan been updated to make that objective clear and to be as thorough as that outlined for “small wind energy systems?”

Why hasn't the necessary parameters (turbine height limits, located within/or outside of Very High Wildfire Hazard and Tier 2/3 zones, acreage limitations, restrictions regarding how close to neighboring landowners and dwellings, limits to number of towers, etc.) already been specified? Making the statement that these use permit requests are evaluated on a case-by-case basis is ineffective, inefficient, and prone to errors making it difficult for residents and developers alike.

- 6) How can Shasta County negate the implementation of SB 901, which restricts developments on ridgetops, when they are well aware of the intent and execution of the Bill effective 1 July 2021? SB 901 was put in place specifically for the improved safety of Californians and better management of our undeveloped forest and wildlands (entire setting for the Fountain Wind Project). The FEIR indicates they do not know the potential effects of the bill and they cannot speculate. SB 901 is clear— it is to provide protections and wildfire safety measures particularly along ridgetops by restricting developments, industrial or otherwise, in those areas. The County can easily obtain SB 901 and follow the intent of the bill, by denying the Fountain Wind special use permit, and protecting the safety and wellbeing of the surrounding communities and residents.

- a. In addition, California lawmakers also recognize that over 8,000 homes are at risk in high wildfire areas, with many near the Project site. They are working to advance a 10-bill package to the assembly by the first week of June that will include several wildfire safety measures.

- 7) When is the FAA response to DEIR Comment Letter P19 (California Pilots Association) expected and what additional risk and/or safety of life issues are not being adequately addressed regarding local life-flight efforts? What efforts will the County and decision-makers take to ensure that the necessary data and analysis is completed prior to approval of the special use permit, since the FEIR is being put forward for certification without the FAA, 404 permit, or other requested data?

- 8) Letter from Associate Aerial Firefighters – Mr. James Barnes (a respected expert from the Forest Service, and aerial firefighting expert). How can the County consider approving this Project considering Mr. Barnes statement that the Project and surrounding areas will essentially be considered a “no fly zone” due to the increase in number and/or height of the turbines within the Intermountain area?

The Planning Commissioners and Board of Supervisors are aware that Mr. Barnes has stated that approval of the Fountain Wind Project will severely hamper, if not completely eliminate, the capability for aerial fire support for the Project area and surrounding communities. Any lack of aerial wildfire support would cut off live saving efforts to the communities of Big Bend, Wengler, Montgomery Creek, Round Mountain, Oak Run, Moose Camp, and to boots-on-the ground firefighters and allow the fire to easily spread to neighboring communities of eastern Redding or Burney/Fall River. When considering the approval or denial of these types of projects the fact that “A Life Can't Be Mitigated” should be paramount!

Page 2-131 of the FEIR states “aerial hazards do pose a safety concern for aerial firefighters; however, they are something we must work around on a daily basis.....Whether its power lines, antenna towers, windmills, cell towers or cables/wires spanning a drainage, *the key to working in this environment is knowledge of their existence.*” I appreciate the response from CAL FIRE that they are willing to try and “work around the proposed turbines” however the response doesn't indicate ‘how effective’ they believe those efforts will be since there is nothing in the same area that is anywhere near the height of the turbines. And to work around is exactly the problem as they will not be able to fight the fire effectively until it has moved beyond the Turbine field which

will be hundreds if not thousands of acres by then and almost certainly beyond hope of preventing a major Wildfire such as the Fountain Fire of the '90s.

Unfortunately, the landscape across California has become significantly more fire prone and decisions as to whether to approve projects like the Fountain Wind Project, must be made with serious wildfire implications in mind, it's not "if" but "when" the Project will start a wildfire. These same wildfire implications were not prevalent during the review and/or approval of the Hatchet Ridge Wind Project and this Project review cannot be considered under the same set of circumstances. The Fountain Wind Project will only introduce hundreds-of-thousands of potential wildfire ignition sources, which are not present in the area today, as also outlined in the DEIR due to introduced personnel, equipment, construction, overhead and underground transmission lines, etc. The wildfire threat will encompass all of the project operations including: personnel/materials transportation, construction, operation, maintenance and decommissioning.

The on-going wildfire threats will continue and only increase for the North state as shown in CPUC studies out to 2049, particularly along the transmission grid. The increased threat only intensifies due to ongoing maintenance and aging issues for projects like Fountain Wind and the electric grid itself. California must take action, and you as the local government representative, to change the way they think about wildfire events and prevention, including whether to introduce developments in wildfire prone areas and implementation of early preventive measures. With the recent Fire Safe Council re-established this is the time to take action to support Shasta County in making the area more fire safe and not the time to introduce any additional wildfire risks. As you will find across the state, several housing developments, in less forested areas than ours, are at risk of not being developed at all because of the increased wildfire risks. Two housing developments in Southern California and another development in Kern County, the Tejon Ranch Development, are currently on hold due to suits brought against them by the California Attorney General.

The reality is no matter how many updated studies are completed in the FEIR the wildfire risk cannot and will not be reduced by this Project! The Project site is located in the "Highest Wildfire Hazard Severity Zone" in the state and neither this Project nor the Developer can change that classification. Also, Shasta County cannot presume that the PG&E transmission grid is safe when PG&E themselves state the opposite is true.

We sincerely believe that the SCC code and General Plan need updates and volunteer our time to work with the County to draft revisions and help present those updates to the decision-makers. The Fountain Wind Project special use permit should be denied and we would request that an immediate moratorium be put into place by the Board of Supervisors, stopping any additional special use permit requests for similar types of developments, until Shasta County can make the needed updates to the SCC zoning and General Plan.

The touted financial benefits of this Project cannot "Mitigate a Life, " reduce the wildfire threat, undo cultural damage to the Pit Rive Tribe or reduce any of the major impacts to the environment and quality of life within the area, and when a wildfire breaks out any supposed financial benefit will just go up in smoke. We pray you make the right decision and consider, for the local community members and nearby residents of Shasta County, who are most affected by the Project and whose lives would be threatened by it, and vote No Project when the Fountain Wind Project comes before you for a vote.

Best Regards,
Joe and Maggie Osa

From: Jim@JimWiegand.com
To: "FountainWind411"
Cc: [Leonard Moty](#); [Joe Chimenti](#); [Mary Rickert](#); pjpjones@co.shasta.ca.us; [Les Baugh](#); [Lio Salazar](#)
Subject: RE: Fountain Wind Project Update: New Fountain Wind EIR information
Date: Friday, June 11, 2021 10:51:23 AM
Attachments: [Shasta County Supervisors - Additional Fountain Wind Information.pdf](#)

EXTERNAL SENDER: Do not follow links or open attachments unless you recognize the sender and know the content is safe.

To our Shasta County Supervisors,

A big decision lies ahead, that if approved, will have permanent negative impacts to Shasta County wildlife, tourism, migratory species, ecosystem diversity, property values and in general, the quality of life for all Shasta County residents. Also keep in mind that our local media has presented biased one-sided reporting on this massive industrial project.

So please read over this factual information before the June 22 meeting. If Supervisors need additional source information or additional information regarding wind energy impacts please contact me. Feel free to ask me any questions regarding the nonscientific research and opinions that went into the Fountain Wind EIR.

Lastly, if the Planning Commission does decide to provide me with the exact names of those that responded to my DEIR input, I will be submitting additional comments.

Jim Wiegand

From: FountainWind411 <FountainWind411@esassoc.com>
Sent: Monday, June 7, 2021 2:12 PM
Subject: Fountain Wind Project Update: Correction of Email Address

Thank you for your continued interest in the Fountain Wind Project. An error in the e-mail address link in the signature block of the last FountainWind441 message regarding the notice of Planning Commission hearing has come to my attention. If one chose to type or cut and paste the address into an e-mail message, it resulted in a returned message. The spelling of the link has been corrected. Please feel free to type or cut and paste the address or click on the link to address your e-mail. Sorry for the inconvenience.

You are receiving this email in response to your request to be advised of information relating to Shasta County's California Environmental Quality Act (CEQA) process for evaluating environmental impacts of the Fountain Wind Project. We will not sell your information to anyone for any purpose. However, information you provide may be subject to disclosure in response to a request for public information about the project.

If you would like to stop receiving emails like this one, please reply with the word "unsubscribe" as

the body of the message.

Lio Salazar, AICP
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Fountain wind impacts hidden from FEIR

Science seeks the truth. It's not an exercise in deception, collusion, with shell experts and government agencies being choked with nondisclosure agreements. This is an industry that has voluntary regulations, so they report very little. Green energy research data is created from contrived methodologies that have little to do with science and full disclosure. As I have found and can prove, data produced by this industry cannot be trusted.

Fraudulent green research is hiding a worldwide eagle slaughter



Many important questions I raised about this proposed project and the proof I provided regarding the all the deceptive studies, were totally avoided in the FEIR. These factual, science-based comments posted in the FEIR, were also completely dismissed by an anonymous source.

After weeks of trying, Lio Salazar in the Planning Department finally said in an email, he would not provide me with the names of the people associated with the absurd responses to my Fountain Wind EIR comments. If readers find editing mistakes, keep in mind this information was both delayed waiting for names from the Planning Department and written up in a hurry so all this could be presented in a timely manner to Supervisors before the June 22 meeting.

The Bald Eagle population surveys from Fountain DEIR are a farce

False bald eagle survey information from DEIR is shown below. The area around the Fountain Ridge project does not have near as many bald eagles and occupied bald eagle nests as implied in the DEIR. **Some nests said to be occupied in the DEIR are abandoned and while others listed appear to be alternate eagle nests that exist within the few existing eagle territories.** The sorry looking nest image shown for Lake Margaret has probably been abandoned for years. DEIR images prove this.

The false appearances of Shasta County's bald eagles thriving in and around the Hatchet Ridge wind turbines, could leave Supervisors thinking that incidental take permits are not needed for Fountain wind. But incidental permits will be needed because this project will be killing dozens and dozens of eagles over the life of the project. Also keep in mind that even though the Lake Margaret eagle territory was abandoned (See nest 299 images) prior to 2017, new eagles and ospreys will continue to find this lake because of the food source and they will also be killed by turbines.

Some Important notes on the DEIR eagle surveys

DEIR images provided for the 2017 raptor survey show proof of only 6 bald eagle nests being occupied, not 11.

Appendix A: Photographs of Bald Eagle Nests Documented During Nest Surveys Conducted in 2017 at the Fountain Wind Project, Shasta County, California

Nest 157, located approximately 6.2 miles northeast of the Fountain Wind Project.
Nest 307, located approximately 5.5 miles northeast of the Fountain Wind Project.
Nest 59, located approximately 6.5 miles northeast of the Fountain Wind Project.
Nest 58, located approximately 4.2 miles north of the Fountain Wind Project
Nest 178, located approximately 6.0 miles east of the Fountain Wind Project.
Nest 310, located approximately 5.5 miles northeast of the Fountain Wind Project.

Table 1. Summary of the 2018 bald eagle nest status surveys conducted within a 10-mile buffer of the Fountain Wind Project, Shasta County, California. Additional details on 2017 nest status surveys are available in the 2017 nest survey report (WEST 2018).

Images for 2018 show only proof of 4 nests being occupied. Nests 310,178, W4 and W2. Nest 308 and others were not occupied. Nest 308 was also shown for 2017 and 2018.



EIR Provided no knowledge of any successful and occupied raptor nests anywhere near Hatchet Ridge.
The reason there wasn't any. They've been wiped out by the wind turbines. If there are any to be



Nest 308, located approximately 5.0 mi (8.0 km) west of the Fountain Wind Project.
.....“an adult was observed in incubating/brooding posture at Nest 308.”

The unanswered million-dollar DEIR question for Supervisors

What is the nearest occupied and successful raptor and or bald eagle nesting territory to any of the Hatchet Ridge turbines?

I ask because this industry goes to great lengths to hide nesting failures and habitat abandonment. I can assure Shasta County Supervisors, that the closest truly occupied raptor nest is not Bald eagle nest 299. I say this because it's easy to see from the DEIR image, this 2017 nest, was not being used. This nest is in terrible shape and is falling apart. Other bald eagle nests shown in the DEIR images are also abandoned nests and not really occupied. In addition, some nests claimed to be “occupied” were actually alternate nests, with no proof shown of any eagles being present.

Bald eagles routinely build alternate nests within their territories, but the DEIR failed to mention this behavior. Researchers however did express this multiple nest building

behavior with goshawks..... “Within their territories, goshawks will alternate the use of as many as eight nests sites that can be located up to 1.1 miles (1.8 km) apart.”

Eagle nest survey is not even close to being credible or scientific

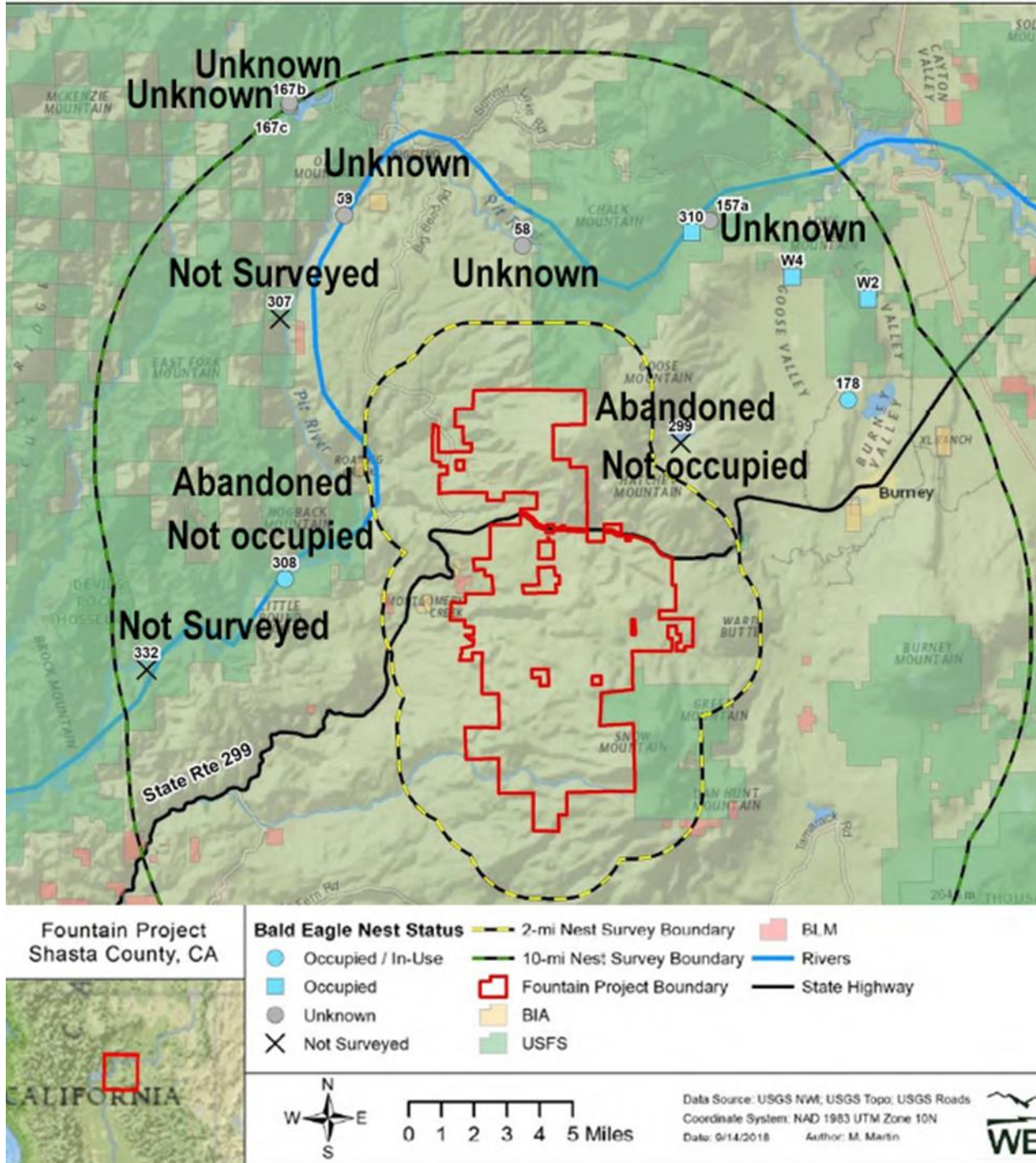


Figure 1. Summary of the 2018 eagle nest status survey results for the Fountain Wind Shasta County, California. (BIA = Bureau of Indian Affairs, BLM = Bureau Management, USFS = U.S. Forest Service)



Nest 299, located approximately 2.9 miles east of the Fountain Wind Project.

“During eagle nest surveys conducted within a 10-mi radius of the Project area, 11 occupied bald eagle nests were documented, with the closest nests to the Project area located at Lake Margaret, approximately 4.7 km (2.9 mi) east of the Project, and along the Pit River approximately 6.8 km (4.2 mi) north of the Project.”

This abandoned nest is located about 1 1/2 miles from the Hatchet Ridge turbines.

