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From:
Ken Mierzwa
PO Box 1125
Ferndale CA 95536
ken.mierzwa@gmail.com

To:
Humboldt Wind Project Planner
County of Humboldt
Planning and Building Department, Planning Division
3015 H Street, Eureka, CA 95501
CEQAResponses@co.humboldt.ca.us

Thank you for the opportunity to comment on the proposed Humboldt Wind Project Draft Environmental Impact report (DEIR). The following comments are based on my personal field experience in Humboldt County as well as 12 years professional experience with the California Environmental Quality Act (CEQA) including preparation of portions of numerous CEQA documents, and nearly 30 years experience with the Endangered Species Act, Clean Water Act, and other relevant federal regulations related to environmental review.

General Comments

- I concur with the finding that the No Project alternative is the environmentally superior alternative. All other proposed alternatives have numerous significant impacts, including some which the DEIR acknowledges cannot be mitigated to a level of less than significant and thus would require a statement of overriding considerations. I do not recall ever reviewing another DEIR with so many impacts which cannot be mitigated to less than significant despite having been involved in several large and complex CEQA projects.
- A number of supporting studies are incomplete and ongoing or are inadequate, and little information is provided on some portions of the project area such as the gen-tie corridor or the 101 bypass ramps; a few specific examples are provided below. Clearly the project and DEIR preparation has been rushed. It is not possible to complete an adequate environmental review with the level of information provided in this DEIR. Ongoing studies should be completed, missing studies should be initiated, and the DEIR updated and recirculated.



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- The project description is incomplete and inadequate, and provides little detail on some portions of the project such as the gen-tie corridor and the 101 bypass ramps. Some portions of the project have apparently been updated based on comments in public meetings, for example TerraGen stated at a Ferndale meeting that transmission lines would go over the Eel River at Stafford rather than under the river as described in the DEIR. Many other items reported in the media or stated by TerraGen at public meetings contradict elements of this DEIR. Thus the DEIR should be updated to reflect any and all updates to the project description, resolve contradictions, all aspects of the project should be explained in detail, and the updated DEIR recirculated with a coherent and current project description.
- Numerous mitigation measures are not explained in detail, and in many cases it is stated that the mitigation measure will be drafted at a future time. This is unacceptable, especially when the mitigation measure is the basis of a less than significant after mitigation statement. It is impossible for the reasonable reviewer to determine whether these findings are accurate when the full mitigation measure has not yet been provided except as a vague concept to be worked out later. Each proposed mitigation measure should be fully developed, explained in detail in an updated DEIR, and the updated DEIR recirculated.
- The phrase “if feasible” should be globally removed from all proposed mitigation measures. A mitigation measure cannot be used to reduce the significance of an impact if the mitigation is optional.
- A detailed decommissioning plan and financial assurances should be included in an updated and recirculated DEIR. Would decommissioning require re-clearing and widening of the “temporary” impacts to access roads? What would be removed or not removed from the site? Decommissioning is by definition part of the project, yet the potential impacts of decommissioning are barely addressed at all in the DEIR.

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Aesthetics

This section of the DEIR consistently underestimates visual impacts related to the proposed project. The approach seems to be to qualitatively and arbitrarily downgrade each location by one level to assess the change from no project to with project. However, any reasonable observer would know that construction of up to 60 towers, each up to 600 feet tall (the height of many tall urban buildings) within a predominantly rural landscape would be a jarring and permanent visual change. Bringing a large-scale industrial project to a remote rural landscape should not be taken lightly. Residents would see this changed landscape every day, it would also be obvious to visitors and tourists who often are in search of less developed open space.

As a frequent business traveler, I have encountered wind turbines in landscapes as diverse as Altamont Pass and rural central Indiana; I do not find them attractive in

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any way and have yet to observe a thriving residential community that has grown or persisted in proximity to large turbine complexes.

The photographs provided in this section are also misleading. As an experienced and published photographer, I find the images to be slightly overexposed, taken on a day with some haze and cloud cover which tends to obscure light colored objects, and at a focal length which does not well represent visual reality as perceived by the human eye. For example, the turbines in the mock-up images tend to be barely visible on the distant horizon. In reality, on June 8, 2019, a day with some haze and sparse cloud cover not unlike the condition of the mock-ups, I drove from 101 to Ferndale. An existing tower near the project area, much smaller than the proposed turbines was plainly and distinctly visible from Fernbridge and for the entire length of Hwy 211 to the Ferndale city limits. For much of this distance it was the only man-made structure visible on the Wildcat Hills from this distance.

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If this one structure is so visible (and even more so on a crystal-clear day), then up to 60 structures up to several times the height would be much more visible. In my opinion this would be a significant impact which cannot be mitigated.

