

Rodriguez, Melanie

From: Mary Elizabeth <mebeth@outlook.com>
Sent: Tuesday, January 21, 2025 11:30 AM
To: Rodriguez, Melanie
Subject: 1.21.2025 Non-agenda Comments
Attachments: GSFA_DEIR_Comments_1.20.2025_ME.pdf

CAUTION: This email originated from outside the Port. Please exercise caution.

Greetings,

The GSNR DEIR comment period is now closed for the wood pellet export project. I have attached comments that I submitted and there were comments submitted by many organizations and coalitions, including the Humboldt Board of Supervisors. While GSFA, the lead CEQA agency considers the comments received there is still an opportunity to learn more about the project and those issues that will impact Stocktonians. I ask that you all please consider having an agenda item so that scientists may present their concerns about the project. I also request a meeting with the Port staff to discuss the comments that they submitted as well as comments I and others submitted to have a better understanding of priorities. Thank you for your consideration of these requests.

Sincerely,

Mary Elizabeth, M.S., R.E.H.S.

**Stockton Environmental Justice
Education and Advocacy**



1.20.2025

Patrick Blacklock, President and CEO
Rural County Representatives of California (RCRC)

Patrick Blacklock, Executive Director
Golden State Financing Authority (GSFA)

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Via ceqacomment@gssfahome.org

Re: **GSNR DEIR Comments** Wood Pellet Export Project aka Forest Resiliency Demonstration Project EIR

Thank you for extending the comment period an extra 30 days. I believe that it provided more time for folks to meaningfully engage with review and comment development for your consideration as next steps are pondered. The negative impacts from the multipronged project were not adequately assessed and therefore inadequate mitigation measures were proposed leaving already pollutant overburdened communities with increased exposure. Even without a complete assessment of air quality, greenhouse gas, and ecosystem impacts related to transportation and project implementation, findings of significant and unavoidable impacts were put forth at the GSNR Draft Environmental Impact Report (DEIR) stage of CEQA disclosures. As such, the GSNR DEIR should not be certified without significant revisions to fully disclose negative impacts and the project should be rejected on the basis that the level of excessive negative environmental impacts do not justify the project.

Yes, wildfire resilience is a noble goal and necessary measures that require hard work and sacrifice are challenging. But having spent more time with my family I am fortified by our family saying, "What do workers do, WORK!". We must work to harden homes to reduce complex fuel sources. Creator, who blessed us with photosynthesis power, calls out with physical reminders that our decisions and actions have consequences. We must make hard decisions for better planning and regulation development that protects neighbors from worst case scenarios. We must work to reduce business as usual greenhouse gas emissions. Retaining heat in our atmosphere and then oceans have consequences that affect populations worldwide with changes in climate. These changes in climate have dire consequences, not just inconvenience. Sea level rise due to thermal expansion and ice melting affect those living in coastal and inland waters that must try to mitigate or retreat. Higher atmospheric temperatures lead to increased evaporation, reducing soil water content especially in areas of soil compaction and tilling. Human health is also affected by higher temperatures relating to physiological responses and disease vector migration. Mitigation measures only make impacts more bearable, better to reduce greenhouse gas emissions and this project does just the opposite.

The comments I present deal mostly with Stockton and do not include a critique of the air modeling results because I do not really understand how the air quality models work and how the assumptions are handled. I did request in a public meeting in Stockton and in correspondence to the GSNR Board for a workshop to explain the air quality analyses presented.

Stockton

GSNR representatives have acknowledged that the GSNR agency will not be operating the proposed wood pellet export project and the only organization with which a formal agreement is established is DRAX a multi-national corporation. The memorandum of understanding between GSNR (project proponent) and Drax US Beccs Development, LLC is dated 1.18.2024. This 24 month agreement, is the disclosure of a potential operator and implementor of any CEQA mitigation measures and regulatory operational measures and includes the following recitals:

- DRAX has an expressed commitment to enabling a zero carbon, lower cost energy future through engineering, technology, and innovation.
- GSNR and DRAX (collectively, "the parties") have a shared interest in advancing forest health projects, which includes identifying a sustainable outlet for biomass produced as part of those efforts.
- The parties mutually desire to establish a framework for exploring potential opportunities to advance the development of sustainable biomass resources in California and elsewhere, without making any legally binding commitments to proceed with any particular project or activity at this time, including GSNR's Project.
- The parties acknowledge that they have entered into a Non-Disclosure Agreement dated the same date as this MOU ("NDA").

The above referenced DRAX MOU was included in the GSNR Board of Directors Agenda Packet dated 2.28.2024. The DRAX environmental violation history was not disclosed which is extensive in areas including the United States, Canada, and Great Britain.¹ These violations must be disclosed and safeguards established in the GSNR DEIR as smoke from a fire at the Port of Stockton would directly affect air quality of the downwind vulnerable and disadvantaged neighborhoods of Stockton creating additional hazards. The high temperatures that we have in Stockton during the summer and fall months put stored ignitable products at extraordinary risk for combustion. The Port of Savannah fire last summer in Georgia was in part due to unusually high temperatures.²

The proposed storage complex for this GSNR wood export project would be located on the West Campus (formerly Rough and Ready Island) as shown on the below figure from the GSNR DEIR.

¹ How mega-polluters take advantage of billions in green loans. 1.19.2025. <https://apnews.com/article/shell-drax-greenwashing-pollution-sustainabilitylinks-loans-slls-a28e03c7421222c58025b31ab8185272>

² <https://www.savannahnow.com/story/news/fire/2024/07/13/savannah-fire-department-responds-to-wood-chip-conveyer-belt-fire/74392426007/>

<https://ruralprogressive.com/2023/12/18/worlds-largest-wood-pellet-plant-world-record-in-waycross-georgia/>



Immediately north of the West Complex is the San Joaquin River and north of the river is housing for Stockton residents which are directly affected by Port of Stockton operations, especially relating to marine transport. Additionally, there is a regional park, Lewis Park and Pixie Woods an amusement park for younger children that are sensitive receptors, especially in the spring, summer and fall months.