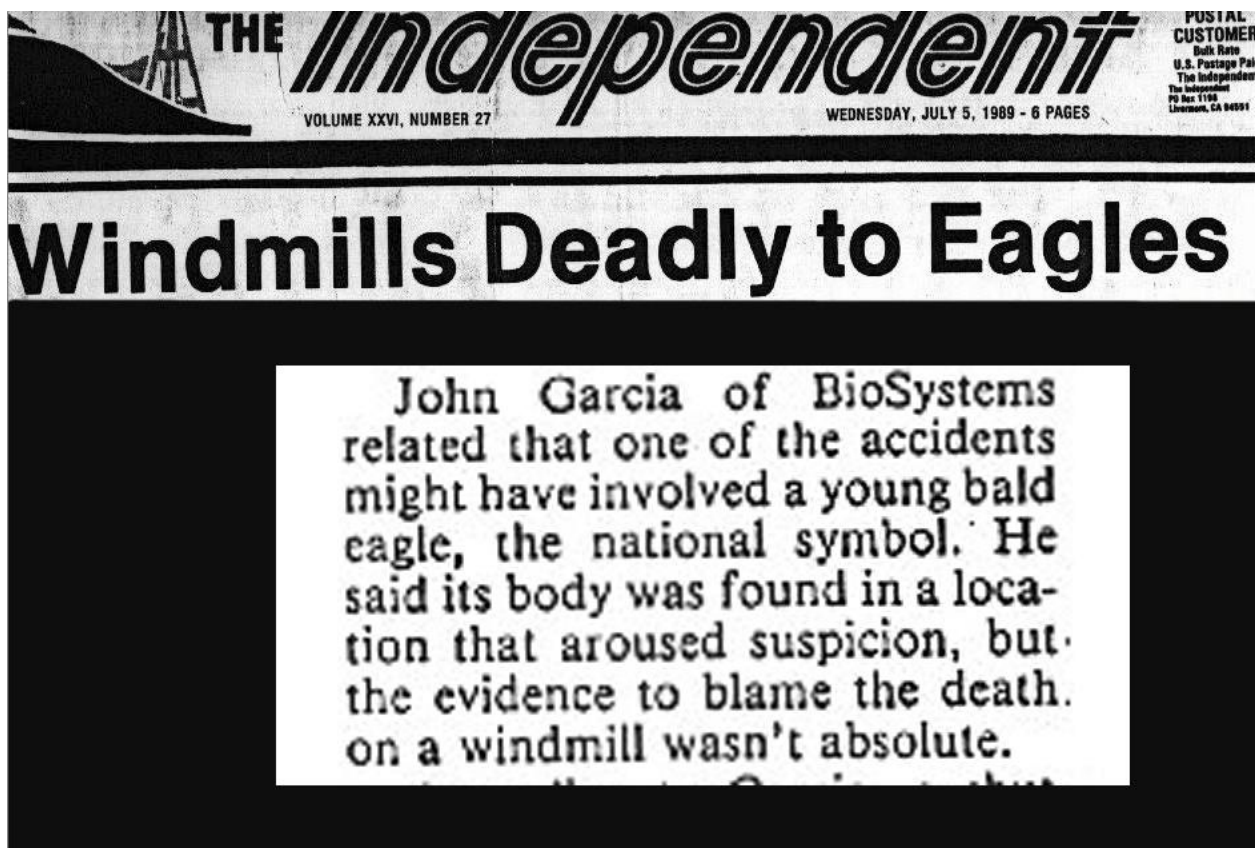


This deceptive statement from the DEIR

“During eagle nest surveys conducted within a 10-mi radius of the Project area, 11 occupied bald eagle nests were documented, with the closest nests to the Project area located at Lake Margaret, approximately 4.7 km (2.9 mi) east of the Project, and along the Pit River approximately 6.8 km (4.2 mi) north of the Project (Thompson 2018). Despite a number of occupied bald eagle nests in the vicinity of the Project, **only three of the 16 bald eagle observations documented during the Year 1 surveys were recorded in the spring and summer nesting season**, suggesting even lower use of the Project area by breeding eagles than migrating or wintering bald eagles. **Based on the generally low direct impacts to bald eagles documented in the Pacific Northwest, including at Hatchet Ridge, as well as the relatively low use of the Project by bald eagles documented during the Year 1 study, risk of collision at the Project is anticipated to be low.**”

Pay close attention to this DEIR deception..... the word “documented” actually means the number of bald eagles this industry, with voluntary regulations, chooses to report and the low use at the project site by bald eagles was “documented” with studies that used contrived methodologies.

This industry has been killing Bald Eagles for decades. Even back when they were still classified as an endangered species.



More avoidance, doubletalk and utter DEIR nonsense

From the DEIR, Appendix C..... "Details on how the Lake Margaret pair utilizes the landscape may be available in the future; **however data were not available for inclusion in this report.** An adult was observed on the Lake Margaret nest (Nest 5; Figure 2, Table 1) in an incubating position during the March survey, **but no evidence of continued use was observed** during the follow-up survey in May, indicating the nesting attempt had failed. All other occupied bald eagle nests were more than 4.2 mi (6.8 km) from the Project Area boundary (Figure 2)."

What details? What data? What pair of eagles and why would an adult eagle ever be brooding eggs in a nest falling apart?

The answer..... The old nest was not an occupied by bald eagles at Lake Margaret and from the looks of the 2017 DEIR image, it hadn't been occupied for years.

So how many truly occupied eagles nests now exist? Is there only 3 or four occupied bald eagle nests within 10 miles of Hatchet Ridges turbines? Or are there even fewer? This is very important because if true, the Hatchet Ridge turbines are most likely the reason.

Shasta County must conduct new eagle surveys to find out. Not only for the public **but to determine accurately the number of bald eagles needed for the developer's incidental take permits.** In my expert opinion, this project will kill at least 10 bald eagles in the first year. But if Shasta County allows wind developers to have their way, they will never be reported.

My previous DEIR comments clearly explain to Supervisors how to stop wind energy research and disclosure rigging.

The wind industry is and has been killing thousands of eagles in America and they don't have to tell you, so they don't. Reported eagle fatalities are generally the ones they choose to report or the ones reported because word leaks out. This "green" industry has been using the "no body, no required reporting, no crime, and no accountability" defense, to hide behind for years.

Do not accept any of the fraudulent DEIR Research and DO NOT do this to Shasta County's Bald Eagles

The Fountain Wind turbines will kill far more bald eagles than the Hatchet Ridge turbines because of:

- 1) a closer proximity to the occupied eagle territories along the Pit River drainage,**
- 2) fledging dispersal,**
- 3) the creeks holding fish that will always attract eagles into the Fountain Project,**
- 4) turbine blade tip speeds for this project 50% faster than the Hatchet turbines, with over 300 mph tip speeds,**

5) this project would have highest concentration of deadly rotor sweep in America, 5 times that of Hatchet ridge, and all being swept at speeds 50% faster,

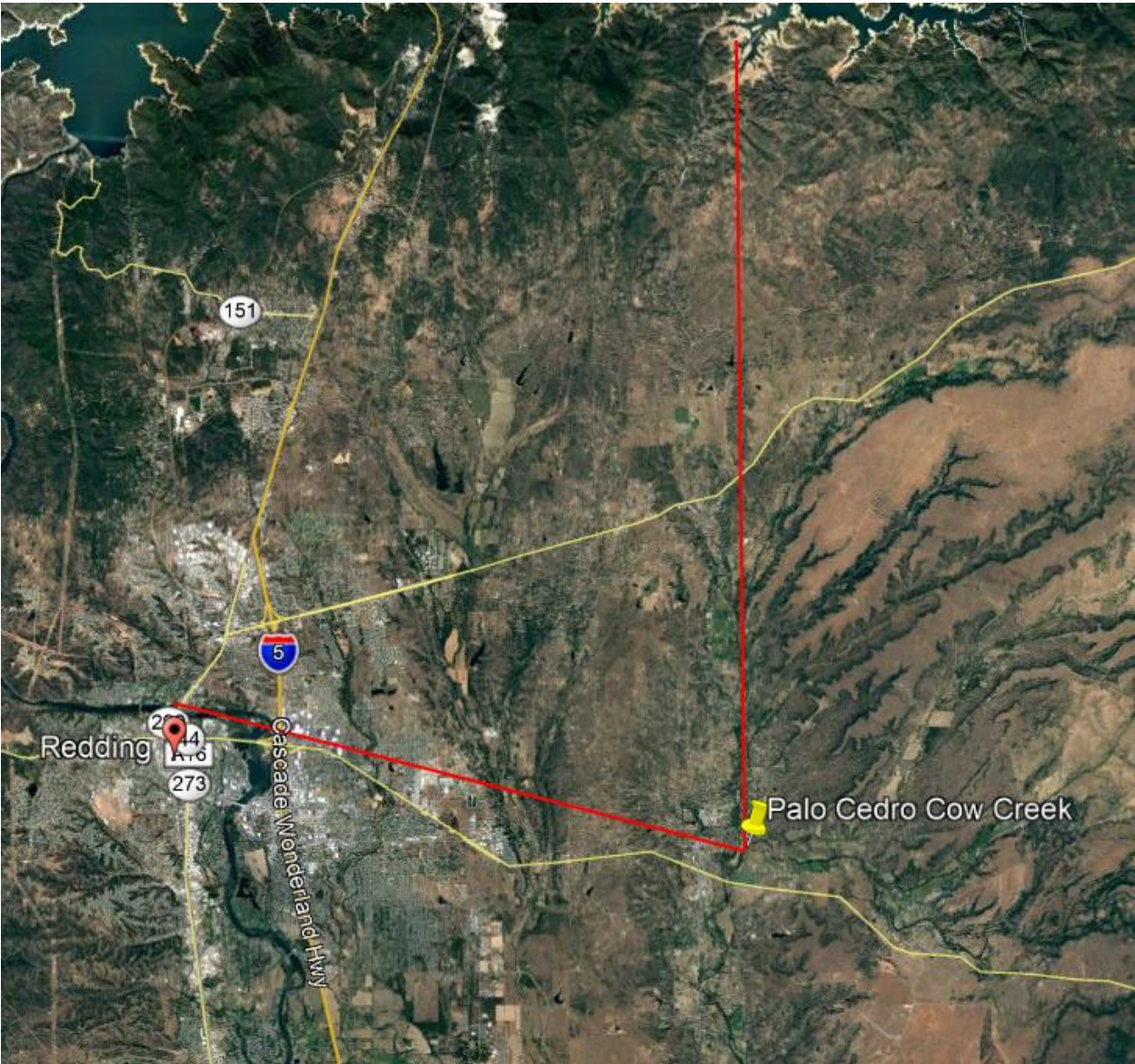
6) flying 5-10 miles for food is common for a hungry bald eagle or an eagle trying to feed its offspring,

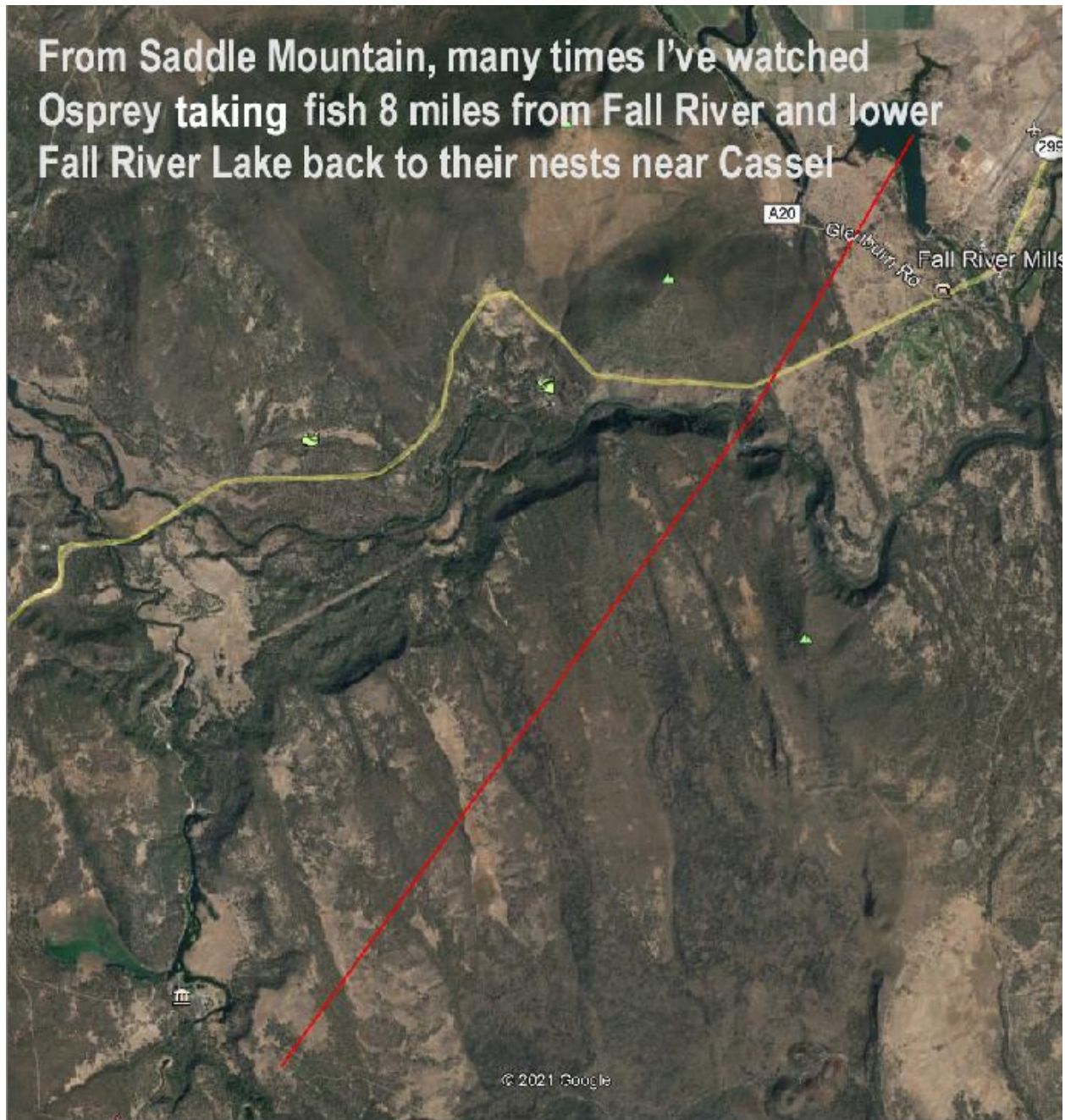
7) abandoned eagle habitat along the Pit River arm of the lake and Pit River will eventually be repopulated with new eagle pairs that will also be killed by turbines.

Foraging Bald Eagles and Osprey travel many miles.

Cow Creek in Palo Cedro is 9 miles from the Redding/highway 44 nest and 12 miles from some of Lake Shasta bald eagle nests. Yet, Cow Creek is hunted by adult bald eagles in the spring and summer. Osprey I watched over the years in the Fall River area, would fly 8 miles or more with food going back to their nests near Cassel, CA. **(SEE images)**





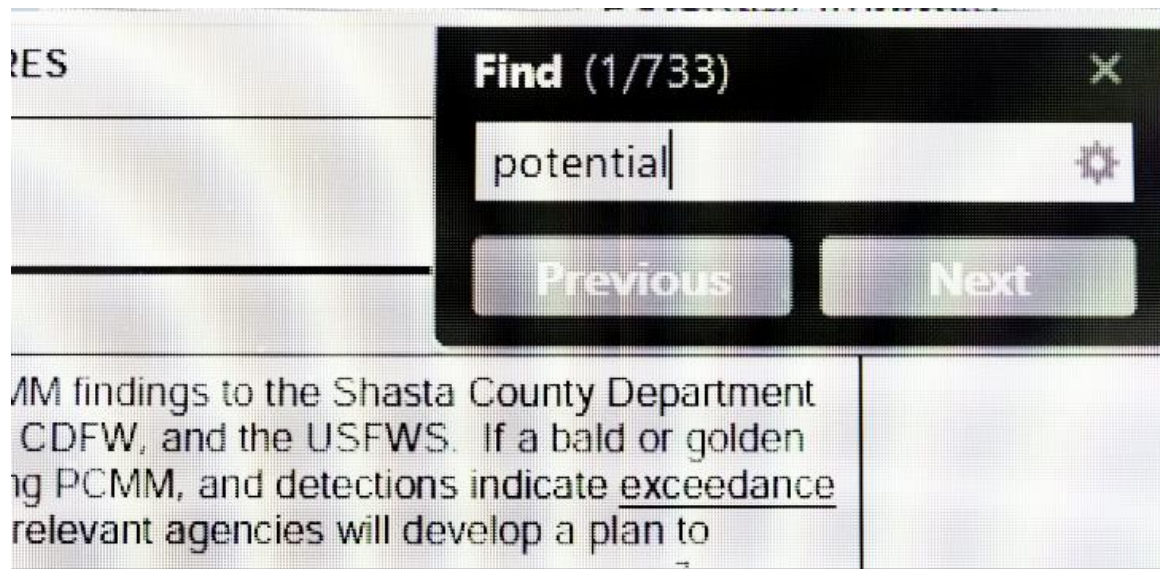


Shasta County Supervisors, do not be misled by a fraudulent industry. This project if built, will be killing the bald eagles from the Pit River area of Shasta Lake.

Besides being filled with vague information and exclusionary comments, the Fountain Wind EIR and Appendix C - Biological Resources, are also riddled with **weasel words**. Thousands of them, expressing uncertainty were deliberately used in the DEIR that should never be accepted. This is not science and is a

direct reflection on the hidden impacts, biased assessments and contrived research that went onto the Fountain WIND FEIR.