The DEIR states that no locations south of the project area were modeled because intervening ridges screen the view. This does not account for trails within remote portions of Humboldt Redwoods State Park, including at the northern park boundary and north edge of Rockefeller Forest, and on Grasshopper Peak. While relatively few individuals experience the view from these remote areas which require several miles of hiking to reach, the individuals who do seek out these remote places tend to be in search of a wilderness experience and especially sensitive to degradation of visual character. Having hiked these trails, there are a number of locations from which the proposed project area is plainly visible. Visual impacts from these trails and other high points to the south should be modeled and included in a recirculated DEIR.

Air Quality

In places, the DEIR seems to only assess air quality impacts within the North Coast air basin. As the former NCUAQMD board chair, it is my opinion that the DEIR should address potential air quality impacts in all air basins possibly affected by the project, including those crossed by transportation corridors to bring in cranes, trucks, and other equipment from locations usually not disclosed in the DEIR; by the commuting from out of area of up to 300 workers, including both ground and air transport; and including barge, tug, and other water transport which is notorious for high emissions levels. Project-related impacts do not cease at some arbitrarily defined boundary if trips originate from other regions, and in urban non-attainment areas some impacts may be potentially significant.

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Biological Resources

This section of the DEIR is incomplete, inadequate, and often based on studies which have not yet been completed or in some cases even initiated. Specific examples follow.

- Northern Red-legged Frog (SSC) is quite common in much of near coastal Humboldt County and this abundance is not acknowledged in this section. NRLF is frequently encountered in residential backyards, pastures, riparian areas, and a wide variety of other habitats. Contrary to the statement that habitat is “marginal” at the Hookton bypass, NRLF is abundant around man-made and man-modified wetlands within the NWLR and within 0.25 mile of the proposed bypass, and the species frequently inhabits roadside ditches including some along Hwy 101. In the absence of adequate surveys, the species should be assumed present in much of the project area and especially in areas within 5-10 miles of the coast. Small numbers of individuals have been observed as far inland as just west of Alder Point Road (pers obs), although the species is less widespread inland.
- Western Pond Turtle (SSC) is common in the Larabee Creek drainage including in stock ponds well away from any stream. A few individuals have been observed on land in late spring at a considerable distance from any permanent water and including on steep ridge slopes. Almost all of the project area is seasonally warm enough to support turtles. Presence is possible in more of the proposed project area than is acknowledged in the DEIR.
- Construction Impacts. The DEIR represents construction impacts as temporary, and only the “permanent footprint of project components” as permanent. While the DEIR acknowledges that some of this temporary impact would be maintained and not restored and thus would result in habitat degradation, Table 3.5-9 identifies only permanent and temporary impacts. The table should also identify acreage of habitat degradation as defined in the text since it is inaccurate to consider these as temporary impacts, and all impacts which would last for years to decades (the life of the project and beyond), including decades of recovery time for some habitat types such as forests of riparian, should be fully assessed. As presented, the table and the resulting analysis are flawed and do not represent reality especially considering the large area of impacts.
- The so-called temporary impacts addressed in the bullet above need to be further quantified for temporal lag. The DEIR identifies 464 acres of “temporary” impacts to “forests and woodlands.” What is the average and maximum age of these forests? How extensive are stands of more mature forests, and where are they located within the project area? Removal of

forests can take decades to a century or more to replace, depending on the age of the impacted areas. This seems to be stretching and obscuring the definition of “temporary” and this impact should be explained, quantified, mapped, and acknowledged in a recirculated DEIR. Added to the 90 acres of permanent forest and woodland loss, this impact is significant and the current document does not advance any credible means of mitigating this substantial temporal lag. Temporary impacts should be clearly defined in the document; for example the State of Georgia defines temporary impacts as those which recover full function within seven years of construction. The DEIR appears to lump impacts which would take months (non-native grasslands) to many decades (forests) to recover full function all as temporary, and this approach is flawed.

- Protocol-level habitat mapping, to alliance level, should be completed to identify any remnant native grassland alliances present. For example, *Danthonia* communities are not unusual in near-coastal areas of Humboldt County. Native coastal prairie communities are not easily restored or mitigated and often require a commitment of years and this is not currently acknowledged in the DEIR. Mapping should be completed and presented for the entire project area and for all native alliances.

There are numerous concerns with bird and mammal impact analysis and mitigation. Specific comments follow.

- 3.5-70 to 71 Operational Impacts. How would compliance with APLIC limit wildlife collisions and other impacts? This is not adequately explained, and cannot easily be assessed by the reader without additional information. This section also acknowledges “uncertainty” and that “effectiveness of prevention mechanisms is not yet well established.” In light of this text, the statement above that operational impacts will be limited is contradictory or at least unsubstantiated.
- 3.5-71 Marbled Murrelets. The study cited for Bear River Ridge radar studies appears to be more than 10 years old, and does not account for logging or other landscape alteration since then. Detailed results of radar studies completed for this project should be included in a recirculated DEIR.
- Shifting the transmission line to avoid old-growth habitat is admirable. However this appears to address only direct impacts and the distance to the impact is not identified. The effects of fragmentation and creation of new edge habitat in proximity to old growth should be analyzed.
- Mitigation Measure 3.5-1a. Inclusion of the phrase “to the extent feasible” effectively negates this mitigation measure, since it does not commit to full avoidance of mature conifer forest habitat. Postponing identification of final

impact areas until preparation of final grading plans could result in unmitigated impacts. The DEIR acknowledges that buffers of up to 0.25-mile could be necessary to minimize risk of some types of impacts, and as written these buffers could be removed if avoidance is later determined to be “not feasible.” Who makes this determination, and if buffer is removed how is it mitigated?