Stockton Utilities and Permitting

The GSNR DEIR did not present a full disclosure of required utilities and responsible agency project permits and approval. The following table from the GSNR DEIR does not list the

correct utilities that would need to provide services if the GSNR wood export project were to be constructed and operated.

Table 2-12 Utility Summary indicates that the Port of Stockton provides all necessary utilities for the project. The Port of Stockton **does not** provide potable water or sanitary sewer services.

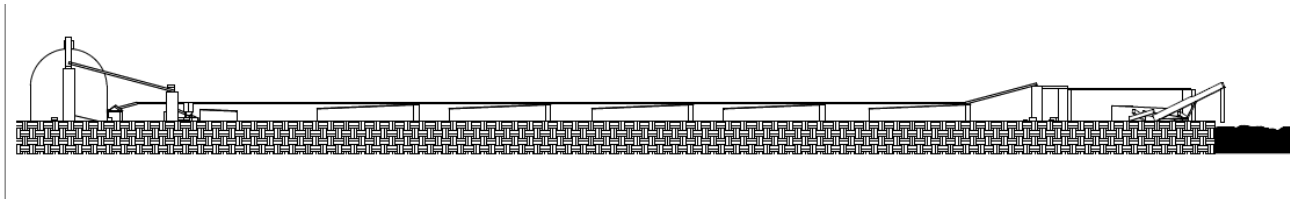
Table 2-12. Utility Summary

Utility	Provider	Details
Electrical	Port of Stockton	12,060,000 kWh annually (0.7 MW load).
Service Water	Port of Stockton	Operation would require approximately 675,360 gpy (2.07 AFY) for service water (non-potable). All service (non-potable) water uses would have an average demand of 84 gallons per hour, or 1.4 gpm. Maximum flow demand for non-potable water would be 66 gpm (excluding fire flow).
Fire Water	Port of Stockton	Existing fire hydrants would be used. For purposes of fire flow, the maximum non-potable flow would be between 1,500 and 3,940 gpm.
Potable Water	Port of Stockton	Operation would require approximately 50,966 gpy (0.16 AFY) for potable water. Potable water demand would be an average of 6.3 gallons per hour, or 0.1 gpm. Maximum potable flow would be 11 gpm.
Sanitary Sewer	Port of Stockton	Approximately 3 gpm.
Stormwater	On-Site Treatment	A stormwater drainage system would be installed to direct run off.

Notes: kWh – kilowatt-hours; MW = megawatts; gpm = gallons per minute; AFY = acre-feet per year.

California Water Service provides potable water in that part of Stockton and the City of Stockton provides sanitary sewer services.

The source of fire water and service water at the Port of Stockton is the San Joaquin River. **The reliance on fire hydrants without a fire water tank does not fully consider the hazards of storing ignitable material.** No fire water tank is labeled on the cross-section in the GSNR DEIR as shown below from Figure 3.1-5. Fire tanks that supply 2 hours of continuous water to control pellet manufacturing fires but none for Stockton, only “auxiliary structures and utility systems”.



The GSNR wood export project DEIR includes the following statements regarding fire:

Long-term storage of wood pellets may result in self-heating and potential combustion. This would be a potentially significant impact. Therefore, the two storage domes would employ temperature sensors, moisture sensors, and multi-gas detectors to monitor the pellet storage pile conditions and include multiple levels of fire suppression systems as well as dust suppression systems to minimize the potential for any fire or combustion conditions to develop. Operations would also include preventative measures including minimizing storage time to lower the risk of fire. In the event any of the dome instrumentation triggers there would be a nitrogen deluge system designed to flood the domes with nitrogen, displacing the oxygen supply. Additionally, the following fire monitoring and suppression system would be used:

- All conveyors would have a linear temperature sensing cable to monitor product temperature along the length of the belt.
- Transfer points would have IR sensors (several per chute) to detect any high temperature particles.
- Each of the above detection methods can trigger fire water nozzles to spray the product stream.

All fire prevention and suppression systems would comply with all applicable current standards and codes set by the National Fire Protection Agency and the California Building Code as well as any additional requirements deemed necessary by the applicable local fire authority.

There would also be auxiliary structures and utility systems required for plant operations (nitrogen, service water, fire water, potable water, compressed air, and sewer). To control air quality and maintain a safe work environment, a series of dust control systems would be installed. Fire and explosion protection would be incorporated in this area.

Unfortunately, there was no description of the existing fire suppression infrastructure or any requirements of the “applicable local fire authority”. As the Port of Stockton obtains service and fire water from the San Joaquin River the recent identification of invasive species known to clog water lines is an added hazard not characterized in the GSNR DEIR. The invasive species, golden mussel, was reported to have been identified at the Port of Stockton for the first time attached to

equipment and buoys during recent routine water quality tests.³ The species is transported on ships’ hulls and in ballast water that is drained in ports and known to colonize and clog water infrastructure.

As the Port takes water from the San Joaquin River for most non-domestic Port development needs, these mussels could have colonized the Port’s firefighting infrastructure. The GSNR DEIR should have considered how the increased marine vessel trips may further add to the invasive species threat to water quality and how firefighting abilities may have been compromised. Existing regulations and practices, if implemented, are clearly insufficient to protect the waters of the state from invasive species’ habitation. A description of the measures which will be employed to prevent further degradation related to marine practices should have been included in the GSNR DEIR. Invasive species is a water quality impairment.

Additionally, the GSNR DEIR should have clearly located fire hydrants around the perimeter of the proposed project site and within the proposed site. Also the GSNR DEIR should have shown through water flow tests that fire flow is adequate for the intended project. Comments submitted in response to the Notice of Preparation (NOP) stated that fire and explosion were concerns that should be addressed in the GSNR DEIR. Table 2-12 Utility Summary included above shows that there are significant differences between hydrant fire water flow abilities. The operational requirements per NFPA 24 and California Fire Codes standards should have been specifically referenced, and a site safety plan should have been included in the GSNR DEIR. Additionally, there should be an analysis of how the neighboring community will be evacuated as needed for a worst-case scenario.