Examples of few EIR weasel words Potential, may, possible, unlikely, could and might.



These 700 ft wind turbines do not have the potential to kill, may kill, might possibly kill, or could kill....**They will kill and with 100 percent certainty. They will kill every flying species type that is forced to share the same habitat with these turbines. This includes all migratory species and our regional Shasta County eagles.**

Dead Eagles and the Wind Industry

In Dec. 2016 a law was secretly passed in the US allowing an industrial slaughter by modern turbines of 4200 Bald eagles a year. The public has no idea but this threshold of 4200 eagles, was needed to legally cover the ongoing hidden carnage to America's bald eagles by turbines. A slaughter that has been going on for decades and escalated over time with the expansion of wind farms.

Cumulative mortality information like this described below has been deliberately avoided by the Fountain Wind DEIR, the industry and by our government agencies for decades.

In Europe, the white-tailed Sea eagle is really their bald eagle, only without a white head. Read below and pay close attention to how quickly these turbines annihilated this fish-eating eagle population on Smola Island Wind.

“June 23, 2006, BBC News reported that 9 White-tailed Eagles have been killed at Norway’s Smola Island Wind Energy Facility over a 10-month period. Smola is located off the Norwegian coast where a key population of Europe’s largest bird of prey resides.

Since the 68-turbine facility was built, reproductive output has plummeted, with breeding pairs at the site down from 19 to just one.

The Royal Society for the Preservation of Bird’s Conservation Director (M. Avery) noted, “So this colony that is very important – was very important – has been practically wiped out because this wind farm was built in exactly the wrong place”

Smola Island region had at one time one of the world’s densest breeding populations of white-tailed eagles and like the Shasta Lake region, has the highest density of bald eagles in CA.

These eagles were killed off by 2.3 MW turbines just like those installed at Hatchet Ridge. Somola is an area of about 250 square miles, yet this much smaller, 68 turbine wind farm, has a footprint of about 7 square miles. nearly the same size footprint as the Fountain Wind project will have.

A killing area of 250 square miles around the much bigger and more deadly Fountain Wind turbines, will include eagles from Shasta Lake, the Pit River and migratory eagles.





Despite the phony risk analysis presented in the DEIR, bald eagles regularly visit the Fountain wind project area. What I have found is that the wind industry's contrived surveys routinely avoid key migrations, special locations, courtship behavior and nest building activities. This has been an easy way for researchers to rig their "risk analysis data" for developers.

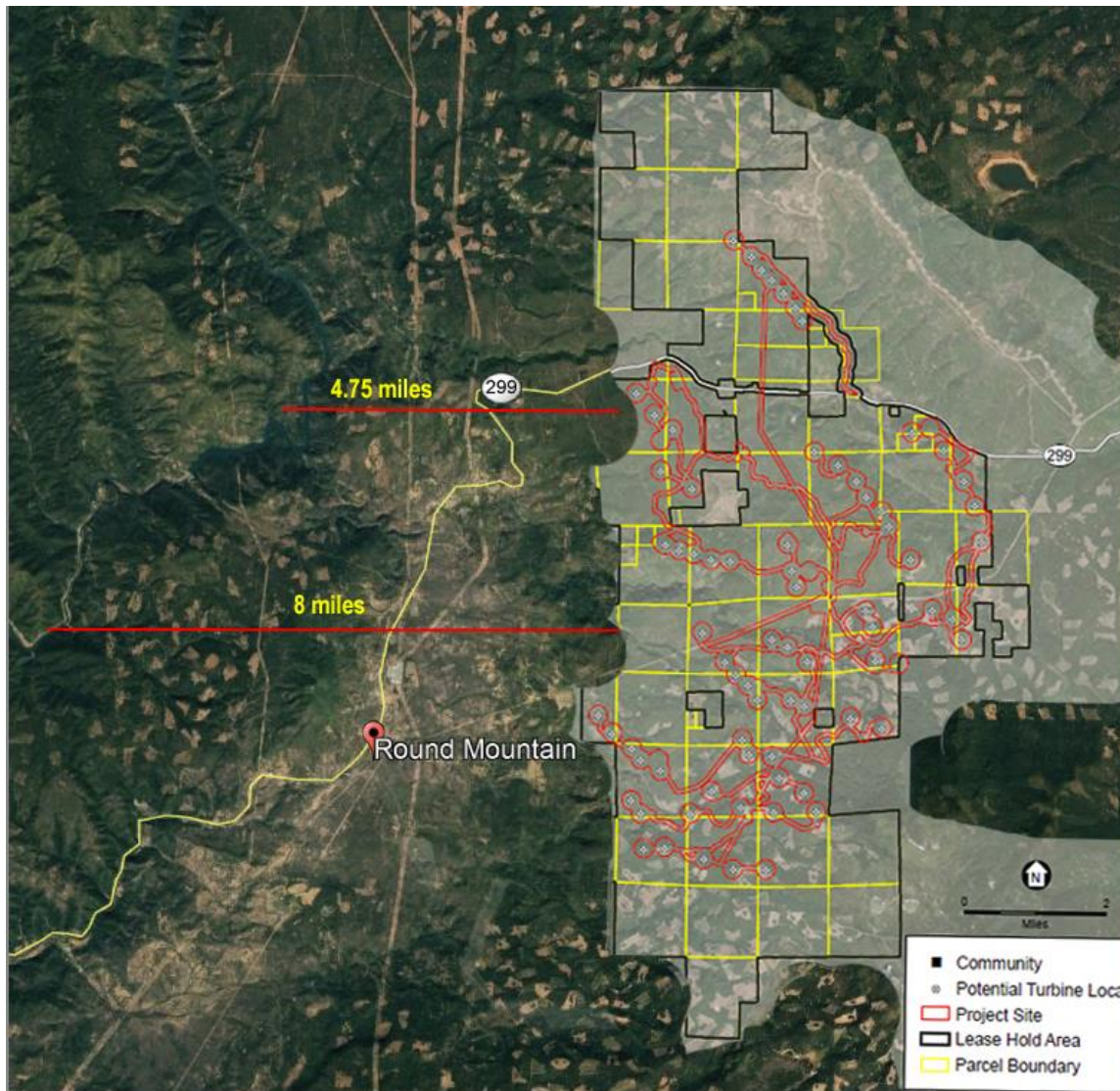
The DEIR did not give exact dates and times of day for the surveys conducted and this is likely the reason. For example, with their winter surveys according to

this information posted in the DEIR, a survey could be conducted in early December and miss most of a bald eagle's dramatic courtship flights and nest building activities. Other contrived surveys, can conveniently miss important bird migrations. And by the way, Winter does not start on Dec 1st.

Table 5a. Bald eagle and golden eagle observations and risk minutes* (min) documented during 60-minute large bird surveys conducted at the Fountain Wind Project from 19 April 2017 – 22 May 2018.

Season	Survey Effort (Hours)	Observations	Flight Min.	Risk Min.	Risk Min. per Min. Survey
Bald Eagle					
Spring (03/01 – 05/16)	102	2	6	0	0
Summer (05/17 – 08/31)	195	1	4	3	0.0154
Fall (09/01 – 11/30)	117	4	10	8	0.0684
Winter (12/01 – 02/28)	117	9	27	24	0.2051
Total	531	16	47	35	0.0659
Golden Eagle					
Spring (03/01 – 05/16)	102	2	4	4	0.0392
Summer (05/17 – 08/31)	195	0	0	0	0
Fall (09/01 – 11/30)	117	0	0	0	0
Winter (12/01 – 02/28)	117	0	0	0	0
Total	531	2	4	4	0.0075

* Risk minutes are defined as flying behavior at or below 200 meters (m; 656 feet [ft]) and within 800 m (2,625 ft) of the survey location.



Bald eagles regularly visit the planned Fountain wind project area. It's a short flight and there is food for them there.

The Eagle Repository in Denver

This 2013 report from the USFWS shows the eagle carcasses sent to Denver in a one year period. It also shows that 202 eagles were shipped from CA (region 8) and the Pacific Northwest (region 1).

NATIONAL EAGLE REPOSITORY ANNUAL REPORT: 10/01/12-09/30/13



REGION	WHOLE EAGLES & EAGLE PARTS RECEIVED			WHOLE EAGLE ORDERS FILLED	EAGLE FEATHER & PARTS ORDERS FILLED	COMBINED FILLED ORDERS BY REGION
	BALD	GOLDEN	REGION TOTALS	BALD/GOLDEN	BALD/GOLDEN	
1	186	60	246	143	384	527
2	30	30	60	527	1,222	1,749
3	547	10	557	164	446	610
4	281	10	291	26	119	145
5	206	3	209	36	166	202
6	256	246	502	197	558	755
7	273	4	277	3	13	16
8	16	136	152	74	260	334
TOTALS	1,795	499	2,294	1,170	3,168	4,338
NEW REQUESTS RECEIVED						
	BALD EAGLES		1,214			
	GOLDEN EAGLES		1,906			
	EITHER SPECIES		1,422			
	TOTAL		4,542			

NOTES: Most of these eagles came from wind farms. Today turbines are killing twice as many.

Most of these repository eagles were fresh carcasses that could have only been found at wind farms. Rotted and decayed eagle carcasses are not given out to Native Americans with whole eagle orders. But the USFWS and wind farms won't tell you anything about any of this. All the anonymous FEIR responses also avoided all my repository information.

USFWS numbers like these below are no longer available, and **based upon wind farm expansion since 2013, the current numbers of eagle carcasses being shipped to this facility are now over 3000 per year.**

Eagle carcass numbers after the development of wind energy in Region 1.....

Repository does not maintain records of the state of origin of carcasses received   for the region as a whole (Jeff Dillon and Bernadette Alensio USFWS pers comm. with M Nugent). The Repository has received 3,048 bald and golden eagles recovered dead in Region 1 of the USFWS (Oregon, Washington and Idaho) from 2000-2010. There is no breakdown available however for each species per state. In the instances where criminal activity is suspected or other unlawful



Fresh eagle carcasses being delivered to the Denver Repository .
 This story from 2014 said that since 1995 they had processed 43000 eagle carcasses.



Table 10 below is from the Fountain Wind DEIR and it is highly deceptive. They show a total of only 101 eagles **“recorded”** as being killed by **“new generation”** turbines in CA and Pacific Northwest, 100 goldens and 1 bald eagle. Look over the Repository list again showing fresh THE bald eagle carcasses and think back to new Dec 2016, laws allowing 4200 bald eagles to be killed annually.

Table 10. Raptor fatalities, by species, recorded at new-generation wind energy facilities in the California and the Pacific Northwest regions of North America.

Species	Scientific Name	Number of Raptor Fatalities ¹	Percent Composition of Raptor Fatalities
red-tailed hawk	<i>Buteo jamaicensis</i>	551	53.5
American kestrel	<i>Falco sparverius</i>	261	25.4
golden eagle	<i>Aquila chrysaetos</i>	100	9.7
northern harrier	<i>Circus cyaneus</i>	19	1.8
Swainson's hawk	<i>Buteo swainsoni</i>	16	1.6
unidentified raptor		14	1.4
ferruginous hawk	<i>Buteo regalis</i>	14	1.4
rough-legged hawk	<i>Buteo lagopus</i>	12	1.2
Cooper's hawk	<i>Accipiter cooperii</i>	8	0.8
unidentified buteo		8	0.8
prairie falcon	<i>Falco mexicanus</i>	7	0.7
sharp-shinned hawk	<i>Accipiter striatus</i>	5	0.5
white-tailed kite	<i>Elanus leucurus</i>	4	0.4
merlin	<i>Falco columbarius</i>	4	0.4
unidentified hawk		2	0.2
peregrine falcon	<i>Falco peregrinus</i>	1	0.1
unidentified accipiter		1	0.1
bald eagle	<i>Haliaeetus leucocephalus</i>	1	0.1
red-shouldered hawk	<i>Buteo lineatus</i>	1	0.1
Total		1,029	100

“New generation” turbines happen to be the biggest eagle killers of all. At Altamont in the first year of operation (2009), with “new generation” turbines, 38 MW of installed capacity killed at least 4 golden eagles. I say at least 4 because 3 bodies were recovered and the fourth was found alive with its wing cut off. Others wander off to die and are never found. New generation turbines also are responsible for most of the 3048 eagles sent to the repository from the Pacific Northwest between 2000-2010,

I was also told by an employed wind tech, that 5 eagles were killed in one month at his wind farm, these were never reported.

Below is a list of reported Altamont golden eagle fatalities, emailed to me by a USFWS agent. In a 31-month period from Feb 2013 to Aug 2015, **85 eagle fatalities** were reported by their turbines

From: "Crum, Daniel" <daniel_crum@fws.gov>
Date: Oct 8, 2015 8:45 AM
Subject: Re: FW: dead eagles
To: "Jill Birchell" <jill_birchell@fws.gov>
Cc:

Jill:

Below is a monthly break-down for Altamont dating back to 2013 regarding eagle fatalities. I can not guarantee these numbers are exact, but I am confident that they are certainly close. I hi-lited the highest count (June 2014). If Jim W has a particularly month of interest, or identifies a possible shorted count, it is possible we have an independent record further accounted for in a specific INV.

February 2013: 4	January 2014: 1	January 2015: 0
March 2013: 3	February 2014: 0	February 2015: 2
April 2013: 3	March 2014: 4	March 2015: 5
May 2013: 1	April 2014: 3	April 2015: 3
June 2013: 3	May 2014: 5	May 2015: 0
July 2013: 2	June 2014: 8	June 2015: 1
August 2013: 5	July 2014: 3	July 2015: 1
September 2013: 5	August 2014: 2	August 2015: 3
October 2013: 6	September 2014: 5	
November 2013: 1	October 2014: 4	
December 2013: 0	November 2014: 2	
	December 2014: 0	

Just the “new generation” turbines at Altamont Pass have probably killed 300-400 hundred Golden Eagles, with most of the victims being Migratory. New

generation turbines have also killed bald and golden eagles trying to nest near the turbines in Solano County and are the most logical reason adult Bald Eagles disappeared from Grizzly Island, located about 5-8 miles away from new generation wind turbines.

Fountain DEIR research totally avoided Nocturnal migration risk analysis

This is so important because nocturnal fatalities are one of this industry's best kept secrets. Also note that this DEIR and the Final DEIR do not cite or quote any of McCrary's San Gorgonio Research.

ENERGY RELATED ENVIRONMENTAL RESEARCH

A Roadmap for PIER Research on Avian
Collisions with Wind Turbines in
California

COMMISSION STAFF REPORT

4.1.1.1 California Studies.

Avian collisions with wind turbines became noticeable in the 1980s, when California began to lead the nation in larger wind energy sites, and researchers began to investigate the problem's severity. A 1985 study at the San Gorgonio WRA documents 40 collisions involving 25 species of birds, including one raptor. An extrapolation of these data yielded an overall estimate of as many as 6,800 birds killed per year, most of them nocturnal passerine migrants (McCrary 1986).

December 2002
P500-02-070F



Gray Davis, Governor

“There is some concern that nocturnal migrating passerines may be compressed near the surface when cloud ceilings are low **or when flying over high mountain ridges, increasing the risk of collisions with turbines.**”

McCrary, M. D., R. L. McKernan, W. D. Wagner, R. E. Landry, and R. W. Schreiber. 1983. Nocturnal avian migration assessment of the San Geronio wind resource study area, spring 1982. Report 83-RD-108 for Southern California Edison Co., Research and Development Division Los Angeles, California, USA.

McCrary, M. D., R. L. McKernan, W. D. Wagner and R. E.

A quote made by McCrary when wind turbines were only 60-100 feet tall.

Today wind turbines can reach up to 700 ft.

During spring 1982 migration in the WRSA most birds flew from 200 - 400 m above ground. However, many birds were recorded flying much lower than this, and a distinct proportion of all migrants were below 111 m (12.9%). Since most turbines considered for use in the WRSA are below 111 m in height, nocturnal migrants flying below 111 m are those that may potentially collide with wind turbine generators.

Numerous studies of avian mortality have shown that the nocturnal flight behavior of most migratory birds makes them particularly susceptible to collisions with a variety of man-made structures. Although many of these structures are considerably taller than the wind turbines presently planned for use in the WRSA, many shorter structures have also been implicated in bird mortality. From these studies avian collisions with wind turbines in the WRSA will almost undoubtedly occur. Because of the complex array of turbine designs (turbine height, number of blades, blade speed, presence and number of guy wires, etc.) available for use, the variety of possible geometrical

Advice from McCrary's 1986 research that's been ignored by the wind industry's fraudulent research for 35 years

the measurement of the actual number of birds colliding with turbines and how these numbers compare to the total population of birds flying over the turbines. The monitoring program should include extensive ground counts of dead or injured birds around a variety of wind turbine configurations combined with simultaneous vertical radar - image intensifier observations on the magnitude and altitude of nocturnal migration. This methodology will provide precise information on the number of individuals and species killed or crippled, percent killed of total birds flying over the turbines, altitudinal distribution of birds as related to the number killed, and the effects of weather and lighting on the number of birds killed. In this manner the biological significance of the number and species killed can be more accurately determined than with simple ground counts. As the number of migrants killed will vary with the type, density, and spacing array of turbines, we stress that these studies should be conducted throughout various stages of construction and not limited to monitoring a specific array of low density single design turbines.