- Mitigation Measure 3.5-1b. Again, the phrase “in the event the buffers cannot be maintained” is present. Is the applicant committing to avoid buffers, or not? Further, the document states that “if implementation of the buffers described above is infeasible, the project applicant shall consult with CDFW and USFWS regarding an alternative buffer size. Mitigation measures are meaningless if there is no commitment, and if project changes require subsequent additional mitigation to offset then it has not been analyzed in this DEIR. Mitigation measures should be fully developed, and the DEIR recirculated with the updated measures and analysis.
- Impact 3.5-1 is stated to be “less than significant” after mitigation. I disagree, given that portions of the mitigation proposed are conditional on yet to be determined feasibility. Without a full commitment to avoid mature conifer forest or other murrelet habitat and full surrounding buffers, this impact is significant.
- Impact 3.5-2. This section appears to be based largely upon untested assumptions and thus the analysis is flawed.
- Marbled Murrelet Compensatory Mitigation. The applicant proposes to mitigate take of marbled murrelets by “establishing a corvid management program in Van Duzen County Park. “ This proposed mitigation measure is inadequate to the level of absurdity. Other past projects in Humboldt County, most of them relatively small, have proposed similar measures as mitigation for marbled murrelet, western snowy plover, and other avian impacts. I am unaware of an instance where USFWS accepted corvid management as a stand-alone mitigation measure and typically at least several additional measures were included. If it were as simple as putting a few lids on garbage cans, marbled murrelets would have been fully recovered decades ago. Since the DEIR acknowledges that “all major parks in California in the range of the murrelet now have corvid management programs” and the species remains at risk and indeed continues to decline, clearly this approach by itself is failing to fully offset other existing impacts. Adding an additional project with impacts will only worsen this situation. The measure also fails to account for existing activities around the county park, often on private lands which may or may not be attracting corvids; and does nothing to mitigate impacts in the area of direct take in the turbine construction area.

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- The Marbled Murrelet mitigation measure appears to be designed to offset only operational take in the form of a number of collisions based on a series of unsubstantiated assumptions. It makes no attempt to take into consideration the removal of over 550 acres of forest habitat, including linear transmission lines, access roads, and a vast amount of new fragmentation which will create ideal corvid habitat and allow corvids access to areas where they currently are less likely to occur in numbers. The large quantity of garbage created by 300 temporary workers and 30 permanent workers is also not accounted for here, and even occasional carelessness... or the mere presence of humans, if corvids are conditioned to associate humans with food... could attract numerous new avian predators.
- Suggesting that a corvid management plan in one county park can fully mitigate take of murrelets from construction, operational, habitat fragmentation, and other impacts is misleading and deceptive. The entire analysis leading to this conclusion is flawed and the excessively narrow focus fails to account for numerous interrelated factors crucial to murrelet population biology.

USFWS Arcata Field Office identifies on the marbled murrelet species profile on their web page

https://www.fws.gov/arcata/es/birds/MM/m_murrelet.html six short term and five long term recommended conservation actions as follows:

Short-term conservation actions:

1. maintain all occupied nesting habitat on Federal lands administered under the Northwest Forest Plan;
2. on non-Federal lands, maintain as much occupied habitat as possible and use the Habitat Conservation Plan process to avoid or reduce the loss of habitat;
3. maintain potential and suitable habitat in large contiguous blocks;
4. maintain and enhance buffer habitat surrounding occupied habitat;
5. decrease adult and juvenile mortality; and
6. minimize nest disturbances to increase reproductive success.

Long-term conservation actions:

1. increase the amount and quality of suitable nesting habitat;
2. decrease fragmentation of nesting habitat by increasing the size of suitable stands;
3. protect "recruitment" nesting habitat to buffer and enlarge existing stands, reduce fragmentation, and provide replacement habitat for current suitable nesting habitat lost to disturbance events;
4. speed up development of new habitat; and
5. improve the distribution of nesting habitat across the landscape

These focus on protecting existing occupied habitat, maintaining large blocks of contiguous habitat, maintaining and enhancing buffers, minimizing nest disturbances, increasing suitable nesting habitat, decreasing fragmentation, and improving the distribution of nesting habitat across the landscape. Only

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one item, decreasing juvenile and adult mortality, overlaps with the proposed DEIR mitigation measure and that only in part because the project does kill adults and barely begins to mitigate loss of nesting success. The project does nothing at all to address the other 10 proposed conservation actions, and instead adds to habitat loss and forest fragmentation and decreases buffer areas.