The GSNR DEIR stated that that “Operations would also include preventative measures including minimizing storage time to lower the risk of fire.” without providing a plan for how that time limit is to be determined to lower the risk of fire or how the time limit is to be monitored and data made available to the people of Stockton to verify that operations are not presenting an extreme fire risk. How the risks vary seasonally was not discussed or analyzed in the GSNR DEIR. As will be discussed later under air quality, the Port of Stockton had a large number of queued ships waiting for berthing which contributed to a significant increase in pollutant emissions during 2022. Queuing of ships or rail was not disclosed, discussed or analyzed in the GSNR DEIR.

The GSNR DEIR Table 2-13 listed the Responsible Agency project permits and approvals for the three sites in Tuolumne County, Lassen County, and the Port of Stockton. Unbelievably, the only required approval and permit identified for the Port of Stockton Facility is the Port of Stockton lease agreement as shown below in part of Table 2-13 from the GSNR DEIR.

Table 2-13. Responsible Agency Project Permits and Approvals

Agency	Permit	Purpose	Discretionary?
		jurisdictional wetlands on the property	
Port Facility			
Port of Stockton	Lease Agreement	Ground lease and construction of improvements.	Yes
Feedstock Acquisition Permits and Approvals			

³ [Invasive mussels could harm California Delta ecosystem and add to water costs. Ian James Los Angeles Times, 11.6.2024](#)

Agencies other than the Port of Stockton are involved with permitting construction and operation of the proposed wood pellet export facility. A City of Stockton building permit will be needed, an air pollution control permit, and others including stormwater control as well as any other requirement in the Port of Stockton Settlement for Redevelopment of the West Complex (Rough and Ready Island). The GSNR DEIR failed to disclose the basic regulatory requirements associated with the **Stockton** proposed project.

Air Quality

All aspects of this proposed wood export projects result in “significant and unavoidable” air quality impacts even after the proposed limited mitigation measures. The associated forest management projects that are to supply feedstock for the proposed Lassen and Tuolumne pellet manufacturing facilities will exceed daily and annual air district thresholds for NO_x, CO, PM₁₀, and PM_{2.5}. Therefore, the project would conflict with the applicable air quality plans and the impact related to this portion of the project would be significant and unavoidable. Not only will emissions from equipment and transportation impact air quality but these forest management projects would require off-road equipment for treatment activities that could potentially disturb the soil, creating erosion and soil compaction.

The argument that soil compaction could be a benefit, completely ignores all healthy soil principles that are found associated with good drainage and rhizome health that supports native vegetation and drought resiliency. Soil impacts were not adequately evaluated, especially when the mechanical treatment planned, which is the cheapest way to remove forest products, will impact rhizomic areas far beyond the disturbance site. No CEQA analysis was performed to assess the impacts from mechanical harvesting, road building and temporary stream crossing on soil texture changes and zones of impact were not quantified. These impacts are not necessary for wildfire mitigation as only 27 percent of the forest management project areas are deemed overstocked such as needing thinning. The use of trees up to 40 inches in diameter that can represent old growth in areas of California where the precipitation levels are lower will have significant impacts on ecosystem health and tree viability due to interconnected root systems and microclimates produced by mature trees. The project is not designed for forest resiliency as its GSNR DEIR title would indicated but for pellet wood production and those impacts that are deemed significant and unavoidable are unnecessary. An example of the logic used several times regarding impacts includes the following from the GSNR DEIR. This is not an example of mitigation for the many species that will be impacted by the large scale scope of the proposed project to supply 1 million metric tons of dried wood pellets for export.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings in the Working Area also have the potential to impact special-status burrowing or denning wildlife through the loss of, or modification to, habitat within the work area. Heavy equipment and personnel could accidentally collapse burrows and dens occupied by special-status wildlife. This impact would not be limited to the breeding/rearing season for species that occupy burrows year-round (e.g., Mount Lyell shrew and Sierra Nevada mountain beaver). In addition, heavy equipment use could lead to

soil compaction and impede recolonization of the treatment area. Sierra Nevada mountain beaver prefer areas with dense understory vegetation, so changes to the character of these understory features from hazardous fuel reduction and shaded fuel breaks could result in temporary loss of habitat function and exclusion of these species from the treatment site. However, overstory thinning could increase light penetration to the forest floor and increase growth of herbaceous plant species, which may benefit this species in the long-term.

This increased growth of herbaceous plant species creates wildfire fuel when seasonal drying occurs or when drought returns. The benefits of the forest management practices are overstated and the impacts understated. The people in the immediate areas of forest extraction, pellet manufacturing, and export for overseas combustion will be directly negatively impacted, as well as ecosystem populations that will be impacted by the scope of the project, to produce 1 million metric tons of dried wood pellets. The people of the world will be impacted with additional greenhouse gas emissions trapping radiant energy from escaping our atmosphere resulting in increased atmospheric and oceanic temperatures creating hazardous for our human society as a whole.

From the GSNR DEIR:

- The operational emissions at the Lassen Facility would still exceed daily BACT thresholds for VOC, NO_x, CO, PM₁₀, and PM_{2.5}. Therefore, the project would conflict with the Lassen County APCD air quality plans and the impact related to this portion of the project would be significant and unavoidable.
- The operational emissions at the Tuolumne Facility would still exceed the annual threshold for CO. Therefore, the project would conflict with the Tuolumne County APCD air quality plans and the impact would be significant and unavoidable.
- The line-haul rail transport emissions would exceed the Northern Sierra AQMD, Butte County AQMD, Feather River AQMD, Sacramento Metropolitan AQMD daily thresholds for NO_x, and the Butte County AQMD and Feather River AQMD annual thresholds for NO_x. Therefore, the project would conflict with the applicable air quality plans, resulting in a potentially significant impact. The impact related to this portion of the project is significant and unavoidable
- The Port of Stockton facility operations would result in a net increase in emissions and, as shown in Table 3.2-57, the increase in emissions would exceed the San Joaquin Valley APCD annual NO_x significance threshold prior to mitigation, and the impact would be potentially significant. The operational emissions caused by the Port of Stockton facility would still exceed numeric thresholds for NO_x (Table 3.2-59). Therefore, the project would conflict with the San Joaquin Valley APCD's air quality plans and the impact would be significant and unavoidable.