FROM the Fountain Wind DEIR.....

“Nocturnal Avian Surveys

Summary of CDFW Comments and Recommendations:

The Department recommends utilizing multiple survey methods to conduct a nocturnal migration survey at the Project. The Department also recommends the completion of focused nocturnal owl surveys, designed to detect all species of owls potentially present within the Project.

Response:

Although nocturnal radar studies at proposed wind energy projects have been implemented as a method to characterize migration patterns and potential exposure levels for nocturnal migrants, no correlation has been found between radar-measured passage rates of avian targets and post-construction fatality rates, indicating that preconstruction radar studies are not an effective tool for assessing risk to migrating birds at wind energy facilities (Tidhar et al. 2012, **Stantec 2017**). As such, nocturnal radar studies at Fountain are unlikely to inform risk at the Project and are unwarranted. Collision mortality of nocturnal migrant birds has generally been low at wind energy facilities, particularly in the western U.S., and multi-bird fatality events are extremely rare. This trend is supported by the results of the 3-year fatality study at Hatchet Ridge (**Tetra Tech 2014**), located adjacent to the Project and on the highest ridgeline in the immediately surrounding area, where nocturnal migrant fatality rates have been very low.”

“The Department recommends utilizing multiple survey methods to conduct a nocturnal migration survey at the Project. The Department also recommends the completion of focused nocturnal owl surveys, designed to detect all species of owls potentially present within the Project.”

None of this was done for the DEIR and the reasons given for not doing socomplete rubbish. In addition, agency recommendations are not requirements. Please do not give these flimflam researchers a free pass.

The DEIR statement above also quotes **Stantec** and **Tetra Tech** with their opinion of nocturnal radar studies. What's so absurd about that, is that, if either of these outfits did conduct radar studies for the Fountain Wind Project, Supervisors would still never know real world conditions because their studies are so absurd. True species mortality risks from the Fountain wind turbines would not be disclosed.

Truth is, one-sided and nonscientific wind industry studies, will never be an effective tool for assessing risk. Also, a correlation between radar studies and post construction studies will never exist because of all this industry's fraudulent post construction mortality research. Below I give an example of radar studies conducted by each of these outfits and explain how their research methodologies that hid data.

Tetra Tech's disgraceful Radar Study conducted in one of America' greatest bird migration corridors

Tetra Tech conducted radar studies for Lake Erie's Ice breaker wind project. Like Dr. Kerlinger's research, which I am well acquainted with (See Kerlinger's nonscientific research & comparisons later in these comments) Tetra Tech's

radar study is just more of the wind industry's nonscientific studies ready for the dumpster.

2.2.1 Onshore Radar Data Results

The MERLIN Avian Radar System operated onshore at the Cleveland Lake Front State Park (East 55th Street Marina) from March 31 to April 30, 2010 (see Figure 2.1). A total of 128.8 total hours of onshore radar data were recorded during the onshore sampling period, out of a total of 712 available hours between March 31 and April 30. The onshore radar survey recorded substantial period of rain and wave clutter, resulting in only about 20% of available, clear air, radar data available for analysis. Wave clutter was less of a problem at the offshore Crib site; however there were still periods of rain.

As for Tetra Tech's Lake Erie research, I found that the their Avian and Bat Studies were deliberately designed so important "incidental" data could be excluded. Their radar sampling was set up to miss the highest concentrations of migrating species. Very important data detailing lower altitude bird flight patterns during periods of low visibility were also left out. Only 128.8 hours (18%) of radar data collected was used from a total of 712. How unscientific can you get?

"Though incidental observations of birds in the vicinity of the Study Area were not included in the results of the standardized surveys, they provide insight on the avian community in the general area."

"The MERLIN Avian Radar System operated offshore at the Crib (see Figure 1.1) during the 2010 sampling period, from May 1 to May 26, 2010, and again from August 16 to October 12, 2010."

"It is known that concentrations of most waterfowl species peak on Lake Erie during March to early April (Prince et al., 1992) with fall migration spanning a three to four month period where different species show peaks in abundance at different times late into the fall migration season (Ewert et al., 2006)."

"Data was not collected or analyzed due to weather (precipitation or fog) interference and/or radar mechanical downtime."

When dealing with one of North America's most important and highest concentrations of birds, one would think that credible scientific radar studies would have included accurate year-round data collection and credible observations. But this isn't the case with wind industry research.

The **Tetra Tech studies** were supposed to provide baseline data for risk assessment. But this is not possible considering the limited unscientific data collected for this project. These studies also included no information or opinions

about avian behavior responding to the absence of ice expected around these offshore turbines during winter months, the risk created by increased year-round perching availability attracting species, and the attraction of species from the increased food available to raptors and fish-eating species at turbine sites that will accumulate because the cover provided by offshore turbines.

Supervisors should remember, Tetra Tech is the same outfit that conducted the nonscientific mortality studies for Shasta County's Hatchet Ridge project.

STANTEC's fatally flawed radar and eagle studies conducted for a project in Humboldt County with 700 ft wind turbines

Biological Resources: Humboldt Wind Energy Project Eagle and Raptor Aerial Nest Survey Report, Humboldt County, California, Spring 2018

I have seen time and again, that Stantec research is very good at designing studies that do not find target species and eliminate data. This eagle survey serves as a good example.

Stantec's eagle and raptor nest surveys should have used both ground-based and helicopter survey techniques. Stantec did not any conduct ground-based nesting surveys that routinely document nesting behaviors, foraging territories and nesting territories. Ground based surveys are even more important than helicopter surveys. So just because Stantec did not report any eagle nests, it does not mean that they do not exist. Bald eagles and golden eagles do live around and were seen around this project site. It is very likely that the nests of both of these eagle species exist in the vicinity of this project site.

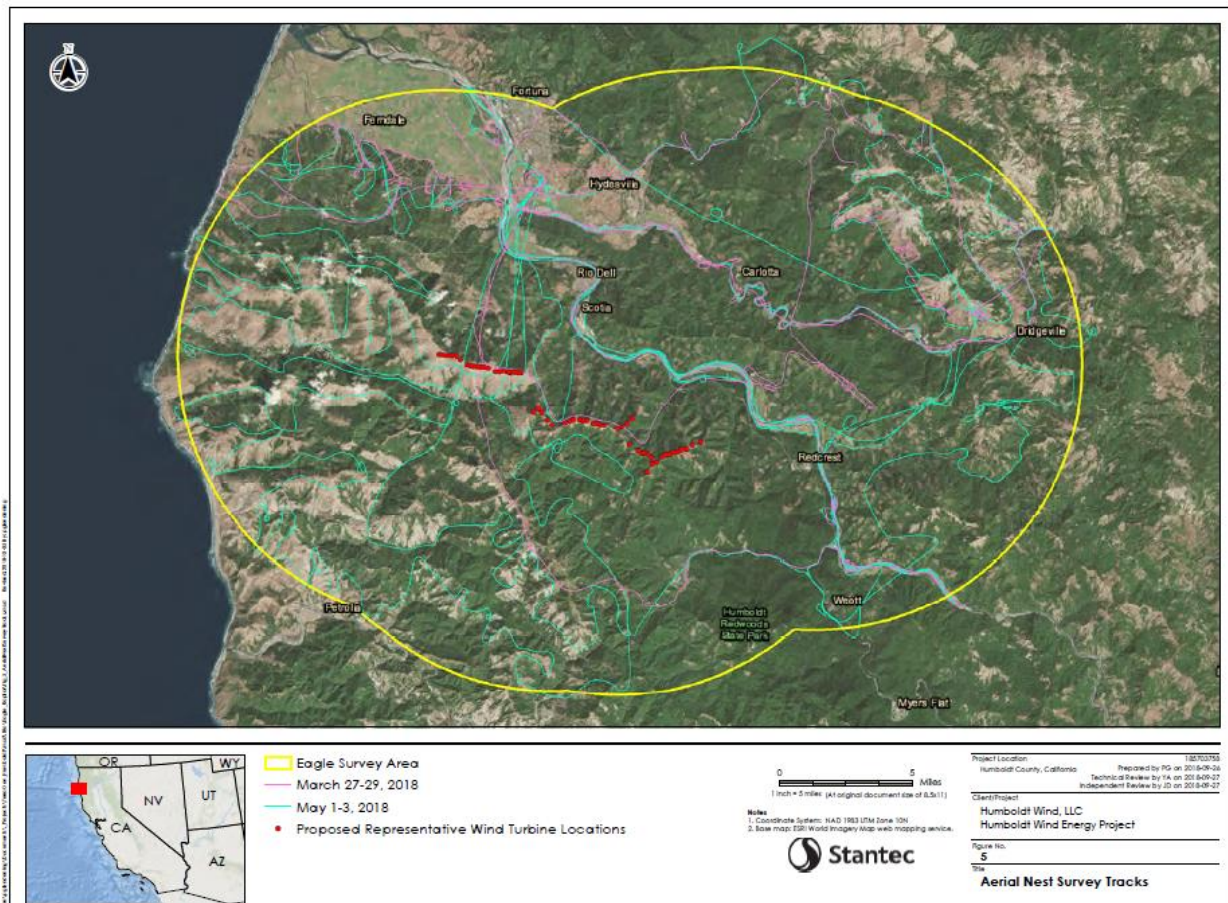
But these Stantec helicopter surveys were also poorly done. While these flight patterns shown in the DEIR would probably be suitable for an open desert area like Nevada. They are not suitable for this forested project site. There are huge flight pattern gaps that are over than ten miles wide in this terrain. In this habitat, if the proper flight angle is not taken, a helicopter could miss an eagle nest only ¼ mile away. This is especially true for a golden eagle's nest.

In my analysis of the habitat around the project site on google earth imagery, I would have never conducted these eagle surveys like Stantec did. It is also my opinion that these flight routes were staged. The eagle nest surveys also failed to take a simple boat trip down the river to document bald eagle behavior that could help observers verify a nest, nesting activity and or a nesting territory.

These eagle surveys are a scientific disgrace yet this DEIR falsely claims otherwise.“The range of avian species observed coupled with active and inactive stick nests of varying size detected suggest that the survey methods are appropriate and suitable to observe eagles or their nests if the opportunity presented.” The only truth in this statement is that these survey methods were only appropriate for wind energy’s version of research.

The 86 square miles of the Altamont pass Wind Resource Area, including a large area that extends for miles in all directions, was abandoned decades ago by nesting golden eagles because of wind turbines. The region around the Humboldt wind project needs a much more definitive raptor nest inventory. This is very important because these turbines will kill off most of these local raptors and species habitats will be abandoned.

Stantec biologists reported seeing 21 different species of raptors in this excellent habitat. They produced very few raptor nests and provided no population estimates for these reported species.



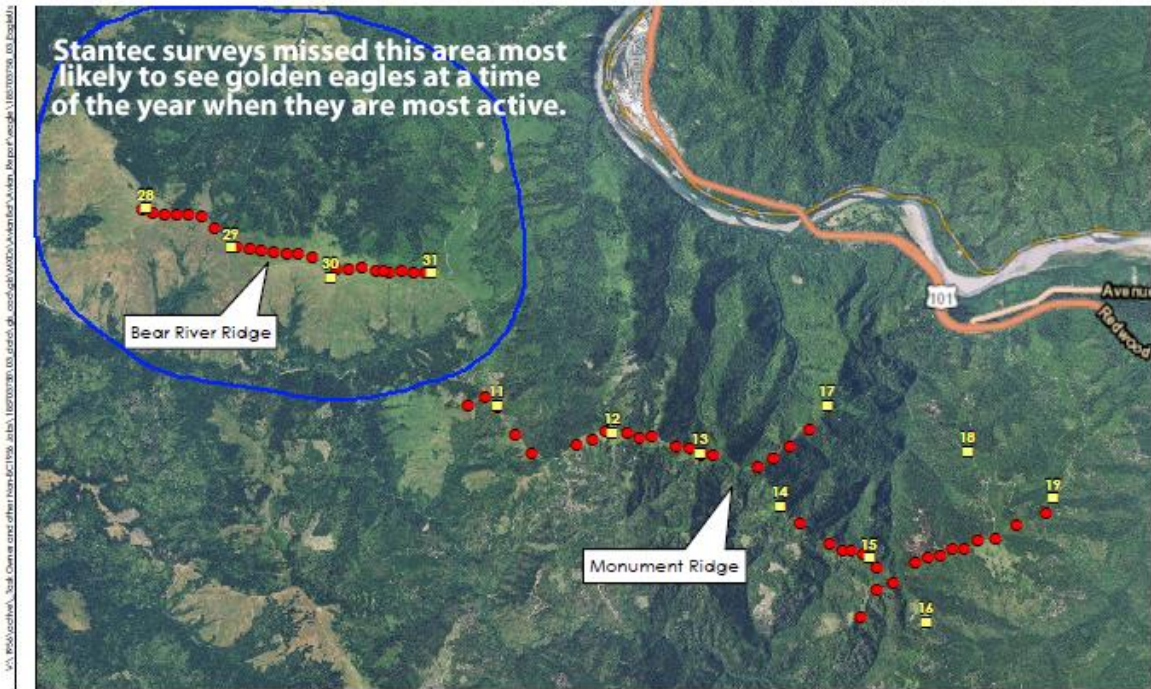


Table 1. Survey effort by plot number for eagle use surveys conducted at the Humboldt Wind Energy Project, Humboldt County, California, October 24, 2017–October 26, 2018

Plot No.	Month/Dates													Total Visits
	Oct 24–26	Nov 1, 19, 29	Dec 13, 19–20	Jan 3–4, 9–10	Feb 7, 14–15	Mar 7–8, 14	Apr 3	May 1, 23, 29	Jun 6–7, 15, 26	Jul 3–5, 11–12, 19, 25	Aug 8–9, 15, 27	Sep 13–14, 22, 24, 27–28	Oct 4, 15, 26	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	13
12	1	1	1	1	1	1	1	1	1	1	0	1	1	12
13	1	1	1	1	1	1	1	1	1	1	1	1	1	13
14	1	1	1	1	1	1	1	1	1	1	1	1	1	13
15	1	1	1	1	1	0	0	1	1	1	1	1	1	11
16	0	2	1	1	1	0	0	1	1	1	1	1	1	11
17	0	2	1	1	1	1	1	1	1	1	1	1	1	13
18	0	2	1	1	1	0	0	1	1	1	1	1	1	11
19	0	2	1	1	1	0	0	1	1	1	0	1	1	10
28	0	0	0	0	0	0	0	0	1	1	1	1	1	6
29	0	0	0	0	0	0	0	0	1	1	1	1	1	6
30	0	0	0	0	0	0	0	1	1	1	1	1	1	6
31	0	0	0	0	0	0	0	1	1	1	1	1	1	6
Total	5	13	9	9	9	5	5	13	13	13	11	13	13	131

Biological Resources: *Humboldt Wind Energy Project Marbled Murrelet Radar Survey Report*,

The Marbled Murrelet is an endangered species. There are a number of problems with the Stantec radar surveys conducted and submitted for this

project. For the study there was not full horizontal and vertical radar coverage of the turbine sweep zones. In fact, there was very little. Then of the limited radar data that was collected, it was left for Stantec to interpret. Flight routes being taken by these murrelets into old growth stands near these turbine sites are not covered.

Look close at The DEIR images and study all the huge blind spots. With these blind spots, there is little radar coverage on most of these turbine sites. There is also no complete vertical and horizontal radar coverage for this project's turbine rotor sweep zones (see VSR and HSR image). This vital information is missing not only for these Marbled murrelets but for a multitude of other species as well. How many thousands of total targets were seen in this radar study, only to be dismissed as not being murrelets?