The project should include real mitigation measures patterned on the USFWS conservation actions, including long-term protection of existing nesting habitat, reforestation in locations where it will reduce forest fragmentation and at a ratio sufficient to offset both the permanent project impacts to forested habitat and the multi-decade temporal lag of “temporary” impacts.

- Mitigation Measure 3.5-2a. While this measure may slightly reduce the potentially severe impacts of fragmentation caused by the gen-tie corridor, it does nothing to actually offset those impacts. It is at best a minimization measure and by itself is not adequate.
- Mitigation Measure 3.5-2b. The area covered by mortality searches and the methods used should be clearly indicated in the DEIR. As written, this measure does not commit to specific measures and only states a willingness to prepare a plan at some unspecified future date.
- Mitigation Measure 3.5-2c. This measure provides few commitments beyond “prepare and implement a marbled murrelet mitigation plan to offset the anticipated level... of take.” Most of the items identified for inclusion relate to the corvid management plan which by itself is inadequate as stated above, and which should represent only a small percentage of the required mitigation. Only the proposal for buffer enhancement offers any real benefit, however the proposal is not extensive enough to offset project-related impacts especially given the decades-long and poorly acknowledged 464 acres “temporary impact” and 90 acres permanent impact of forest loss. Leaving additional mitigation measures to “adaptive management” is unacceptable and does not allow for a full and reasonable analysis of impacts as part of the CEQA process. As described above, additional and extensive measures based on USFWS recommended conservation actions should be added.
- Despite all the spin in the body of this section and the completely inadequate mitigation measures, the DEIR chapter author or editor deserves credit for making an appropriate finding of “significant and unavoidable” impacts. The chapter text should be updated to further explain that the proposed mitigation is not adequate to offset the impacts and has resulted in a finding of such, rather than only dwelling on the relatively minor and incomplete



mitigation measures proposed. Without a more balanced discussion the average non-scientist reader could easily be misled.

- Impact 3.5-4 Eagles. This section states that maintaining the gen-tie as grassland would provide additional foraging habitat for eagles. Immediately below it is stated that transmission lines pose a potential risk to eagles. If the project creates a potentially hazardous attractant this needs to be further analyzed and mitigated.
- Mitigation Measure 3.5-5a. Minimizing rodent populations to reduce eagle attraction, if effective, results in a further loss of eagle foraging habitat which is not fully acknowledged and contradicts the statement in 3.5-4. The mitigation measure could also have secondary impacts of its own, for example reducing prey base for fisher and other mammalian carnivores which is not noted or analyzed by the DEIR. Methods of controlling rodents are not identified; for example, use of poison or pesticides could have significant impacts on a wide range of species, and it is uncertain if other measures would be effective. This measure as written is far too vague to allow a full analysis of implications or effectiveness and additional detail should be provided in a recirculated DEIR.
- Mitigation Measure 3.5-5c. Retrofitting power poles is not an adequate form of mitigation. At best it very slightly reduces future risk of additional mortality; the project-related take still represents a short-term (direct mortality) and long-term (lost reproductive potential) loss of individuals, and does nothing to offset that loss. In any case, as explained immediately below, there is no state mechanism to allow such take to occur.
- Fully Protected Species. In addition to ESA, CESA, or other protections, several local avian species are listed as fully protected by the State of California. These include Bald Eagle, Golden Eagle, Peregrine Falcon, California Condor, and White-tailed Kite, all of which occur in the project area; the latter species is relatively common in the area. One locally present mammal, the Ring-tailed Cat, is also on the fully protected list. Although the DEIR acknowledges take of raptors, there is no legal mechanism for CDFW to issue an incidental take permit for these species. Impacts to these species are therefore significant and cannot be mitigated. Any take, even a single animal, would also constitute a violation of state law. The DEIR finding of less than significant is thus not accurate and should be updated.
- Northern Spotted Owl. Most larger projects in Humboldt County, including timber harvest plans and major developments, require protocol-level Northern Spotted Owl surveys. The County even requires cannabis permit applicants with large enough projects to require a stand-alone EIR to conduct such surveys. While protocol-level surveys are available for HRC lands, it

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appears that no such surveys were conducted, or at least have not been reported, for the gen-tie or for private lands. Given that there is not sufficient time to conduct such surveys prior to the proposed construction schedule, there is a high probability that owls are present in some currently undocumented locations and that unexpected impacts may occur. Relying on sometimes out of date or incomplete database results (private lands often have never been surveyed) is not an adequate means of documenting current distribution, as is evidenced by HRC's ongoing surveys on their own lands. As a result, there is not sufficient evidence, in the absence of protocol-level surveys over the entire project area wherever potential habitat is present, to support the DEIR finding of "less than significant." Considering the recent rapid decline of this species in northern California, potential impacts should be taken more seriously and assessed in much greater detail in a recirculated DEIR including results of protocol-level surveys throughout the project area.