- Because operational activities at the Port of Stockton would generate ambient concentrations of criteria pollutants (including PM_{2.5}) above the applicable thresholds with application of mitigation, this represents a cumulatively considerable increase in these pollutants. The SJVAB is designated as a nonattainment area for the national 24-hour and annual PM_{2.5} standards, and as a nonattainment area for the California annual PM_{2.5} standard, and as set forth in GAMAQI, a cumulatively considerable increase in PM_{2.5} is considered to result in a cumulatively considerable net increase in PM_{2.5}. Therefore, the impact related to this portion of the project would be significant and unavoidable.

As stated previously, I was not able to evaluate the modeling assumptions that were used to develop the estimated emissions from the rail and ship operations but by considering existing operations including projects not considered for cumulative impacts, the emissions are understated for rail and ship transportation. These emissions are emitted over a greater distance than a 30-kilometer grid around the project site (18 miles). The fact that NO_x and VOC combine to create ozone concentrations that are also exceeded in Stockton was disclosed but not fully evaluated in the GSNR DEIR as indicated below.

These emissions-based thresholds for O₃ precursors are intended to serve as a surrogate for an “ozone significance threshold” (i.e., the potential for adverse O₃ impacts to occur). This approach is used because O₃ is not emitted directly, and the effects of an individual project’s emissions of O₃ precursors (VOC and NO_x) on O₃ levels in ambient air cannot be determined reliably or meaningfully through air quality models or other quantitative methods. Thus, if an area is nonattainment for O₃, exceedance of the applicable VOC/ROG or NO_x thresholds will result in a significant impact under CEQA Guidelines, Appendix G, Threshold 2 relating to O₃.

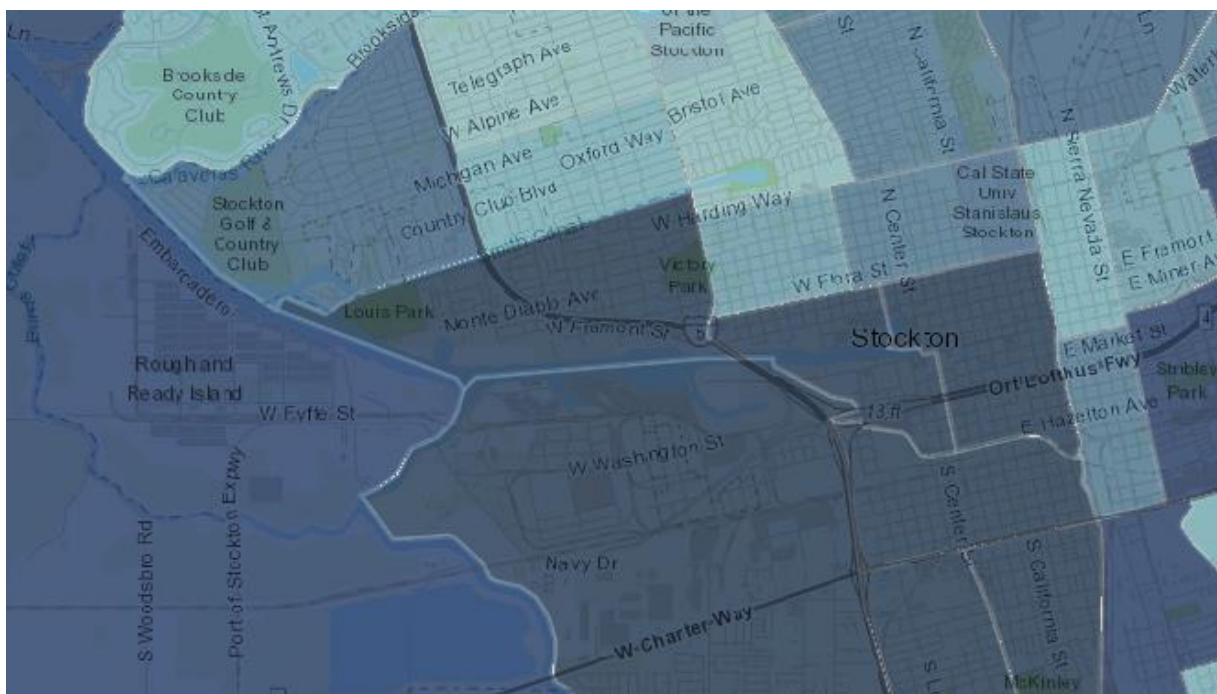
While there are relatively few studies on the effects of O₃ on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O₃ and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents, and adults who exercise or work outdoors, where O₃ concentrations are the highest, are at the greatest risk of harm from this pollutant.

As a school teacher, I understand the effects on families when children are having breathing problems and the time it takes to attend an emergency room visit. Continuing to impact already pollutant burdened communities is not acceptable and creates hazardous conditions that becomes an environmental justice issue when those communities that are most highly burdened are low income with low educational attainment levels which hampers their ability to have the time to stand up and say no more here.

The San Joaquin Valley air basin is non-attainment for ozone as shown in the following summary table from the San Joaquin Valley Air Pollution Control District website.⁴

Pollutant	Designation/Classification	
	Federal Standards ^a	State Standards ^b
Ozone - One hour	Revoked ^f	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme ^e	Nonattainment

Ozone concentrations are highest in Stockton when temperatures are high and last year we had 49 days with temperatures over 100 degrees F.⁵ Ozone is an irritant that causes breathing difficulties. A comprehensive health impact assessment would have evaluated impacts related to ozone creation due to existing Port operations which will increase with the proposed wood export project. This impact will expose areas already designated as an AB617 area and pollutant overburdened with increased exposures. As this project will be marine and rail focused, those westside neighborhoods across the San Joaquin River will be impacted with prevailing westerly winds (blowing from the west to the east). These communities as shown on the CalEnviro Screen 4.0 map below, already have a 96 percentile pollutant burden.⁶



The GSNR DEIR citation of higher rates of respiratory-related hospital admissions, mortality, and nonfatal acute myocardial infarction in San Joaquin County compared to Lassen and Tuolumne

⁴ <https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainment-status/>

⁵ <https://www.extremeweatherwatch.com/cities/stockton/yearly-days-of-100-degrees>

⁶ <https://experience.arcgis.com/experience/ed5953d89038431dbf4f22ab9abfe40d/>

Counties is due to already poor air quality which will be made worse by increased NOx and PM2.5 emissions from the proposed wood export.