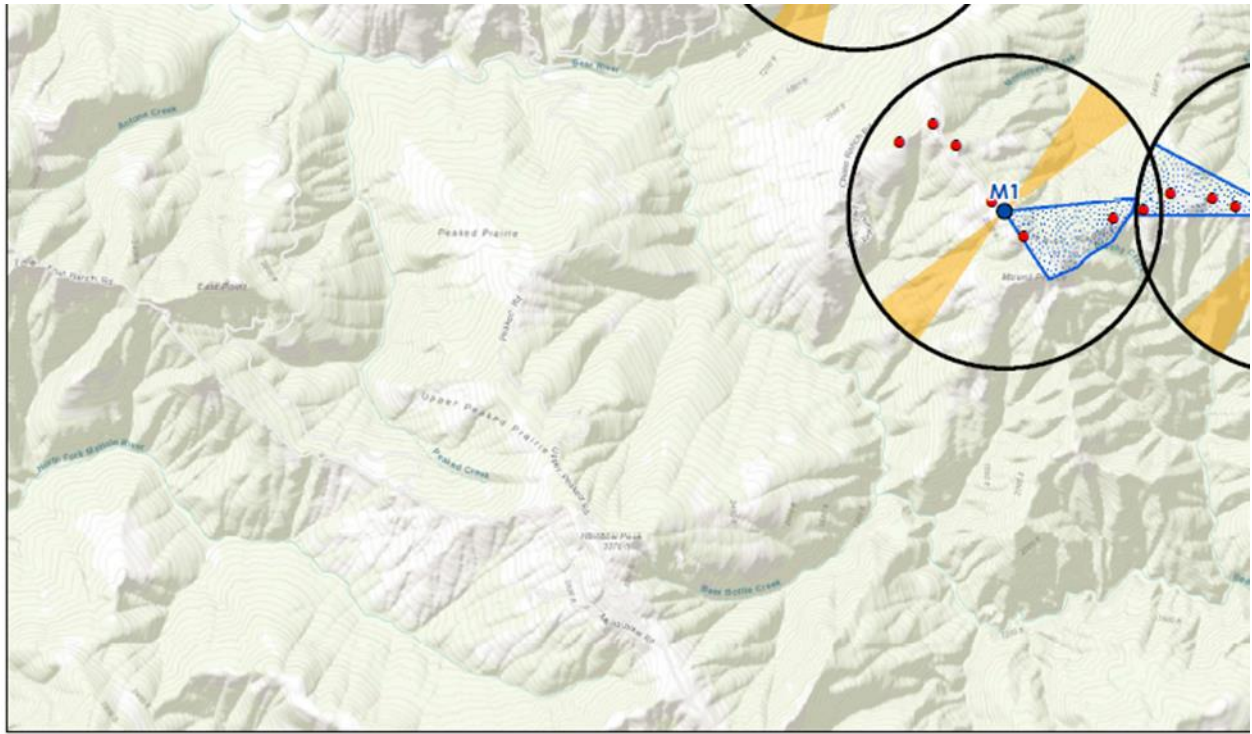
The Stantec radar studies also missed nearly a month and in some cases 2 months of very important murrelet flight data, and nesting location behavior data and courtship behavior data. That would put them in rotor sweep zones. The Stantec radar surveys also missed months of mid-day activity periods that could have shown murrelets flying back and forth from their nests after bringing food to offspring.

Examples of exclusionary statements

“Three observed ridge crossing flights **did not have any vertical data available,**”
“Flight altitude, **when available,** for targets observed or projected to have crossed the ridge.”

“**With some exceptions,** most murrelet activity that we observed was generally traveling parallel to the project area”

These radar studies and this DEIR, tell the public virtually nothing about the Murrelets travel routes, their nesting in the forests around these turbine sites, their, or behaviors that indicate nesting. All this missing information is important in order to estimate the number of Murrelets and other species that will be killed when passing through the millions of cubic feet of deadly rotor sweep.



Legend

- Proposed Representative Wind Turbine Locations
- Radar Survey Location
- 1.4 km Radar Range Limit
- ▨ Radar Blind Spot
- Initial Vertical Radar Antenna Alignment

Table 2. Survey dates for marbled murrelet radar sampling at the Humboldt Wind Energy Project, Humboldt County, California, April 17, 2018 - September 27, 2018.

Radar Station	Morning Surveys	Evening Surveys	Mid-day Surveys
M1	● 4/22, 5/1, 5/5, 5/23, 6/18, 7/8, 7/25, 8/18, 9/8, 9/24	● 4/21, 4/30, 5/4, 5/22, 6/17, 7/7, 7/24, 8/17, 9/7	● 8/13, 8/14
M2	● 4/22, 5/1, 5/5, 5/23, 6/16, 7/9, 7/11, 7/26, 8/17, 9/9, 9/25	● 4/21, 5/4, 5/22, 6/15, 7/8, 7/25, 8/16, 9/8	●
M3	● 4/19, 4/30, 5/6, 5/24, 6/20, 7/9, 7/26, 8/17, 9/9, 9/25	● 4/18, 4/29, 5/5, 5/23, 6/19, 7/8, 7/25, 8/16, 9/8	● 6/19
M4	● 4/20, 4/28, 5/4, 5/27, 6/16, 7/7, 7/28, 8/19, 9/10, 9/26	● 4/19, 4/27, 5/3, 5/27, 6/15, 7/6, 7/27, 8/18, 9/9	●
M5	● 4/21, 4/26, 5/2, 5/25, 6/17, 7/10, 7/27, 8/14, 8/16, 9/12, 9/27	● 4/20, 4/25, 5/1, 5/26, 6/16, 7/9, 7/26, 8/15, 9/11	● 8/13
BR1	● 5/24, 6/17, 7/8, 7/25, 8/18, 9/8, 9/24	● 5/23, 6/16, 7/7, 7/24, 8/17, 9/7	● 6/20
BR2	● 5/26, 6/18, 7/7, 7/28, 8/19, 9/10, 9/26	● 5/24, 6/17, 7/6, 7/27, 8/18, 9/9	●
ER	● 4/18, 4/27, 5/2, 5/22, 6/15, 7/10, 7/27, 8/20, 9/7, 9/12, 9/27	● 4/17, 4/26, 5/1, 5/21, 6/14, 7/9, 7/26, 7/28, 8/19, 9/6, 9/11	●

The breeding season is defined by the earliest known nesting and latest known fledging dates, and is used by regulatory agencies to avoid adverse effects to the species. The breeding season extends 24 March – 15 September in California, and 1 April – 15 September in Oregon and Washington.

● Nearly a month late
● Two months late

● Three to 5 months late or no surveys



Biological Resources: *Marbled Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California*

None of this discussion on avoidance has any merit because the data used was collected with severely tainted and deceptive non scientific research methodologies. There was not full radar turbine sweep coverage with this murrelet radar study. Important data was missed and other data excluded. In reality, there were likely hundreds of ridge crossings for each pair nesting near these proposed turbine sites. The Stantec radar studies also missed nearly a month and in some cases 2 months of very important murrelet flight and nesting behavior.

The logic used in this discussion on avoidance is particularly disturbing and absolutely inexcusable.

“There are no murrelet-specific studies of avoidance. However, Sanzenbacher and Cooper (2015) discuss cases of murrelet avoidance of structures where no collision occurred (100% avoidance). Murrelets fly in and out of the canopy of large trees at high speeds and are presumed to recognize and avoid obstacles, even in low-light. The amount of time a murrelet will spend in a turbine area is short.”

This same language was used in wind industry reports discussions when this industry invaded and destroyed the historical habitat for the California Condor around Tehachapi pass. The fact is every bird on this planet can recognize and avoid obstacles like branch even in low light. **But what birds can't and shouldn't be expected to avoid are massive blades coming at them with speeds up to 300 mph.** Any slim chances a bird has for avoidance also drops significantly in low light conditions, darkness, high winds (that inhibit maneuverability) and with low visibility foggy or low cloud conditions.

Fountain Wind FEIR RESPONSE P29-18

” The comment shares a warning from “an insider” that golden eagles on occasion have attempted to nest within the 86 square mile area of the Altamont Wind Resource Area, but they fail. **The Altamont Pass is commonly regarded as supporting the highest concentration of breeding golden eagles in the world.⁷⁶ While golden eagle mortality is high in the Altamont, the area also supports successful breeding by this species (Id.).**

How green research created the highest imaginary population of golden eagles in the world

When reading this over keep in mind that since 2016, wildlife agencies can't even verify 100 truly occupied golden eagle nest sites in the entire state of CA. The few golden eagle nests that remain in the region are miles away from the 86 square mile wind resource area.

U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines

Assessment of Population-level Impacts

The Altamont Pass Wind Resource Area (APWRA) has been the subject of intensive scrutiny because of avian fatalities, especially for raptors, in an area encompassing more than 5,000 wind turbines (e.g., Orloff and Flannery 1992; Smallwood and Thelander 2004, 2005). Field studies on golden eagles, a long-lived raptor species, have been completed using radio telemetry at APWRA to understand population demographics, assess impacts from wind turbines, and explore measures to effectively reduce the incidence of golden eagle mortality for this area. (Hunt et al. 1999, and Hunt 2002). Results from nesting surveys (Hunt 2002) indicated that there was no decline in eagle territory occupancy. However Hunt (2002) also found that subadult and floater components of golden eagle populations at APWRA are highly vulnerable to wind turbine mortality and results from this study indicate that turbine mortality prevented the maintenance of substantial reserves of nonbreeding adults characteristic of healthy populations elsewhere, suggesting the possibility of an eventual decline in the breeding population (Hunt

and Hunt 2006). Hunt conducted follow-up surveys in 2005 (Hunt and Hunt 2006) and determined that all 58 territories occupied by eagle pairs in 2000 were occupied in 2005. It should be noted however that golden eagle studies at APWRA (Hunt et al. 1999, Hunt 2002, and Hunt and Hunt 2006) were all conducted after the APWRA was constructed and the species does not nest within the footprint of the APWRA itself (Figure 4; Hunt and Hunt 2006). The APWRA is an area of about 160 sq. km (Hunt 2002) and presumably golden eagles formerly nested within this area. The loss of breeding eagle pairs from the APWRA suggests these birds have all been displaced by the project, or lost due to various types of mortality including collisions with turbine blades.

On the Federal Wind industry guidelines, there is a short discussion about the Altamont Pass wind turbines and the impact they have had on the regional golden eagle population. None of it is true. Also not true, are the all the reports to the public that the Altamont Pass area reportedly has largest density of breeding Golden Eagles in the world. Sadly, this is a myth created from bogus wind industry research hiding industrial impacts.

What has taken place to golden eagles around Altamont is important because this wind energy site has been slaughtering golden eagles for decades. In 2015 the USGS published a report or survey that estimated the eagle population **to be**

approximately 280 pairs in a 2000 square mile region around Altamont. They came to this conclusion by relying on a previous bogus green energy study from the Clinton Era and rigging new methodology used for this study. <https://pubs.usgs.gov/of/2015/1039/pdf/ofr2015-1039.pdf>;

I am aware of the Altamont Wind Resource Area because I conducted raptor and eagle research there in the 1970's. **I was also told that when the research was conducted in the 90's declaring that the region around Altamont had "59 golden eagle nesting territories within 30 kilometers"one of the participating researchers said he only knew of 6.**

USGS survey claims 280 pairs when there might actually be only 20 nesting pairs. Of course, real scientific research and ethical institutions could easily clear all this up.

The final USGS estimate of 280 pairs is even more remarkable when it is revealed that this study could **only verify 11 occupied eagle nests** that produced young in the region. To reach 280 pairs these studies basically used the arbitrary subjective term "**nesting territories**" from the earlier 90's studies and figured an average from these imaginary golden eagle territories.

Now look at this critical information below that was well hidden in this USGS study. What is circled in red is by far the most important information in this entire study. The researchers **could only document 11 occupied** golden eagle nest sites.

Table 1. Survey effort and detections of golden eagles and their young during multistate occupancy surveys conducted in the Diablo Range, California, 2014.

[Breeding stages were courtship (January 1–February 28), incubation (March 1–April 30), nestling (May 1–June 15), and fledgling (June 16–July 31)]

Survey occasion and breeding stage	Sites surveyed	Number of sites surveyed with 1 or more golden eagles detected (percentage)	Number of sites surveyed with 1 or more territorial pairs detected (percentage)	Number of occupied sites with 1 or more young produced (percentage)
1: courtship	111	95 (77.5)	64 (57.7)	
2: incubation	123	90 (72.6)	64 (52.0)	2 (1.6)
3: nestling	113	80 (64.0)	39 (34.5)	11 (9.7)
4: fledgling	71	49 (76.6)	20 (28.2)	11 (15.5)
All visits combined	133	119 (89.5)	87 (65.4)	17 (19.5)

How did these pseudo experts get 280 golden eagle pairs? With their contrived nonscientific methodology that allowed them to count the same eagles over and over again from different survey sites, in much larger golden eagle territories occupied by just one pair. I know for a fact that one golden nest site and territory I studies near Altamont, consumed at least 6 of these absurd unscientific polygon territories.

....."**As a consequence, we used a probabilistic sampling approach to infer estimates of occupancy, reproduction, and number of territorial pairs of golden eagles.**"

Look closely at the two images. One is from the fake Federal study; the other image is from a publication put together by the Mt. Diablo chapter of the Audubon Society with the help of the CA Department of Fish and Game and numerous other local agencies.

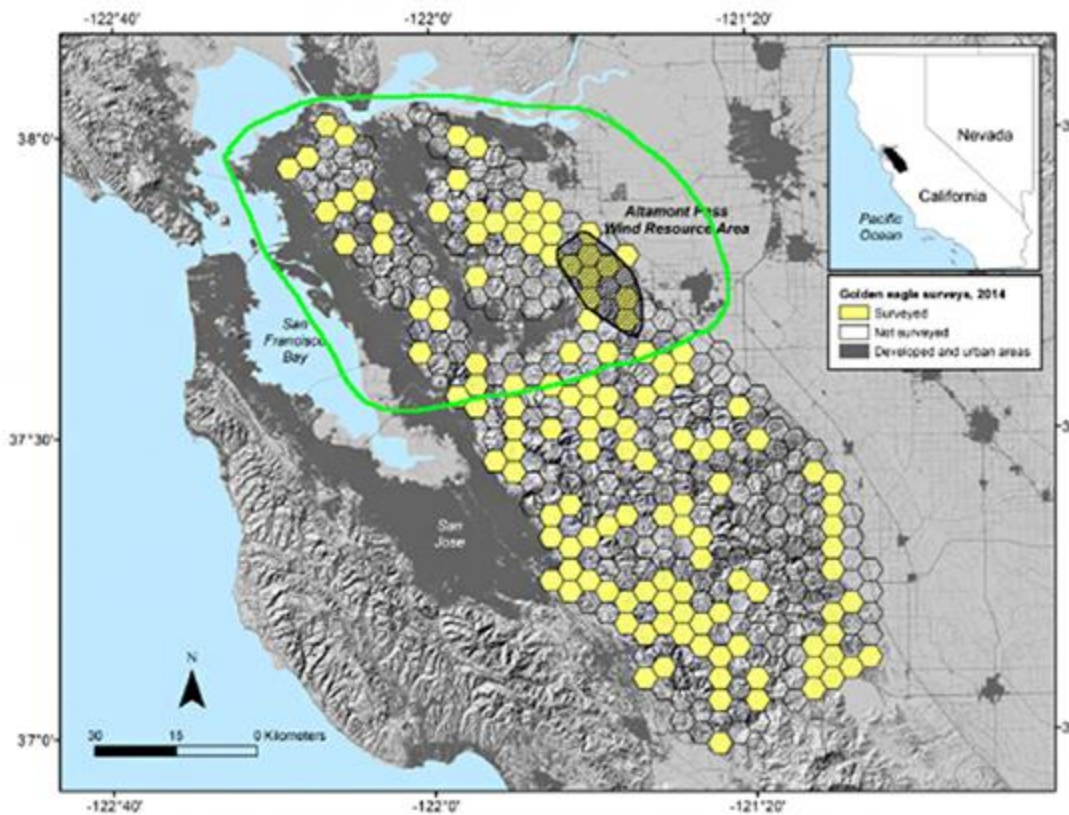
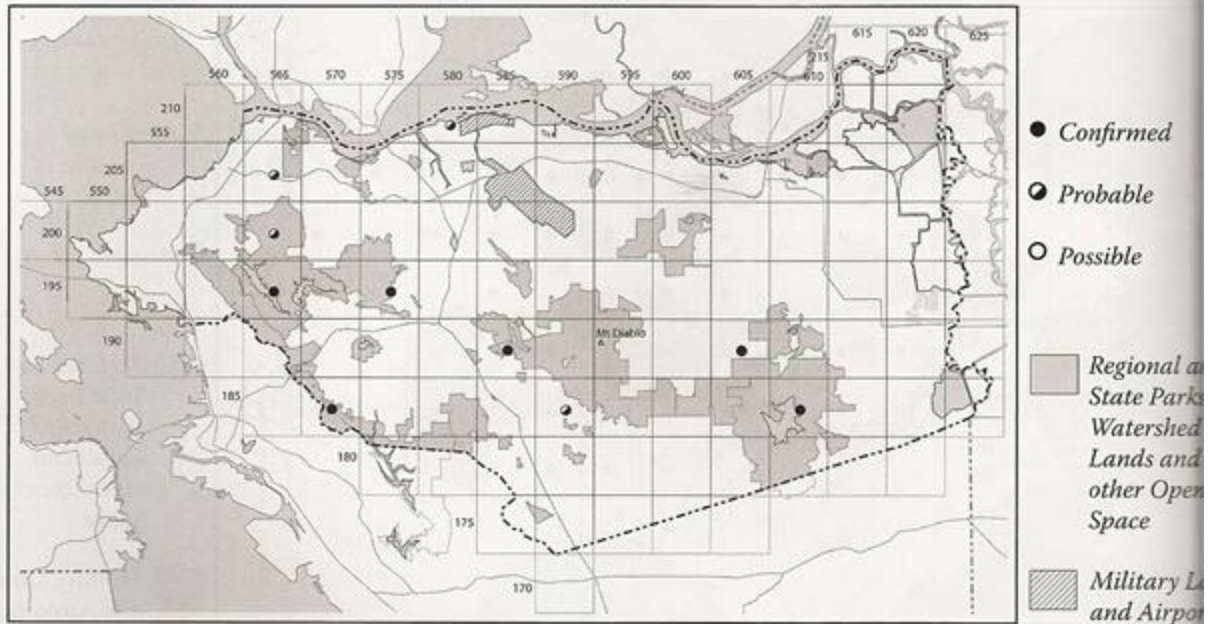


Figure 1. Map showing Diablo Range study area of west-central California and distribution of 133 randomly selected survey plots (1,385-hectare hexagons highlighted in yellow) that were repeatedly searched for evidence of occupancy and breeding success of golden eagles in 2014.