- Mitigation Measure 3.5-7. Once again, the key phrases are present: "develop a map... (to) guide efforts to minimize habitat impacts during final design" and "minimize, to the extent feasible." Does the mitigation become optional if it's inconvenient or inefficient for the project? Who decides? This approach is unacceptable. Mitigation must be described in detail as part of a recirculated DEIR and there must be a commitment to actually implement the mitigation.
- Proposed protection of lands through purchase of conservation easements is structured with considerable temporal lag (two years after delivery of power). The mitigation ratio should reflect this temporal lag, and an independent third-party easement holder such as a land trust should be identified.
- While this Northern Spotted Owl measure may protect some existing populations, it does little to offset the effects of forest fragmentation, facilitating further invasion of barred owls through habitat alteration, etc. As written, there is insufficient documentation and insufficient mitigation to support the "less than significant" finding.
- Mitigation Measure 3.5-8. How does one "create" a Northern Spotted Owl? Of the two tentative measures listed, one (manage barred owls) is controversial, requires USFWS and CDFW approval and permits, and is at most a short term measure unless management is perpetual; the other (conservation easements) is laudable but at most protects the status quo (existing habitat), does nothing to offset loss from project impacts including logging of forests (90 acres permanent and 464 acres "temporary" but lasting for decades, and much of it potential NSO habitat) and does nothing to increase recruitment or reduce mortality. As written this is at best a partial measure, and because it leaves the ultimate approach up to negotiations at some future point in time it is unacceptable. The DEIR should be recirculated with expanded and

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complete mitigation measures including compensation for habitat loss and temporal lag. As written, there is not sufficient documentation or mitigation to support a “less than significant” finding.

- Raptors. Why are Northern Harriers “unlikely to nest” in the project area? Nesting has been documented on other recent projects in Humboldt and Del Norte Counties, and the species is relatively common over local grasslands during the spring and summer months.
- Impact 3.5-10. Seriously? Removal of 862.1 acres of potential special-status raptor habitat is a less than significant impact? I disagree, as I believe any reasonable individual would be likely to disagree.
- Mitigation Measure 3.5-11 is woefully vague and there is no serious attempt made to document effectiveness. Comparing raptor mortality at other sites is not comparable to a near-coastal site known locally for raptor diversity. This measure does not adequately compensate for loss of special status species.
- Because several state fully protected raptors are known to occur in the project area, there is no mechanism for CDFW to issue an incidental take permit. Any take of these species is a significant impact which cannot be mitigated. All take of fully protected species must be avoided.
- Consulting with agencies after three years to “evaluate any feasible measures that can be implemented” is not acceptable. Raptor mitigation measures should be fully developed and included in a recirculated DEIR.
- The finding of “significant and unavoidable” impacts to raptors is the correct one, to the credit of the chapter author.
- Mitigation Measure 3.5-14, non-raptor birds. How does footprint minimization, mortality monitoring, calculating detection probability, and reporting take get to a less than significant finding? There’s not an actual mitigation measure in there and only one of four is a minimization measure. The rest is reporting and paperwork and by itself does nothing to avoid, minimize, or mitigate impacts.
- Analysis of impacts to bats is based on acoustic surveys at ground level and (in a single location) at 40 feet above ground, and only on Bear and Monument Ridges. There is no data provided for bat activity at turbine height, or for the gen-tie or other project areas where habitat would be removed. Bat activity could differ at various heights, and different species could be present in warmer and drier inland locations. The analysis is flawed because of incomplete data.

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- Mitigation Measure 3.5-15. Bats. Strike the phrase “if feasible” wherever found. Even if the proposed mitigation measures are effective (which is questionable), they will be adequate only if there is a full commitment to implementation. Not avoiding a roost because it isn’t feasible is an unmitigated impact. Paragraph 4a, creating new cavities in existing trees, may be a secondary impact of mitigation if it kills trees or creates habitat utilized by competitors or predators, which is not analyzed in the document.
- Impact 3.5-16. Depending on time of year, this disturbance could result in excessive energy expenditures by bats with potential to cause some mortality. This potential impact should be assessed in greater detail and the finding re-evaluated.
- Mitigation Measure 3.5-18. “In the event the TAC finds that action is needed, the TAC shall strategically identify the measures that will most efficiently minimize impacts on the bat population.” This is unacceptable, and mitigation should be identified and provided in detail as part of a recirculated DEIR and not at some unknown future time in some unknown way.
- Mammals, Mitigation Measure 3.5-19e. Elsewhere in the document it says that operational areas will be managed to reduce rodent populations, which if successful would depress the prey base for some of the mammal species addressed in this section. Here, it says that revegetation and enhancement may occur. Explain the relationship of these two apparently contradictory strategies and reconcile how they could both be utilized.

Amphibians/Reptiles. In general, my impression is that the authors of the DEIR or supporting studies have a limited understanding of Humboldt County amphibian and reptile species. While the majority of the potential impacts are easily mitigated, the document is vague and in a few cases inaccurate. Specific comments follow.