There is a complex and comprehensive health based impact due to the proposed construction and operation of the wood pellet export project. The impacts of Valley Fever when soils are disturbed creating respiratory fungal infections was acknowledged but there was no mention of the asbestos that may be released at the Port relating to the age of the parking lot which is proposed to be demolished. The time of construction may occur over 15 months and mitigation for asbestos was not discussed. Road and parking lot construction practices in the 1970s and 1980s when my mom was working for GSA on Rough and Ready Island would have likely included asbestos. While the properties of asbestos are remarkable, we know now that friable asbestos as can occur during demolition or modifications and pose serious health risks if inhaled. The GSNR DEIR should have included mitigation measures in the event that asbestos is encountered during construction activities at the Port of Stockton.

The proposed mitigation measures for partially addressing air quality impacts within the Port area are inadequate. Mitigation measures must be enforceable and allowing for exemptions if cleaner alternatives are deemed too costly or unavailable suggests that these exemptions will be frequently invoked resulting in increased concentrations of regulated pollutants in Stockton. As there are only 8 total employees for operation of the Stockton facility and at most 4 employees at the same time, carpool education is unlikely to provide meaningful improvements in air quality. The normal shift size would be four (4) employees in the A shift (day shift), and two (2) employees each in the B and C shifts. If this project is constructed and operated, residents will experience increased respiratory health hazards.

Wood dust is found associated with export facilities with storage domes and no permanent monitoring was proposed to verify that “these” domes will operate any better than similar domes where wood dust continues to be an issue. The statement that “Potential mitigation measures were evaluated to attempt to decrease NOx emissions below the thresholds that were exceed; however, GSNR does not have operational control over the type of ships being used. Therefore, no feasible mitigation measures were identified.” The inability to mitigate ship-related emissions points to the critical flaw of the project’s ability, as currently proposed, to protect community health and meet environmental goals. The same would be true for rail impacts.

Stockton neighborhoods vary significantly in their pollutant burdens, economic status, and educational attainment. These factors were considered when Stockton became an AB617 community as shown on CalEnviro Screen 4.0 map above. According to CEQA guidelines and case law, lead agencies must consider how the environmental and public health burdens of a project might specially affect certain communities. This requires a local lead agency to determine whether pollution from a proposed project will have significant effects on any nearby communities, when considered together with any pollution burdens those communities already are bearing or may bear from probable future projects.⁷ The Port of Stockton has a number of

⁷ https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/ej_fact_sheet.pdf

recent and proposed projects which were not considered in the GSNR DEIR. The only projects that were considered included:

1. Port of Stockton BayoTech Hydrogen Production and Dispensing Facility Project
2. TC NO. CAL. Development Warehousing and Distribution Facility Project
3. McDonald Island Dredged Material Placement Site Project
4. Port of Stockton Rail Bridge Replacement and Rail Improvements Project
5. Denmark Natural Soda Ash Export Terminal at the Port of Stockton

Other existing projects which should have been considered when performing a cumulative analysis of impacts on the existing overburdened residents of Stockton include the expansion of the former Lehigh Cement facility now known as Nevada Cement Company LLC, BWC (Contanda) Renewable Diesel Bulk Liquid Terminal, NuStar Marine Oil Terminal, DTE, and Penny Newman.

Besides those immediate impacts related to the proposed GSNR wood pellet export project there will be health impacts on those communities where the wood pellets will be combusted. The residents of Stockton know all too well these impacts as DTE, a biomass incinerator that produces electricity using steam turbines, is the number one stationary source of air pollution within the AB617 Stockton area and located on Port of Stockton property.⁸ If the GSNR DEIR discussed global greenhouse gas benefits and carbon storage, then the GSNR DEIR should have discussed the health impacts on those communities where combustion for purposes of electricity production occurs. These international impacts related to proposed operations must be assessed in order that the project can be completely and transparently evaluated for certification consideration.

Existing Conditions at the Port

The GSNR DEIR states that “In 2022, the Port had 278 vessel calls, received 38, 271 railroad cars, 4.4 mm tons of cargo, was the number one dedicated bulk/break-bulk port in California, and the fourth busiest port in the state (Port of Stockton 2024)”. Existing projects and those planned and approved will increase these numbers in excess of what emissions were modeled, as not all planned and existing projects were considered. The reference (Port of Stockton, 2024) for the annual report from 2022 did not include railroad car numbers that I was able to locate. Adequate references in a DEIR are needed for members of the public to verify data presented in the GSNR DEIR upon which decisionmakers will use during certification deliberations.

I have attached below the 2023 Port Tonnage Report⁹ which was available in 2024 that also included the 2022 and 2023 data. In 2023, there were 288 vessel calls, ten more than must have been used as a baseline when performing cumulative emissions associated with the proposed additional 29 cargo wood export ships, each carrying 35,000 metric tons of product annually. How the 10,000 additional annual railroad cars were estimated was unclear (7000 coming from Lassen BNSF-UP and 3000 from Tuolumne Northern Sierra-BNSF). The railroad impacts were also likely underrepresented. The planned railroad improvements which were discussed in the Stockton

⁸ <https://community.valleyair.org/media/h50dve3x/appendix-c.pdf>

⁹ <https://www.portofstockton.com/annual-report/>

Soda Ash (Denar) FEIR were designed to accommodate the increased rail associated with that approved Soda Ash project. Even when those railroad improvements occur, if funding becomes available, additional rail traffic above what was planned for will experience the queuing that can last 20 minutes or more as I experienced in early December 2024 when I made a trip to the Port office by means of Washington Avenue.