GOLDEN EAGLE • *Aquila chrysaetos*



Massive, majestic and mortal enemy to ground-squirrels everywhere, the Golden Eagle is in a struggle against urban sprawl to maintain its local role as a symbol of wildness in a place becoming less wild with each passing day.

Current status and distribution

The Golden Eagle is an uncommon and local nester

but it is assumed they were taken from the Diablo Range west of town.

Breeding and natural history

The atlas team confirmed nesting eagles on ten occasions in 6 blocks. Nest building was recorded as early 16 December. Occupied nests (contents unknown) were noted four times 9 March–24 April; nests with young

I want to point out that golden eagles did nest in the 160 sq. km footprint of APWRA and they have been killed off by these turbines. I was also told by a qualified observer that golden eagles have made unreported nesting attempts in the APWRA but these nests always failed.

Similar research with fraudulent data building methodology was created in Scotland to hide a rapidly declining population of golden eagles. These fraudulent studies from the UK claim there are 508 nesting pairs of golden eagles. An increasing population was reported, when there are probably less than 100 pairs remaining.

Just like in CA, this Scotland eagle population currently being killed off by wind turbines.

Here is review of two supposedly “scientific” wind energy studies

The 2006 Shiloh west coast and 2006 Maple Ridge east coast, mortality studies. Both have fatal flaws, but one has far more

MAPLE RIDGE WIND POWER AVIAN AND BAT FATALITY STUDY REPORT

Prepared by: Aaftab Jain Paul Kerlinger Richard Curry Linda Slobodnik
Curry and Kerlinger, LLC

EXECUTIVE SUMMARY

“The Maple Ridge Wind Power Project consists of 195 wind turbines and three permanent meteorology towers on the Tug Hill Plateau of Lewis County, just west of Lowville, New York. In 2005, a total of 120 Vestas wind turbines were constructed within the Phase I project area; the remaining 75 turbines in Phase IA and II of the project were constructed in May to December 2006. **Each 1.65 MW turbine** consists of an 80-meter-(262-foot)- tall tubular steel tower; a maximum 82-meter-(269-foot)-diameter rotor; and a nacelle which houses the generator, transformer, and power train. The towers have a base diameter of approximately 4.5m (15 feet) and a top diameter of 2.5 m (8 feet). The tower is topped by the nacelle, which is approximately 2.8m (9 feet) high and 7.6m (25 feet) long, and connects with the rotor hub. **The rotor consists of three 41-m(134-foot)-long composite blades.** Approximately 30% (38 out of 120) of the nacelles are equipped with L-864 FAA aviation obstruction beacons (lights) consisting of flashing strobes (red at night) and with no beacon illumination during the day. With a rotor blade oriented in the 12 o’clock position, each turbine has a maximum **height of approximately 400 feet** (122meters). All components of the turbine are painted white.”

On the surface wind industry mortality research appears very credible, but upon expert scrutiny, there are always study methodologies to be found that hide mortality data. Then along with these studies I discover the obvious omission of facts, a lack of important information and an avoidance of important follow-up studies. With wind energy research, there really is no true science and the industry makes up research methodologies to suit their needs. It has been this way for decades.

While the Maple Ridge 3-year mortality study was not scientific, I will show, it did adhere to the ongoing wind industry pattern of severely flawed, inconsistent and unscientific research. There is a lot I could add about this flawed study, but I will only touch on enough proof needed to illustrate a lack of science a lack of good judgement and to make it clear to all, that most of the mortality went unreported.

The lesson from Maple ridge for everyone, is this, just because data is collected and then used in complex calculations, does make it science or the truth. The study methodologies for this study were flawed and true experts should have known better.

The Maple Ridge wind farm study claimed to use 120 by 130-meter rectangular search plot and then produced calculations for a circular area out to 90 meters from towers. The corners in this imaginary round search plot represented 90 meters. I use the word imaginary because the total average search areas in the study were about 11,300 sq. meters or only 71% of the stated 120 by 130 meters rectangle.

As I will show, this methodology produced severely flawed calculations and left a substantial amount of turbine mortality unreported. I also want to point out that this search area size selected for these large turbines is not much bigger than the search areas used for the thousands of searches used around Altamont's 100kW turbines. The small turbines at Altamont Turbines have a rotor sweep of about 200 sq. meters each. The Maple Ridge turbines, were 26 times larger having 5278 sq. meters of rotor sweep. Going into this study all the researchers involved should have known better than to restrict the carcass study areas and follow-up calculations, to a 120 by 130-meter area around these very large turbines. The unscientific methodology used for this study also restricted searchers to only look at an average search area size of about 60 meters out from towers leaving 81% of the total study area 60-90 meters, not actually searched. The area beyond 60 meters is very important because for a turbine this size, this is the area where researchers should have expected to find the most carcasses.

If study design allowed for searches out to 150 meters and then added appropriate numbers for carcasses out to 200 meters. I could fully understand. Yet this entire area was avoided in the study. The reality in all this is that is that when considering a minimum search area of 150 meter, that should have used, searches missed over 95% of the areas around these turbines where carcass would have been found.

Is it scientific or credible to expect similar carcass dispersal distances from these wind turbines?



**Maple Ridge had search areas of about 60 meters, the small turbines 50m
The Maple Ridge turbines have 26 times the rotor sweep and are 300 ft taller.**

Years of research around small turbines at Altamont, using complete searches of a 50-meter distance out from towers, showed that even this search area size still missed many turbine fatalities. For turbines, the size of the Maple ridge turbines and from the research conducted up to 2007, most of the carcass dispersal for the Maple Ridge study should have expected to found beyond 60 meters from towers. The data shown below proves this point.

Below is carcass distribution data collected from Altamont turbines with approximately 9 meter blades and maximum heights of about 100 feet. Today's turbines are 400-500 feet tall and average carcass distribution is reported to be about 20-25 meters from around turbines with 50-60 meter blade lengths.

Table 2-5. Number and Percentage of Turbine-Related Avian Fatalities within and beyond 125 Meters from Turbines

Bird Year	Within 125 Meters	Beyond 125 Meters	Total
2005	545 (99.6%)	2 (<1%)	547
2006	1,185 (99.5%)	6 (<1%)	1,191
2007	1,338 (98.7%)	18 (2%)	1,356
2008	924 (99.1%)	8 (<1%)	932
2009	815 (99.5%)	4 (<1%)	819
Total	4,807 (99.3%)	38 (<1%)	4,845

ICF International. 2011. Altamont Pass Wind Resource Area Bird Fatality Study, Bird Years 2005–2009. September. (ICF 00904.08.) Sacramento, CA. Prepared for Alameda County Community Development Agency, Hayward, CA.

Carcass distribution for 631 small - bodied birds

Average turbine size 103 kW on 24 meter towers with average blade length of 9.25 meters

Small-bodied Birds

Our search radius included 90.5% of the carcasses of small-bodied bird species (Figure 2-9B), of which 75% were located within 34 m of the tower. The mean and standard deviation of these 631 distances was 23.8 ± 19.4 m. Most carcasses were found northeast of the tower, and a considerable number were located southwest (Figure 2-10B), just as the large-bodied bird carcasses had been distributed.

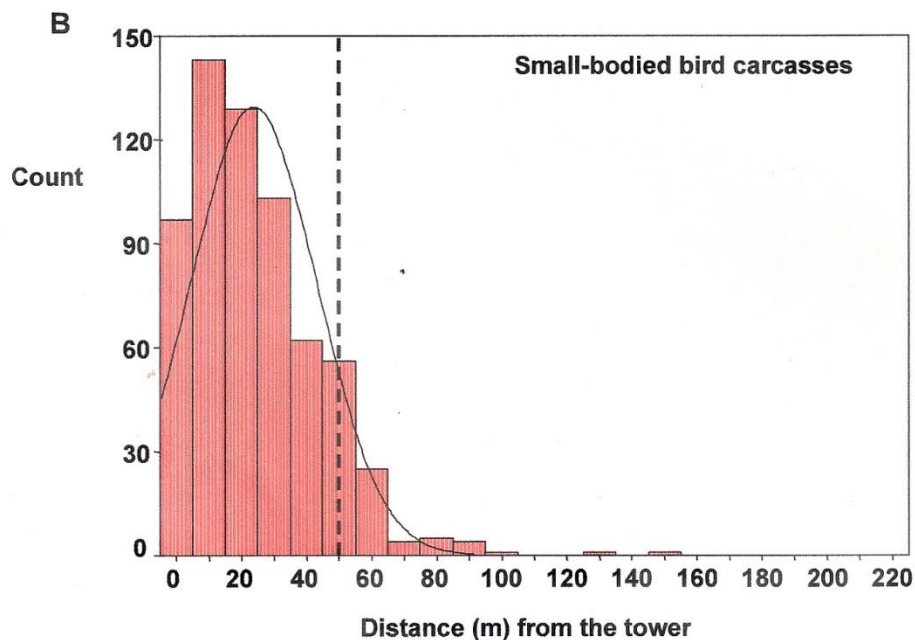


Figure 2-9. Frequency distributions of distance from the wind tower among carcasses of large-bodied (A) and small-bodied (B) bird species

^a Set 1 includes the 1,526 wind turbines (151.165 MW) in the search rotation through September 2002.

^b Set 2 includes 2,548 wind turbines (267.090 MW) in the November 2002–May 2003 rotation.

^c Set 3 includes the 1,326 wind turbines (161.750 MW) not included in any search rotation. Mortality for Set 3 was estimated by taking the weighted average from the two sampled sets of wind turbines ((mortality of Set 1 × 151.165 MW) + (mortality of Set 2 × 267.09 MW)) ÷ 418.255 MW.

Carcass distribution for 468 large bodied birds

Average turbine size 103 kW on 24 meter towers with average blade length of 9.25 meters

2.3.2 Distances of Bird Carcasses from Wind Turbines

Large-bodied Birds

Our search radius included 84.7% of the carcasses of large-bodied bird species determined to be killed by wind turbines or unknown causes (Figure 2-9A). Of these, 75% were located within 42 m of the tower. The mean and standard deviation of these 468 distances was 31.1 ± 30.0 m. Most carcasses were found northeast of the tower, and a considerable number were located southwest of the tower (Figure 2-10A).

Carcass locations of large-bodied bird species differed significantly by distance from wind turbines according to five ranges of tower heights (ANOVA $F = 3.66$; $df = 4, 456$; $P = 0.006$), and post-hoc LSD tests revealed that fatalities were located farther from 25-m and 32-m towers (means = 33 m and 57 m) than shorter towers (mean = 28 m for 14-m towers, and 26 m for 18.5-m towers) or 43-m towers (mean = 28 m). Distance from tower increased with tower height, according to linear regression analysis, although the precision of the model was poor (Figure 2-11A).

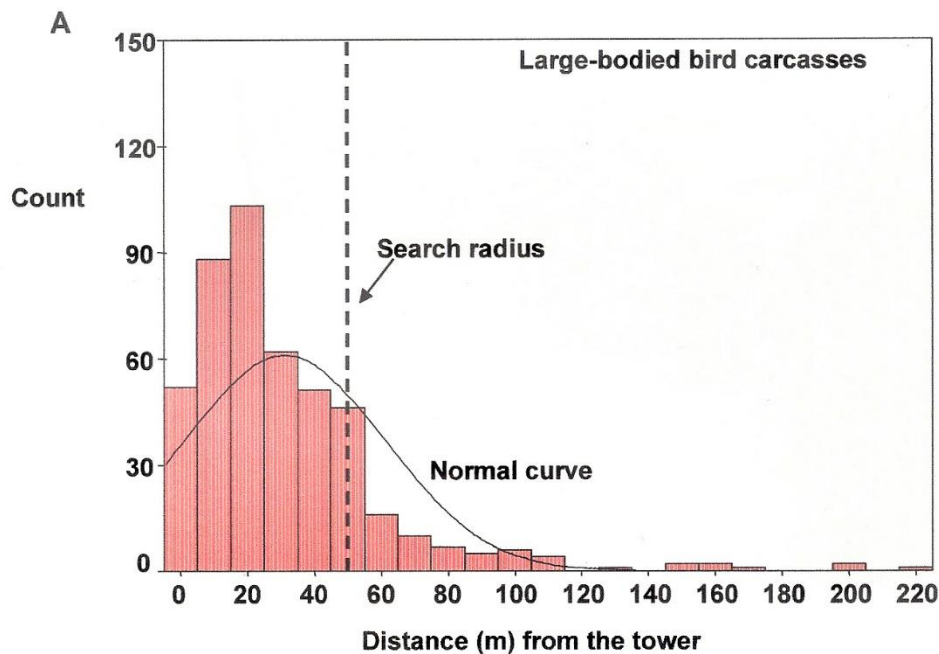


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The graphic below should be noted by all. It was produced from Altamont decades ago. It shows the carcass dispersal recorded in relation to the small turbines in use at Altamont at that time. These were turbines 60-100 feet tall and had blades about 8 meters long.

The search area size of 120 by 130 meters, which was selected for the Maple Ridge Studies, has been superimposed in blue on the carcass dispersal graphic from 1992. As anyone can see, the search plots used for Maple ridge probably would not have even found or reported all these Altamont carcasses.

Wind turbine carcasses distribution from Altamont pass around small turbines. Most of the carcasses found were reported far beyond turbine blade lengths.

Prepared for the:

Planning Departments of
ALAMEDA, CONTRA COSTA and SOLANO Counties
and the CALIFORNIA ENERGY COMMISSION
Grant #990-89-003

Prepared by:

BoiSystems Analysis, Inc.
Tiburon, CA

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Anne Flannery

*Wind Turbine Effects on Avian Activity,
Habitat Use, and Mortality
in Altamont Pass and Solano County
Wind Resource Areas
1989-1991*

*Final Report
March 1992*

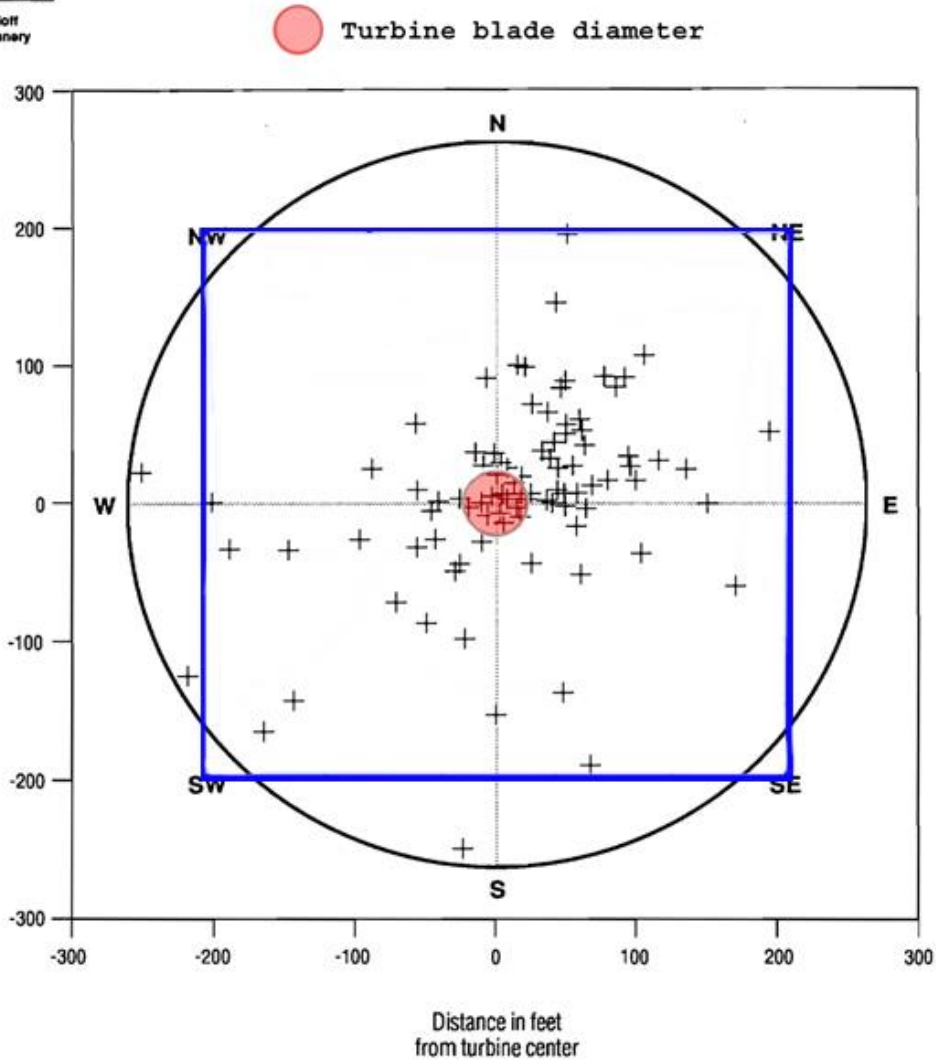


Figure 3-22. Locations of mortalities in relation to turbine centers.

For the Maple Ridge mortality studies, a search area size of 120 meters by 130 meters may have been acceptable for much smaller turbines at Altamont, but here it was many times too small. Then with this study methodology researchers had the nerve to calculate carcass totals out to 90 meters when 81 % of

the outer reaches of their declared study area (beyond 60 meters) were not even looked during this study. It is also no surprise that the Maple Ridge Study reported no birds or bats carcasses in the search area annulus of 80-90 meters because searchers during this study, only looked at about 1.5% of this total area or just 90 square feet, 80-90 meters out per turbine. This study by design, missed most of the carcasses.