- Northern Red-legged Frog habitat is mis-characterized on page 3.5-146. This species breeds primarily in shallow isolated emergent wetlands in Humboldt County, and it disperses widely outside of breeding season. Although vegetated streambanks may be occupied as foraging habitat, the species also utilizes small seeps, isolated puddles, damp upland grasslands, and upland forest. Individuals are most common near water but not at all limited to it. The suggestion that NRLF exhibits “little movement from streamside habitats” is not accurate in this region. The species is commonly present in pastures and even in residential yards and gardens throughout the year, and adults are often seen crossing roads during rainy season. This mis-characterization could influence the impact assessment.

- Impact 3.5-21. The proposed 300-foot buffer from aquatic habitat badly underestimates habitat used by Northern Red-legged Frog and Western Pond Turtle in Humboldt County, and seasonally (rainy season) may under-represent that used by other species as well. Northern Red-legged Frogs routinely breed in seasonal wetlands and disperse considerable distances the rest of the year, and near Ferndale they often occur at least 400 meters from the nearest water. In spring 2019 a Western Pond Turtle was found in an upland grassland on a steep slope nearly 0.5 mile from Larabee Creek (pers. obs.), and local ranchers report occasional turtle sightings well away from water. Individuals occupying isolated stock ponds suggest that some long-distance dispersal does occur. The related Blanding's turtle in the eastern US is known to move overland between multiple wetland activity centers up to at least 800 m apart.
- Mitigation Measure 3.5-21c. Survey methods are not adequately defined. For example, the most efficient way to survey for tailed frogs and torrent salamanders is to sample streams for larvae which is not addressed. Different species are most active at different seasons, also not addressed.
- Mitigation Measure 3.5-21e. This measure does not appear to be tied in any way to the primary threats to Foothill Yellow-legged Frog, which include flow alteration among other things. Merely preserving habitat through conservation easements is of questionable value if impacts continue to occur upstream.
- There is no mitigation measure for Northern Red-legged Frog, which is the most likely special-status amphibian species to be encountered in the project area. What happens if a breeding wetland is within the construction footprint? The species is abundant at Humboldt Bay NWR including less than 0.25 mile from the proposed Hookton bypass, and it may occur in the ditches and riparian habitat within the proposed work area and in stock ponds on the ridges, however it appears no work has been done in the transportation corridor or some other parts of the project area. At certain times of year frogs are quite common on the NWR and breeding could occur in the ditch along 101.
- There is no discussion of actions if invasive species (bullfrogs) are encountered, or on the risk of chytrid fungus spread (no measures to decontaminate boots/nets of biologists conducting surveys or equipment working in streams or wetlands). There is also little discussion of preventing sedimentation in headwater streams, which is a potential major impact on tailed frogs, torrent salamanders, and foothill yellow-legged frogs.
- There is no discussion of the impacts of installing culverts and rock within stream crossings, which may provide habitat for all of the above species

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depending on gradient, size of stream, substrate, and surrounding habitat matrix, and no mitigation is identified.

Fish and Aquatic Habitat is not adequately addressed and mitigation is insufficient. Specific comments follow.

- The DEIR acknowledges presence of salmonids and other special-status fish species, although salmonid distribution is not well explained. The Eel and many tributaries support steelhead, coho, and Chinook well beyond the few localities mentioned and individuals sometimes enter small tributary streams in upper watersheds. This section would benefit from considerable additional detail which is readily available from published papers, regional grant-funded fish passage restoration proposals, CDFW stream inventories, and NGOs.
- Erosion and sedimentation could have a severe impact on salmonids if it reaches headwater streams. See the comment below in hydrology and water quality for further erosion information.
- Mitigation Measure 3.5-22c. The EIR states that barges shall not come in contact with Humboldt Bay sediments and that an eelgrass monitoring plan shall be prepared. However, eelgrass is known to be present immediately adjacent to and in contact with docks at Fields Landing and is clearly visible in some air photos provided as part of the DEIR. A protocol-level eelgrass survey should be conducted following NMFS published guidance for California, to document the pre-project condition and a nearby reference site. A post-construction survey should then be conducted to verify that no impacts have occurred. A mitigation plan should be prepared in advance to establish methods if impacts do occur, and included in a recirculated DEIR.

Plants, general comment: Once again, mitigation details are left for later and there are no mitigation proposals at all for species other than Siskiyou checkerbloom. What if it's not feasible to avoid impacts to the other species (there's that feasibility thing again). Note that short-leaved evax was recently successfully mitigated at Crescent City Airport.

Sensitive Natural Communities

- See eelgrass comments above. The discussion in this section acknowledges that mapping has not occurred as part of the project, even though it is required by NMFS guidance as part of published guidance where impacts may occur. The DEIR acknowledges that a barge could run aground and damage eelgrass. Contrary to the DEIR statement, eelgrass is known to occur immediately next to the docks, and was mapped and mitigated several years ago for the County's own Fields Landing Dock Improvement Project.

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Protocol-level surveys should be completed and potential impacts re-evaluated in a recirculated DEIR including specific mitigation measures.