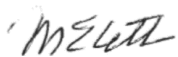
The Port of Stockton recently released the *Port of Stockton Inventory of Air Emissions - 2022*.¹⁰ The scope of the inventory is limited to Port managed operations and for emissions that occur on Port of Stockton property – thereby very limited in terms of the lessee operations and operations that extend well beyond the Port of Stockton boundary. There was a reported increase in vessel arrivals from 201 in 2020 to 220 in 2022, with an accompanying increase in the NOx emission from 159 tons in 2020 to 286 tons in 2022, representing an 80% increase in ocean-going vessels NOx emissions. Locomotive emissions increased from 27 tons in 2020 to 39 tons in 2022 representing a 48 percent increase annually in NOx emissions between 2020 and 2022. These significant increases were attributed to queueing, which is only expected to increase with increased marine and rail traffic. An analysis of these data must be considered when performing the additional cumulative analysis of both existing and potential planned sources of air pollutants and greenhouse gases at the Port of Stockton and nearby Penny Newman.

The impacts associated with overseas transport to international markets for producing electricity are not carbon neutral and in fact produces more carbon dioxide than coal which is also supplied overseas by the Port of Stockton, as shown on the 2023 Tonnage Record. The energy density of wood is less than coal and while wood is renewable it takes many decades or more to re-sequester the carbon released depending on the climatic conditions where the trees are grown. Biomass combustion releases stored carbon this is different than living biomass experiencing fire.

The proposed project scope and analysis should not be certified. Restructuring to reduce emissions may allow for a more sustainable and community level project to deal with those thinning piles and reduce reliance on expensive PG&E electricity as community members in Tuolumne suggested during a public DEIR comment meeting which was not available for residents in Lassen or San Joaquin County, unless they travelled to the site to make the comment.

You may contact me at mebeth@outlook.com.

Sincerely,



Mary Elizabeth M.S., R.E.H.S.

¹⁰ https://www.portofstockton.com/wp-content/uploads/2024/12/DRAFT-Port-of-Stockton-2022-El-Report_26Nov24_scg.pdf

2023 Tonnage Report

VESSEL AND CARGO INFORMATION

VESSEL MOVEMENTS

QUARTER	2023	2022	2021	2020
1st (January - March)	75	85	70	50
2nd (April - June)	69	69	83	65
3rd (July - September)	79	65	78	61
4th (October - December)	65	59	63	66
TOTALS	288	278	294	242

VESSEL TONNAGE

QUARTER	2023	2022	2021	2020
1st (January - March)	1,153,599	1,207,517	1,168,186	952,090
2nd (April - June)	1,036,957	1,136,478	1,429,772	970,778
3rd (July - September)	1,194,440	1,091,990	1,268,527	912,699
4th (October - December)	920,072	996,654	1,071,965	1,173,710
TOTALS	4,305,068	4,432,639	4,938,450	4,009,277

TOP 20 COMMODITIES (METRIC TONS)

CARGO	2023	2022	2021	2020
Bulk Cement/Slag	992,773	1,270,528	1,256,958	1,132,875
Bulk Coal	708,168	393,562	1,115,221	699,300
Renewable Fuels	486,582	64,188	9,520	---
Liquid Fertilizer	379,271	405,203	683,214	692,510
Food Grade Oil	262,705	236,648	246,816	207,858
Molasses	228,376	197,218	219,678	172,655
Bulk Beet Pulp Pellets	160,672	134,319	146,600	124,000
Sulfuric Acid	144,069	77,247	149,546	196,104
Bulk Mineral Sand	141,480	289,419	46,000	---
Bulk Sulfur	120,872	133,332	163,113	162,646
Bulk Fertilizer	105,586	143,306	184,424	111,552
Anhydrous Ammonia	105,203	124,679	119,696	145,318
Bulk Animal Feed	102,133	222,550	92,646	---
Steel Products	74,254	267,764	102,015	55,352
Bagged Sugar	65,483	36,000	13,948	---
Cottonseed	64,897	49,171	22,467	---
Bulk Rice	24,949	62,497	26,867	52,357
Bulk Soybean	22,184	---	---	---
Bagged Rice	13,013	62,710	145,577	101,035
Bagged Fertilizer	12,264	---	---	---

IMPORTS

- Bulk Cement/Slag
- Liquid Fertilizer
- Food Grade Oil
- Molasses
- Renewable Diesel
- Sulfuric Acid
- Bulk Fertilizer
- Anhydrous Ammonia
- Bulk Animal Feed
- Steel Products
- Bagged Sugar
- Cottonseed
- Bulk Rice
- Bulk Soy Bean Meal
- Project Cargo
- Bagged Fertilizer
- Bagged Sweet Potato Pellets
- Wood Products

EXPORTS

- Bulk Coal
- Feed Stock
- Bulk Beet Pulp Pellets
- Bulk Mineral Sand
- Bulk Sulfur
- Bulk Petcoke
- Bagged Rice
- Bulk Tire Chips

¹¹ <https://www.portofstockton.com/annual-report/>

Freight Railroad Map of California¹²



¹² <https://www.aar.org/wp-content/uploads/2021/02/California-Freight-Rail-State-Map.png>

The proposed Lassen site is located at 653-800 Washington Avenue, Nubieber, California

New internal roads for truck access and facility personnel access will be added, including a new road for truck access from Babcock Road at the southwest corner of the site. A new rail spur connecting to the adjacent BNSF Railway line would be added for finished product load out as well as additional rail siding tracks on-site for the storage of full and empty railcars. The proposed wood pellet production facility would receive feedstock in two primary forms: roundwood and residual chips. Roundwood would be delivered to the facility by logging trucks and stored in the woodyard until processed into chips. Residual chips would be delivered in trucks and received using automatic back-on truck dumps. The residuals stream would be made up of chips and small amounts of sawdust.

The facility would be designed to produce 700,000 metric tons (MT) per year of industrial wood pellets. To produce this amount of pellets, a higher ratio of green material must be received, to account for drying and for material used in the drying process. The annual green feedstock volume required for this facility is approximately 1,183,890 metric tons, or 1,305,015 US tons.