MAPLE RIDGE WIND POWER AVIAN AND BAT FATALITY STUDY REPORT – 2008

Figure 12. Examples of searched towers showing searchable area divided into concentric annuli.

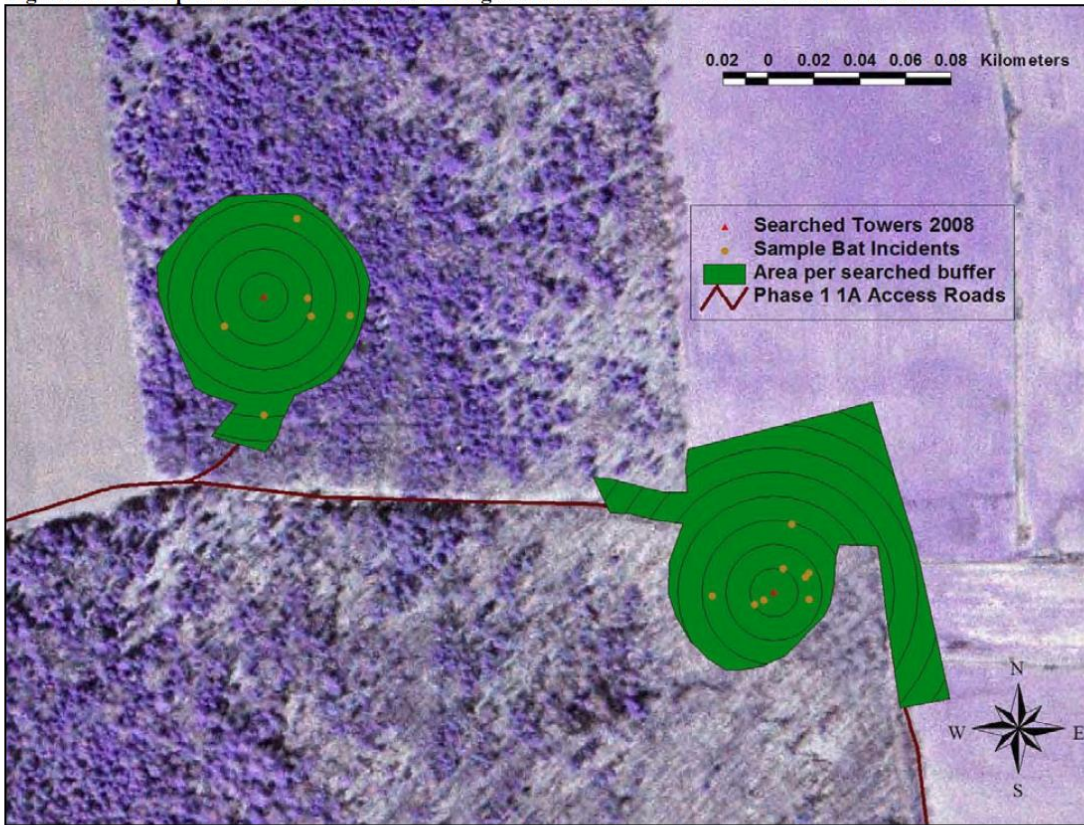


Table 13. Area Adjustment Factor (bird and bat incidents from standardized surveys conducted from April 30 to November 9, 2008 (not including 'added incidentals').

Below are the totals given for the areas searched at different distances for all 64 turbines.

Table 9. Number of incidents (Birds) versus total area searched per 10m distance annulus at 64 searched sites, April 30 to November 14, 2007.

Buffer	Area Searched	Bird Incidents	Bird Incident Density
0-10	20004	9	0.00045
10-20	60010	9	0.00015
20-30	98736	5	0.00005
30-40	132303	6	0.00005
40-50	144686	10	0.00007
50-60	153565	6	0.00004
60-70	123132 ●	4	0.00003
70-80	52701 ●	2	0.00004
80-90	5771 ●	0	0.00000

**60-90 meter annulus
Total area for 64 turbines
approx. 940480 sq meters**

**Total area searched - 181604
Total of area not searched - 81%**

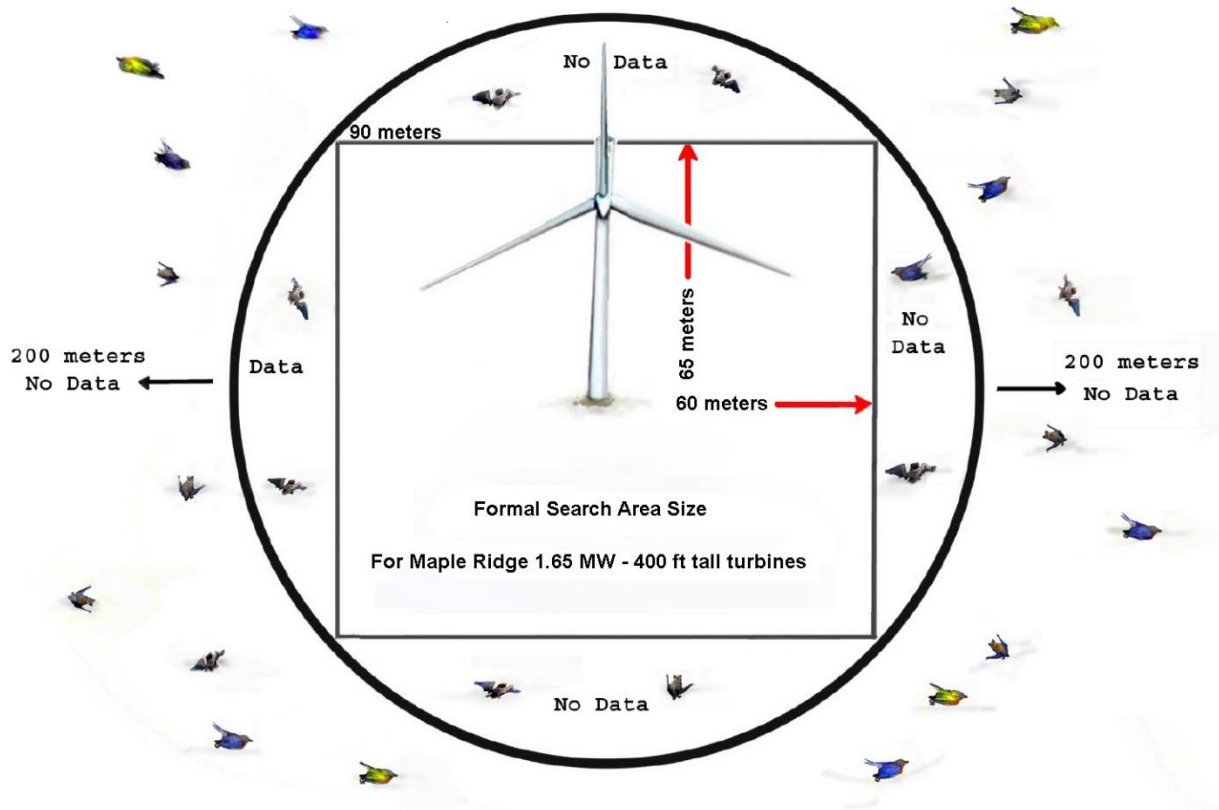
Table 10. Number of incidents (Bats) versus total area searched per 10m distance annulus at 64 searched sites, April 30 to November 14, 2007.

Buffer	Area Searched	Bat Incidents	Bat Incident Density
0-10	20004	18	0.00090
10-20	60010	55	0.00092
20-30	98736	45	0.00046
30-40	132303	43	0.00033
40-50	144686	23	0.00016
50-60	153565	13	0.00008
60-70	123132 ●	4	0.00003
70-80	52701 ●	1	0.00002
80-90	5771 ●	0	0.00000

**80-90 meter annulus
Total area for 64 turbines
approx. 353800 sq meters**

**Total area searched - 5771
Total of area not searched - 98.5%**

How square search plots produce deceptive wind turbine mortality data



For a turbine this size, most carcasses can be expected to fall beyond 60 meters.

The Maple Ridge wind farm study declared 120 by 130 meters rectangular search areas and then produced calculations for a circular area out to 90 meters. But searchers only looked at a total average search area size of about 60 meters out from towers. By no surprise, this study reported no carcasses in the search annulus of 80-90 meters because searchers only looked at about 1.5% of this total area. Missed data leaves nothing to calculate.

The average recorded bird carcass distance for Maple Ridge was 42.5m. The average recorded bat carcass distance was 25.9m. When thousands of turbine carcass have reported distances in the range of 2 times the length of a turbine's blade, these Maple Ridge 400 ft turbines, having 41-meter blades are not possible.

An inconsistent and disturbing revelation

By the time the Maple Ridge study got underway, another mortality study in California was already being conducted in California, by some of the very same people involved with New York's Maple Ridge fatality study.

Post-Construction Avian Monitoring Study for the Shiloh I Wind Power Project Solano County, California

Prepared by:
CURRY & KERLINGER, LLC

Paul Kerlinger, Ph.D.
Richard Curry, Ph.D.

Curry and Kerlinger, L.L.C.

“EXECUTIVE SUMMARY

The Shiloh I Wind Power Project Area is situated on roughly 6,800 acres of agricultural land in the Montezuma Hills, near Rio Vista in Solano County, California. The project consists of 100 wind turbines rated at 1.5 MW each for a total capacity of up to 150 MW. All one hundred turbines went on-line in March 2006.”

“The hub height of each wind turbine is 65 meters (213 feet) and the rotor diameter is 77 meters (253 feet), for a total height of approximately 103.5 meters (339.5 feet) above ground level (AGL) when the rotors are in the 12 o'clock position. At the 6 o'clock position the tip of the rotors are approximately 26 meters AGL.”

The Maple Ridge turbines at 1.65 MW are 10% larger than the 1.5 MW turbines installed in California. The New York turbines are 60 feet taller and their rotating blades about 3 meters longer. In other words, being taller with longer blades, birds and bats hit by the Maple ridge turbines will be launched from higher elevations and catch more wind as they drift from towers. Bird and bats will sustain impacts sending them from further away from towers,

The Shiloh turbines had search areas that extended 105 meters out from towers and 50 turbines were searched. The Maple Ridge turbines had partial searches of areas around 64 turbines that amounted to

a total area about 60 meters out from towers. Total search area for the Shiloh study allowed for more than three times more search area per turbine area, **34636 square meters vs. 11300 sq meters** for the Maple ridge study.

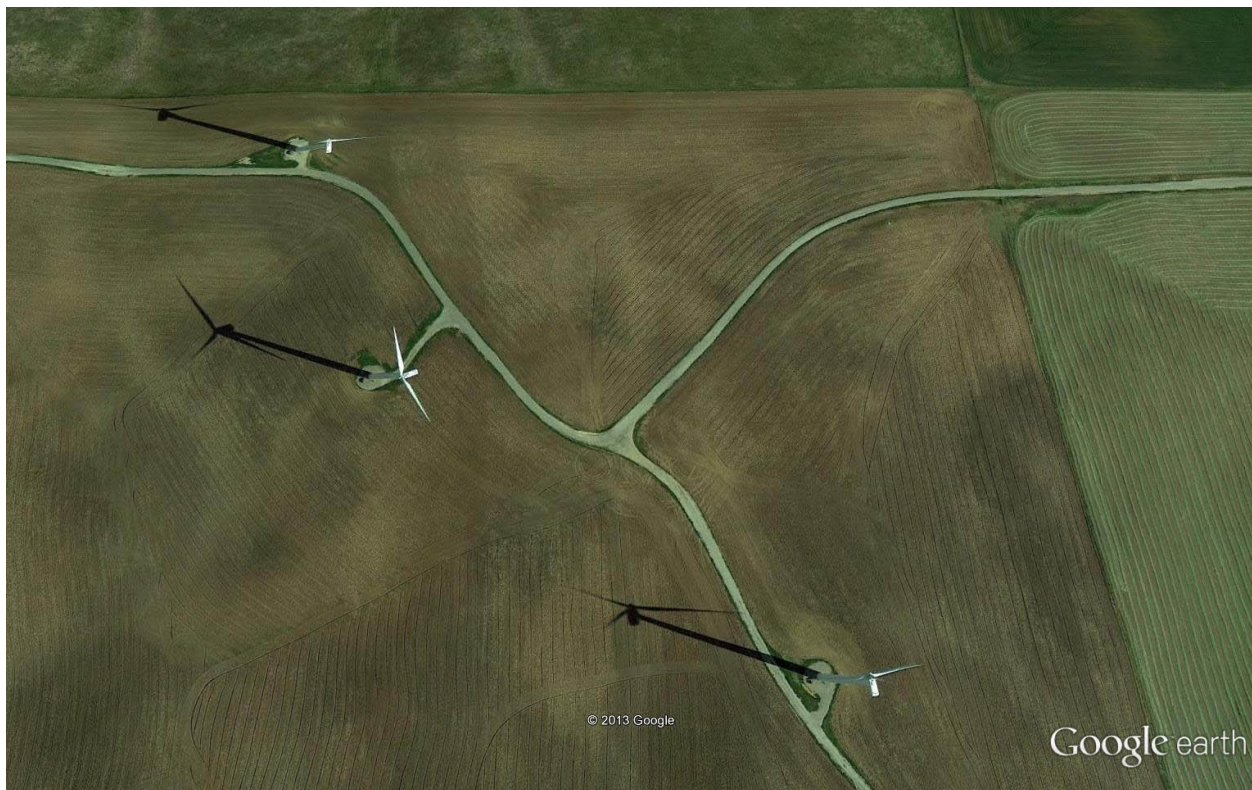
The 3-year Maple Ridge carcass searches began on June 17, 2006, the 3-year Shiloh Monitoring studies for carcass started over 2 months earlier on April 10 ,2006.

By the time the Maple Ridge surveys had begun, the Shiloh surveys had already recovered several carcasses at distances beyond 90 meters from towers. At the end of year one, **124 of the 225** turbine casualties reported from weekly surveys, **55 % were found beyond 60 meters. Sixty-one were found at 90 meters and beyond.** Had formal search areas been larger than 105 meters, many more turbine victims than 225 reported would have been found.

Also impacting this formal study, were intense farming practices taking place around these turbines.

“Where turbines and project roads are located the land use is rotating agricultural crops and grazed pastures. Crops include wheat, barley, hay, safflower and fallow fields. A multi-year rotation is the norm with wheat, fallow, and grazing alternating being the regime used most often.”

Plowing the soil, dense crop growth and harvesting close to towers surely had a negative impact on the total carcass numbers found during searches. This impact was not discussed.