- Natural Community nomenclature used in Table 3.5-15 appears to be out of date and/or colloquial. Why does the table not utilize the now standard Alliance nomenclature except in footnotes? Apparently these are lumped into larger groups of communities, but this approach makes it difficult for the knowledgeable reader to assess true impacts to sensitive habitat types. Current global and state ranks are tied to alliances and are not up to date for older systems of nomenclature. Has full alliance-level protocol mapping been completed for the entire project area?
- Mitigation Measure 3.5-24b. The proposed mitigation ratio of “not to exceed 1.5:1” may be adequate for some degraded or rapidly recovering habitat types, but it does not come close to compensating for the decades-long temporal lag associated with forested or some other habitat types. Forests require decades to re-establish, and coastal prairie restoration can be quite difficult and time consuming, requiring intensive weed management and re-seeding. For these slow-growing or difficult to restore habitat types mitigation ratios should be considerably higher and include performance standards and monitoring.
- It is disturbing that the applicant apparently intends to remove some forests under THP rules and not mitigate, even if those sensitive natural communities provide valuable habitat for sensitive wildlife addressed earlier in the document. The stated objective of the proposed wind project does not include commercial logging, thus all potential impacts should be analyzed and mitigated under CEQA.
- Mitigation Measure 3.5-24c. Mitigation ratios of 3:1 may be appropriate to compensate loss of saplings of some fast growing riparian trees, but are too low for older/larger or slower growing species which require decades to mature.
- Impact 3.5-25 Wetlands. Please verify impact acreages. Considering the width of proposed culvert crossings over streams, both temporary and permanent impacts to waters are surprisingly low. Numerous seeps, seasonal wetlands, and stock ponds are also readily visible along Bear River Ridge from the existing road. Ensure that impacts associated with all access roads as well as 101 bypass ramps are accounted for.
- Impact 3.5-26. Barriers to Migration. This discussion appears to focus on relatively small areas of permanent structure, while ignoring the 25-mile long clearcut associated with the gen-tie. While this linear corridor may be a minor barrier to large, mobile habitat generalists, it could be a significant

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barrier to a number of small forest obligate species. For example, even a small break in suitable habitat can serve as a barrier to Torrent Salamanders or Tailed Frogs. This discussion should be expanded to account for not only infrastructure and operational impacts but to also fully evaluate barriers resulting from changes in habitat type and acknowledging that the gen-tie will result in a long linear corridor of relatively homogenous habitat suitable for some but not all plant and animal species. Note that this impact could be quite difficult to mitigate for some species.

- Impact 3.5-27. Contrary to the discussion in this section, removal of 550+ acres of forest and woodland would almost certainly result in direct and indirect impacts to bat roosting sites, and it would not likely be possible to avoid all of these without severely constraining the project. This impact should be acknowledged, fully analyzed, and mitigated in a recirculated DEIR.
- Impact 3.5-28. Although TerraGen is not a party to HRC's Habitat Conservation Plan (HCP), the acknowledged significant and unavoidable impacts to Marbled Murrelets and other potential project impacts could put HRC at risk of violating the HCP. A more detailed analysis than that currently included in the DEIR, as well as a legal opinion, may be necessary to fully evaluate this impact. The information provided is not currently adequate to support a less than significant with mitigation finding, especially when that mitigation is limited to stormwater BMPs which may not be adequate for rainy season work over such a large area in the high winter rainfall environment of Monument and Bear River Ridges.

Biological Resource Impacts Not Addressed

- What will be done with the 500+ acres of trees removed as part of the project? Will these be stockpiled and abandoned, chipped, burned, sold, or otherwise disposed of? All of these options have potential impacts of their own. Methods of tree and slash disposal should be fully disclosed. All potential secondary or interrelated impacts associated with removal or disposal of trees and slash, including impacts associated with land or water transport, should be described in detail and mitigated if necessary.
- There is no discussion of marine mammals in the DEIR. Harbor Seals are known to inhabit Humboldt Bay including the Fields Landing area. California Sea Lions may be present around the harbor entrance, and a variety of cetaceans could be seasonally present in or near the Bay especially during the winter months. Marine mammals could be impacted by barge or tugboat collisions, underwater noise associated with boat engines, damage to eelgrass, or lighting used to facilitate nighttime unloading. While most of these potential impacts are well understood, lighting is less well studied and could attract or repel prey, alter circadian rhythms, or attract predators.

Consultation should be initiated with NOAA Fisheries to determine whether potential impacts to marine mammals rise to a level that would require preparation of an Incidental Harrassment Authorization under the Marine Mammal Protection Act and/or presence of biological monitors and these impacts and mitigation measures should be addressed in a recirculated DEIR.

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Cultural Resources

This section does not give adequate weight to the presence of known tribal resources and sacred sites on the ridges, around Bridgeville substation, and possibly in other locations. In my opinion impacts to these resources, including capping in place, would be significant and beyond mitigation, as well as... to use non-CEQA terminology for a moment... disrespectful to the tribes.