Both feedstock streams would be screened for oversized pieces and would be conveyed to a stacker reclaimer to pile the bulk material for storage. At full design capacity, the facility could produce up to 700,000 MT per year of I2 industrial grade wood pellets. Per the International Standard for Organization (ISO) wood pellet specification, I2 industrial grade wood pellets

Table 2-1. Feedstock Specifications

Form of Feedstock Received (Annual Percentage By Weight)	
Chips (including Sawdust)	71%
Roundwood	29%
Roundwood (As Received)	
Biomass Length	8 feet to 50 feet
Biomass Diameter	3 inches to 40 inches
Moisture Content	35 - 50%
Bark Content	Up to 12%
Required Capacity	41.2 MT/hour ^a
Residual Chips (As Received)	
Chip Size Distribution (Assumed)	—
> 4 inches	4%
3/8 inches to 4 inches	90%
< 3/8 inches	6%
Chip Moisture Content	35%
Sawdust Moisture Content	50% to 55%
Required Capacity	106.0 MT/hour
Biomass Fuel ^b (As Received)	
Max Particle Size	6 inches
Moisture Content	15% to 40%

Finished pellets would be conveyed from the pellet mill to **three 2,500-metric-ton silos** for storage and loadout. From the silos, the finished product would be loaded into railcars for transport to the port for shipping. A new rail spur connecting to the adjacent BNSF Railway line and track to store railcars would be added for finished product loadout. Railcars would be combined into 100-car unit trains. 70 trains per year, or approximately one train departing every five days, would depart for the Port of Stockton. (Each unit train has six locomotives, in addition to the 100 freight cars.) A unit train is a train formed of cars carrying the same material to the same destination. By comparison, a manifest train is made up of different cars (and cargos) with different origins and destinations.

The Burlington Northern Sante Fe (BNSF) Railroad forms the eastern boundary of the site. The site includes a railroad siding, a gravel deck, internal roadways, a well pump house and water tower. The water tower is 102 feet tall. The buildings from the prior use are located north of the project site, and were separated from the main parcel through a lot line adjustment. A portion of the site, including the gravel deck and pump house, is licensed to Sierra Pacific Industries (SPI) for loading of lumber and wood products onto railcars and refilling water trucks.

Facility equipment is designed based on 8,040 hours of operations per year. Feedstock would be received at the woodyard 24 hours per day, 5 days per week. This would produce and store enough feedstock for fuel to enable pellet production to operate consistently. Pellet production operations would be active 24 hours per day, 7 days per week, with up to 4 weeks total downtime allotted for planned and unplanned outages once at capacity. After start-up and commissioning, it is expected that it will take 2 years to reach full facility capacity. 60 full-time employees 3 shifts. The Lassen and Tuolumne Plants will be producing pellets with the same specification.

Property	Specification
Density	42 lb/ft ³ to 44 lb/ft ³
Moisture Content	7%
Diameter	0.24 inches to 0.39 inches (6–10 mm)
Length	0.24 inches to 1.57 inches (6–40 mm)
Durability	≥ 97.5%
Fines Content	≤ 5.0%
Net Calorific Value	≥ 7,100 BTU/lb (16.5 MJ/kg)
Total Ash	≤ 1.5%

Notes: Specifications based on ISO 17225-2:2014(en). Solid biofuels – Fuel specifications and classes – Part 2: Graded wood pellets. lb/ft³ = pounds (mass) per cubic foot; mm = millimeters; BTU = British thermal unit; MJ/kg = megajoules per kilogram.

Property	Specification
Density	42 lb/ft ³ to 44 lb/ft ³
Moisture Content	7%
Diameter	0.24 inches to 0.39 inches (6–10 mm)
Length	0.24 inches to 1.57 inches (6–40 mm)
Durability	≥ 97.5%
Fines Content	≤ 5.0%
Net Calorific Value	≥ 7,100 BTU/lb (16.5 MJ/kg)
Total Ash	≤ 1.5%