Mortality list- page 3 of 7

ID#	Report Date	Estimated Month Death	Species Name	Fatality /Injury	Species Group	Tower	Dist (m)	Deg (GN)*	Days Since Death
SH-053-07	2/15/2007	FEB	European Starling	Fatality	Passerine	C1	9	301	7
SH-153-06	12/5/2006	DEC	European Starling	Fatality	Passerine	C25	2	85	4
SH-116-06	10/12/2006	OCT	Golden-Crowned Kinglet	Fatality	Passerine	B14	80	81	4
SH-132-06	10/25/2006	OCT	Golden-Crowned Sparrow	Fatality	Passerine	A12	100	271	4
SH-137-06	10/27/2006	OCT	Hammond's Flycatcher	Fatality	Passerine	C5	19	173	1
● SH-001-06	4/10/2006	● MAR 06	Horned Lark	Fatality	Passerine	A12	102	248	14
SH-029-07	1/29/2007	JAN	Horned Lark	Fatality	Passerine	C8	95	10	7
SH-136-06	10/27/2006	OCT	Horned Lark	Fatality	Passerine	C8	72	262	4
SH-152-06	12/4/2006	NOV	Horned Lark	Fatality	Passerine	A22	100	296	7
SH-157-06	12/13/2006	DEC	Horned Lark	Fatality	Passerine	B7	71	48	7
SH-016-06	6/5/2006	JUN	House Sparrow	Fatality	Passerine	C4	5	118	1
SH-017-06	6/11/2006	JUN	Northern Mockingbird	Fatality	Passerine	E7	73	300	7
SH-006-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	91	180	7
SH-007-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	95	182	7
SH-008-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	102	181	7
SH-009-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	102	181	7
SH-010-06	5/15/2006	MAY	Red-winged Blackbird	Fatality	Passerine	B20	51	177	14
SH-011-06	5/17/2006	APR 06	Red-winged Blackbird	Fatality	Passerine	H10	61	136	30
SH-012A-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	E3	14	294	7
SH-014-06	5/24/2006	MAY	Red-winged Blackbird	Fatality	Passerine	A9	43	74	1
● SH-019-06	6/17/2006	● JUN	Red-winged Blackbird	Fatality	Passerine	D1	92	254	7
SH-019-07	1/23/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	80	248	7
SH-028-06	7/17/2006	JUL	Red-winged Blackbird	Fatality	Passerine	A6	0	38	7
SH-029-06	7/19/2006	JUL	Red-winged Blackbird	Fatality	Passerine	B7	96	154	7
SH-032-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	45	7	7
SH-033-06	7/26/2006	JUL	Red-winged Blackbird	Fatality	Passerine	B7	74	286	4
SH-033-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	55	10	7
SH-034-06	7/26/2006	JUL	Red-winged Blackbird	Fatality	Passerine	B4	0	38	4
SH-034-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	38	255	7
SH-036-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	56	113	7
SH-037-06	7/28/2006	JUL	Red-winged Blackbird	Fatality	Passerine	E7	99	340	30
SH-040-06	8/7/2006	UNK	Red-winged Blackbird	Fatality	Passerine	A6	22	220	UNK
SH-040-07	1/30/2007	JAN	Red-winged Blackbird	Fatality	Passerine	E7	106	294	7
SH-059-07	3/1/2007	FEB	Red-winged Blackbird	Fatality	Passerine	C1	52	346	7
SH-065-07	3/10/2007	MAR 07	Red-winged Blackbird	Fatality	Passerine	G2	93	237	4
SH-067-07	3/13/2007	MAR 07	Red-winged Blackbird	Fatality	Passerine	A23	2	284	4
SH-073-07	3/20/2007	MAR 07	Red-winged Blackbird	Fatality	Passerine	C1	3	240	4
SH-090-06	9/28/2006	UNK	Red-winged Blackbird	Fatality	Passerine	A24	66	12	UNK
SH-139-06	11/3/2006	OCT	Red-winged Blackbird	Fatality	Passerine	B18	63	310	7
SH-056-07	2/28/2007	FEB	Savannah Sparrow	Injury	Passerine	A9	90	176	1
SH-079-06	9/15/2006	SEP	Savannah Sparrow	Fatality	Passerine	B4	62	144	7
SH-159-06	12/14/2006	DEC	Savannah Sparrow	Fatality	Passerine	E3	1	68	4
SH-036-06	7/27/2006	JUL	Tree Swallow	Fatality	Passerine	C3	43	20	4
SH-046-07	2/5/2007	JAN	Tree Swallow	Fatality	Passerine	E3	99	48	7
SH-066-06	9/6/2006	AUG	Tree Swallow	Fatality	Passerine	C8	10	275	7
SH-037-07	1/29/2007	JAN	Tri-colored Blackbird	Fatality	Passerine	C6	100	284	7
SH-020-07	1/23/2007	JAN	Unidentified Sparrow spp.	Fatality	Passerine	C8	87	174	7
SH-135-06	10/26/2006	OCT	Unidentified Sparrow spp.	Fatality	Passerine	C13	86	112	7

● 60-90 meters
 ● 90 meters and above

With science, proper study design and adjustments are made when looking for the truth. The researchers involved with both the Maple Ridge and the Shiloh study, knew over half the carcasses were flying past 60 meters at Shiloh's 1.5 MW turbines. Small birds were being smashed nearly 3 times further out from towers than those reported killed around Altamont's small 100 kW turbines. Some were inadvertently found out to 200 meters even though this area was not being formally searched.

Yet no changes were made to expand formal search areas in either the Maple Ridge or Shiloh 3-year studies. Nor were there any new (more than appropriate) mathematical adjustments to account for the many long-distance carcasses obviously being missed.

Instead of making logical suggestions or adjustments to either of these 3-year studies, I found changes like this

“The March 2007 golden eagle incident was wrongly included as a turbine incident in the Year 1 report but moved to “incidental” in this report as it was found outside the search area.”

When comparing these two studies, the Shiloh carcass searches beyond 80 meters from towers, looked at about 15000 sq. meters per turbine, the Maple Ridge study about 90 sq. meters per turbine.

Both of the studies I have I discussed here were flawed for various reasons and both underreported turbine mortality. Of the two, the New York Maple Ridge study was more severely flawed. This study clearly concealed far more mortality, with grossly undersized search areas, deceptive search methodologies and inappropriate calculations.

Wind energy studies are not scientific.

Conclusion

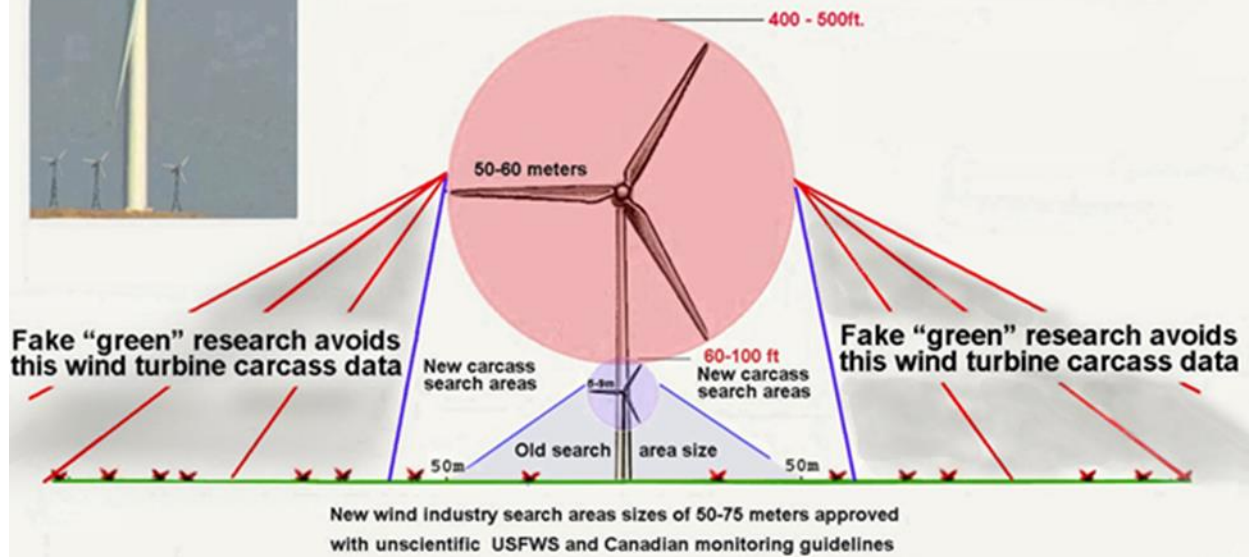
In all my Fountain Wind comments are very clear reasons why **Shasta County must reject the flawed, nonscientific wildlife impact studies and opinions used in this EIR.** If had the desire, I could easily write with confidence and clarity, several thousand pages, pointing out the endless flaws in this green industry's hundreds of studies.

Below in the two images, is primarily what took place with the fraudulent Hatchet Ridge mortality research conducted around some of this industry's new generation turbines. If less mortality data is needed for developers and stakeholders, then by all means create bogus study methodologies that collect fewer dead birds and bats.

Unscientific and Deceptive Wind Energy Research



For 25 years the industry used 50 meter search areas around 40-100 kW wind turbines. It was also determined that 85% of the carcasses could be found in a 50 meter area around these small turbines. New methodologies and meaningless regulations have allowed search areas to proportionally shrink by up to 150 times



Why did Shasta County accept Hatchet Ridge study methodologies that used carcass searches out 63 meters from turbines, when carcasses can be found out to 250 meters or more with regularity around 400 ft. turbines?

I happen to know the answer. It's for the same reasons I was not provided the names of the people that responded to my DEIR comments.

Is it scientific or credible to expect similar carcass dispersal distances from these wind turbines?



It is with wind energy research. With voluntary guidelines and self-reporting.....No science, ethics or truth are required.

As for describing the mortality impacts to expect from these turbines, the DEIR and FEIR are basically an organized effort in deception with a few sprinkles of truth. **Keep in mind with these comments, I've primarily discussed the fraudulent eagle impact information. But the Fountain Wind DEIR did not present the truth about what will happen to many other species, like the creek dwelling the red shouldered hawks and pygmy owls that will be wiped out by this project.**

The Fountain DEIR presents the illusion that Hatchet Ridge turbines have had little impact to species and with this new project, similar impacts can be expected. This statement is partially true but also very deceptive. **Similar impacts that have been hidden from Supervisors and the public can also be expected,** except with

turbines 300 ft taller, much longer blades and with much faster tip speeds, impacts will be far worse.

If there are any doubts about my expertise or the accuracy of what I have written, I would welcome an open discussion in front of Shasta County Supervisors, along with any number of wind energy experts present. We could discuss the merits of the DEIR, the species habitat abandonment around wind farms, the hidden mortality impacts, the nonscientific research and the wind industry's eagle morgue also known as the Denver Eagle Repository.

Jim Wiegand

Lakehead CA

530 2225338



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www.motherlode.sierraclub.org/shasta

June 12, 2021

Shasta County Department of Resource Management, Planning Division
1855 Placer Street, Suite 103
Redding, CA 96001

Attention Lio Salazar, Senior Planner

Subject: Comments on Final Environmental Impact Report (Draft EIR) for Fountain Wind Project (Use Permit 16-007) to be considered by the Shasta County Planning Commission on Tuesday, June 22, 2021

Representatives of the Shasta Group of the Sierra Club have made a partial review of the Final EIR. Our group represents over 1100 members in Tehama, Shasta, Siskiyou, Lassen and Modoc Counties that will be directly affected by the proposed project. Our comments submitted on October 15, 2021 for the Draft EIR were labeled incorrectly in the Final EIR on Table 2-1 which made it very difficult to find where they were located. Responses to the Sierra Club comments and numerous comments from other individuals and groups have led our group to conclude that this project is not appropriate for this site. Although the Sierra Club supports all forms of renewable energy, each project must meet appropriate site and mitigation criteria. Due to many significant impacts of the Fountain Wind Project our Shasta Group does not support the development of this project. This is not an appropriate site for a large scale wind-generated electrical power project.

The following are comments on the Final EIR.

1. Overhead power lines should not be constructed anywhere on the project site or connected to the PGE substation. The underground technology is common and used for many high voltage systems throughout big cities and near substations in Redding. The Project should be required to put all power lines of all types underground to reduce bird perching sites and bird deaths.
2. Page 2-71. The post construction mortality monitoring plan (PCMM) should begin observing for bird mortality once the turbine blades have been installed, not beginning of commercial operation which could be at least a year or two after the first impacts .
3. Page 2-62. A Technical Advisory Committee (TAC) should be formed and costs paid by the Project Owner for meeting 2-4 times per year and for County administration and TAC meeting expenses. This is the best method of providing independent scientific review of mitigation measures, bird kill data, and adaption of actual climate conditions as they change over time.
4. Use of bird carcass detection dogs should not be made optional, but should be a required part of all bird carcass detection.

5. There is no department at Shasta County that has the expertise to review any of the Project mitigation measures. The County needs to have scientists on call to review all documents from the Project. Who will review and do the field implementation monitoring of the Mitigation Measures during and after construction. The Final EIR should include a much improved description of funding set aside for mitigation and hiring of scientists to oversee compliance with mitigation measures during construction and operation periods.
6. Having the Project Owner oversee compliance with mitigation measures is just like the fox watching the hen house. An independent consultant should be retained by the County, funded by the Project Owner, to oversee all required mitigation measures.
7. Only 3 years of monitoring are required for the Applicant-designed post construction mortality monitoring (PCMM) plan. As Climate Change occurs, continued monitoring beyond the initial 3 years is completely appropriate given heat-induced changes to bird habitat, water sources and animal migration to more suitable climate. Adaptive management requires making changes to monitoring programs and frequent review of site conditions and bird death results. This review should be done by a TAC to insure the changes are scientifically analyzed and appropriate changes in operation of the site made.

The County Planning Commission should not adopt a statement of overriding considerations because the benefits of the Project to the public do not outweigh the significant unavoidable adverse environmental consequences.

Respectfully submitted,

A handwritten signature in cursive script that reads "John Livingston".

John Livingston
Chair of the Executive Committee of the Shasta Group of the Sierra Club

Paul Hellman-Director
Shasta County Planning Commission
Planning Commission Secretary
Leo Salazar
1855 Placer Street, Suite 103
Redding, California 96001 6/13/21

Dear Planning Commissioners:

You will soon have before you a project proposal (the Fountain Wind Generation Project) with dire consequences for Shasta County and its citizens. Let me explain:

Why am I concerned with this project?—I was the former Forest Supervisor of the Shasta Trinity National Forest located adjacent to this project. My experience in these matters—I have been responsible in the past for over 10 million acres on 6 National Forests in 3 states. I was on the planning Staff for the Chief of the Forest Service in Washington DC, a Senate Senior Fellow and advisor to the Chairman of the Energy and Natural Resources Committee for 2 yrs. and for 15yrs on the cadre instructing Senior Managers of Forests, National Parks and Bureau of Land Management lands from the US, Canada and Mexico in Fire and Resource management.

Wildfire:

My main concern is the effect on wildfire suppression and protection of the adjacent communities. I have served as Fire Team Fire Behavior Officer and Planning Chief on numerous large fires across the nation.

This Project sits in and around a dense stand of young conifers forming continuous horizontal and vertical (ladder) fuels. It is bordered on the West and North by Highway 299 a busy and sometimes emergency route for I-5 with a high potential for vehicular accident. It is bordered on the North and East by many intermingled structures from Big Bend to Moose Camp. The most devastating fires in this area come from the North East during strong gradient winds.

The Project is an absolute **design for disaster** for at least 3 communities and the many homes scattered adjacent to the project.

This County has recently experienced 2 deadly and costly fires, the Carr fire and the Zogg fire.

The proposal sets up a condition that cannot be mitigated with 72 towers and blades reaching to 679' scattered along ridge tops and over 30,000 acres. It combines with numerous existing major distribution power lines nearby. This will virtually eliminate the option for using fixed wing aerial attack over a broad area making these immediately adjacent communities and scattered homes indefensible from fast moving wildfire.

The project sets up a "No Fly Zone" for all initial and sustained attack for fixed wing aircraft. As Plans Chief's I would never assign fixed wing aerial attack in and around this project. I would have great reservations even putting helicopters in the same area with up to 72-679' high towers and powerlines scattered along the key ridges so essential for stopping wildfires.

Let me explain further:

Stated in the EIR, "due to the height of the turbines, construction and operation of the Project **could** interfere with aerial firefighting operations, a potentially significant impact." This statement should say " **WILL** interfere."

Believe it or not the Draft EIR mitigates this by "providing GIS files or other maps of the Project to CAL FIRE". Can you imagine trying to make a drop (which, to be effective should be below 150 feet) in or around this project in smoky, windy conditions using a GPS or map of 72-679' towers scattered all over the 30,000 acres!

The EIR preparers set up their justification by referring to what they call "some research". They quote from a 2015 Commonwealth of Australia hearing-a local Australian county fire official that wind turbines "do not cause aircraft concern".

They fail to mention in the **same paper** that the Aerial Agricultural Association of Australia (AAAA) (the main fire fighting pilot association) "believes that wind farm developments and especially wind monitoring towers are posing an **unacceptable threat** to aviation safety and especially

aerial application'. Further this paper says "Clearly these structures will impact on the operations of aircraft involved in aerial firefighting..." And the paper **concludes** by stating—"the committee has received evidence suggesting that the rural fire services across the country have not properly considered these issues" and goes on to cite a fire (Cobbler Road fire) "that would not have been able to be controlled if wind turbines had been installed at the top of the range."

Our Associated Aerial Firefighters have reviewed the Proposal. Their reaction is that it is an **unworkable** and **very unsafe** proposal. I hope you will listen to their testimony.

It couldn't have been made more clear this past year how absolutely critical it is to have fixed winged bombers to help save lives and communities.

Finally, there was a headline article in the December 11th Record Searchlight about Shasta County filing suit against PG&E to recover costs incurred from the Zogg Fire. As the Commission and Board consider the funds this project will bring to the County, I hope you will also weigh the costs incurred from the Carr and Zogg fires and the potential costs, liability and **LOSS OF LIVES** that could result from your decision on this **DESIGN FOR DISASTER**.

Aesthetics:

The EIR correctly states that "the project would, unless mitigated have a substantial adverse effect on the scenic vista or substantially degrade the character or visual quality of views from publicly accessible vantage points. (Significant and Unavoidable)

Over the years, as manager of much of the land and resources in Shasta County, I have reviewed many proposals that could possibly impair the scenic beauty of the area and subsequently the economy. I cannot imagine a project more impactful to longterm visual quality of the county to the visiting recreating public.

Mitigating these swirling 679' giants interrupting our landscape views will simply be impossible.

The Draft EIR did not consider that Shasta County is the gateway and hub for recreationists venturing out into the great scenic forests in Northern California. This scenic attraction is one of the keys to the stability of the economy of our County.

In Shasta County two of the four scenic routes into the forest have been essentially destroyed by fire. They will take 20 plus years to recover to former beauty.

This project will severely degrade one more route (highway 299 east) leaving only Highway 44 unscathed. Those traveling to the county's outstanding recreation attractions like Burney Falls, Hat Creek and Lassen NP and the Pacific Crest National Scenic Trail will be severely impacted. Additionally, this project will be in view of several candidate scenic highways and the National Volcanic Scenic Highway, and the Pacific Crest Scenic Trail. As stated in the EIR, It will violate scenic elements SH 1, SH2, SHa of our County General Plan.

Please remember, that the County General Plan sets "preserving quality of life, especially in rural areas" and "safety of citizens and communities" as its paramount precepts. Therefore, the Commission must reject the proposed project and permit.

Thank you for your consideration,

/s/

Stephen Fitch
Shasta-Trinity Forest Supervisor (retired)
530-347-0071
svfitches@yahoo.com