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Greenhouse Gas Emissions

Amortization may be a valid financial accounting technique, but when it is used to spread up-front emissions over a 25-year period to get to a suitable result, it is misleading at best. Accounting tricks do not change the fact that most real-world emissions would occur in the first 18 months of the proposed project. The analysis also does not appear to account for transport of cranes, trucks, workers, and other items from outside of the project area. Even more importantly, there does not seem to be a discussion of the greenhouse gas impacts of clearing over 550-acres of forests and lesser amounts of other vegetated habitat types. While the majority of these are presented as “temporary” impacts these 464 acres would in fact require decades to regenerate to functional forest and almost certainly longer than the life of the project. The Greenhouse gas analysis should be re-done to include all impacts and to account for the effects of forest removal, including carbon sequestration, with the updated analysis incorporated into an updated and recirculated DEIR. It seems possible that with deforestation and loss of carbon sequestration accounted for, the proposed project may result in a long-term net negative impact to greenhouse gasses.

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Hydrology and Water Quality

The introduction to this section describes the range of precipitation as 40 inches in Scotia to 75 inches in vaguely defined uplands; however it is not clearly stated that precipitation on Monument and Bear River Ridges is most likely toward the upper end of that stated range. A quick online search located undocumented statements of an estimated mean 77 inches of annual precipitation on the ridges. Further discussion, including reporting of data collected as part of the project, should be added since precipitation amounts in the core project area are crucial to impact analysis and discussion of mitigation suitability.

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The surface and groundwater hydrology discussion makes no mention of the plainly visible small seeps present along Bear River Ridge and presumably in other parts of the project area. There is more to groundwater hydrology than a discussion of wells.

Given the high rainfall on the ridgetops and the large area to be cleared of vegetation during the construction period, I am concerned that standard mitigation measures may not be sufficient to prevent impacts to nearby waterbodies and municipalities. Any local resident knows that in wet winters landslides ranging from small to large are relatively common along Humboldt County roads, and many of these are at lower elevations with less rainfall. Yet the applicant appears to be proposing many hundreds of acres of de-vegetation and a considerable amount of road widening during the peak of the rainy season. Once erosion begins on steep terrain it can be very difficult to check, and in this case a number of sensitive resources are present in close proximity. At a minimum there should be discussion of a contingency rapid response plan to stabilize landslides or severe erosion resulting from construction activities and heavy rainfall, and these should include input from someone with project experience in higher rainfall portions of Humboldt County.

In the event of a wet winter, there is also a good chance of rainfall-related construction delays. RWQCB permit conditions typically require that no work occur immediately before or after heavy rainfall. If construction is prolonged because of frequent rain events, what are the implications for impact analysis conditioned on an assumed 18-month construction period?

Transportation and Traffic

This section does not include adequate discussion of traffic impacts. Humboldt County drivers are not accustomed to unusual traffic events, and even a minor accident along Hwy 101 often results in backups. Numerous trips by oversized trucks moving at slower speeds could result in frequent traffic delays, including increased vehicle emissions which are not accounted for in the DEIR. Bypasses around bridges are particular bottlenecks and points of concern. Delays for emergency vehicles are also a concern because of lack of alternate routes in some areas.

Mitigation measures include repair of county roads, but do not mention Hwy 101 which is currently being resurfaced for much of the length of the project transport corridor. How will truck damage to this brand new surface be compensated? Any project related re-construction or repair of roads also needs to account for air emissions, traffic delays, and other potential impacts of the repair work.

Wildfire Impacts

Although near-coastal areas burn less frequently than hotter and drier interior portions of California, operation of wind turbines dramatically increases the risk of



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wildfires. Instances of turbine fires are well documented, and in windy grassland areas fires could easily spread and put sensitive habitats at risk at a time of year when they are not adapted to fire, as well as put local communities at risk. Local fire departments are not equipped or trained to fight fires in 600-foot tall structures. The air quality impacts of turbine induced wildfires are also not evaluated and could be severe if they occur.

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Cumulative Impacts

Although 795 of 895 acres of impacts are reported here as temporary (which is not defined), in reality some of those impacts, including 464 acres of forest, would require decades to recover to fully functional levels. When added to logging currently occurring and expected in the near future on HRC lands and surrounding private lands, including logging of sensitive habitat on Rainbow Ridge reportedly beginning as this comment letter is being written, the findings in this section seem to be questionable. A more detailed analysis of HRC and other nearby logging, based on review of existing Timber Harvest Plans, should be conducted and the total acreage affected should be reported. The analysis should be based on actual numbers and not just on a review of the general plan. Since logging of over 550 acres of forest by itself is a significant impact, the full cumulative impact of all planned logging in the project vicinity is important information for county planners and the general public and it has potentially far-reaching implications for discussion of impacts to Marbled Murrelets, Northern Spotted Owls, several types of mammals, and several sensitive amphibian species. It also has implications for greenhouse gas analysis.

I208-10

END