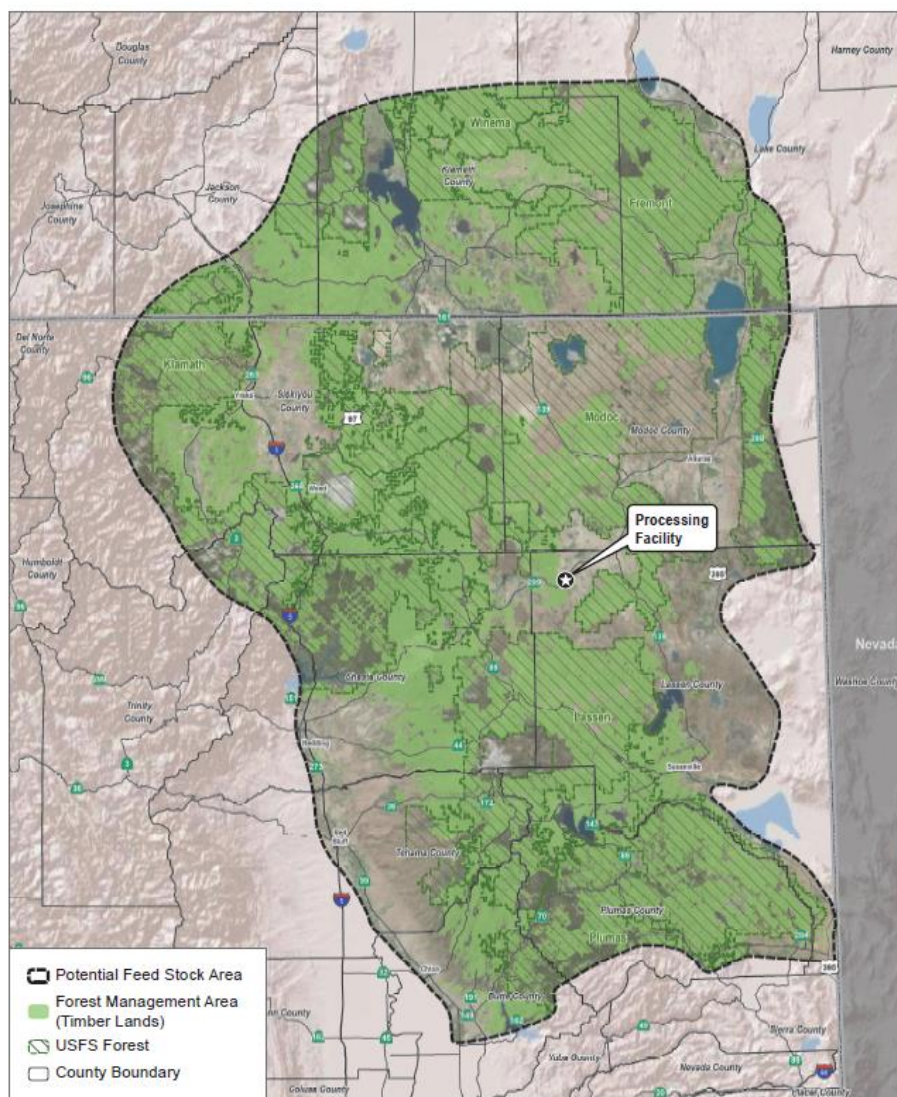


FIGURE 2-1

Golden State Natural Resources Forest Resiliency Demonstration Project

The proposed Tuolumne wood pellet processing site is located at 12001 La Grange Road approximately 9 miles southwest of the community of Jamestown, in Tuolumne County, California.

Elevations on the Tuolumne site range from approximately 1,070 feet above mean sea level in the northwest corner of the site to 1,140 feet above mean sea level in the eastern portion of the site. Currently, 9.6 acres of the total 58.56 acres of the project site are paved. Considerable care is needed to verify that the slope on the project site does not contribute to any accidents related to operations including rail or storage of fuels.

The Tuolumne location is a previously developed site that was formerly a wood processing mill, used by the former owner, Sierra Pacific Industries, for finished bark and colored mulch processing. Prior to Sierra Pacific Industries ownership, the facility was an operational sawmill run by Louisiana Pacific. A wood shaving plant owned by American Wood Fibers is located adjacent to the west side of the site, and two residences are located adjacent to the northwest corner of the site. Agricultural land is located to the north, east, and south. The site is bordered by Sierra Northern Railroad to the west that travels along La Grange Road and intersects near the southwestern project site boundary.

The facility would be designed to produce 300,000 metric tons (MT) per year of industrial wood pellets. To produce this amount of pellets, a higher ratio of green material must be received, to account for drying and for material used in the drying process. The annual green feedstock volume required is approximately 548,294 metric tons (604,390 US tons).

The proposed wood pellet production facility would receive feedstock in two primary forms: roundwood and residual chips. Roundwood would be delivered to the facility by logging trucks and stored in the woodyard until processed into chips. Residual chips would be delivered in trucks and received using automatic back-on truck dumps. The residuals stream would be made up of chips and small amounts of sawdust. Both feedstock streams would be screened for oversized pieces and would be conveyed to a stacker reclaimer to pile the bulk material for storage.

The processed chips and the residuals would be conveyed to a stacker reclaimer with a capacity of 2,000,000 cubic feet for storage. Biomass fuel and bark from the debarking drum would be conveyed to a storage pile for use as fuel for the dryer

Table 2-6. Feedstock Specifications

Form of Feedstock Received (Annual Percentage By Weight)	
Chips (including Sawdust)	54%
Roundwood	46%
Roundwood (As Received)	
Biomass Length	8 feet to 50 feet
Biomass Diameter	3 inches to 40 inches
Moisture Content	35 - 50%
Bark Content	Up to 12%
Required Capacity	31.6 MT/hour ^a
Residuals (As Received)	
Chip Size Distribution (Assumed)	—
> 4 inches	4%
3/8 inches to 4 inches	90%
< 3/8 inches	6%
Chip Moisture Content	35%
Sawdust Moisture Content	55%
Required Capacity	39.6 MT/hour
Biomass Fuel^b (As Received)	
Max Particle Size	6 inches
Moisture Content	15% to 40%

Notes:

^a MT/hour = metric tons per hour.

^b Biomass fuel refers to miscellaneous waste debris, bark, and other organic matter generated from commercial forestry and agriculture.

Finished pellets would be conveyed from the pellet mill to **two 1,550-metric-ton silos** for storage and loadout. From the silos, the finished product would be loaded into railcars for transport to the port for shipping. A total of 3000 railcars, with a capacity of 100 metric tons, per year would be required to transport

[illegible]

Rodriguez, Melanie

From: Vaughan Frost, Rita <rfrost@nrdc.org>
Sent: Tuesday, January 21, 2025 11:48 AM
To: Rodriguez, Melanie
Cc: gloria@littlemanila.org; matt@vip209.org; Ector Olivares; Julie Dunning; Mary Elizabeth; Barbara Barrigan-Parrilla; Hammel, Debbie; swolf@biologicaldiversity.org
Subject: 1.21.2025 Non-agenda Comments
Attachments: Final Joint DEIR comments on GSNR wood pellet project 1.20.25.docx (1).pdf; Final GSNR DEIR Comment Letter.pdf

CAUTION: This email originated from outside the Port. Please exercise caution.

Hello Melanie and Port of Stockton commissioners,

As the GSNR DEIR comment period is now closed for their industrial-scale wood pellet production and export project, I would like to send the Port of Stockton commissioners NRDC's and partners' technical comments. Furthermore, I would like to submit a joint comment letter that over 185 organizations and dozens of individuals sent to GSFA on GSNR's DEIR. Please see attached for both. Now that the comment period has closed, we will wait for the final environmental impact report and there is time for other authorities to learn about this project. This is especially true for Stockton, the port, and its surrounding communities.

Please agendize Golden State Natural Resources' wood pellet project and invite scientists to share their findings with the Port of Stockton commissioners. Concerned individuals in Stockton also deserve to have this issue agendized to share their perspective publicly and directly to the port.

Secondly, we would love to request a joint meeting with the Port staff and local partners to discuss any comments the Port of Stockton submitted.

Thank you for your consideration and we look forward to hearing from you.

Respectfully,
Rita Vaughan Frost

Rita Vaughan Frost
Forest Advocate
Nature Program

**NATURAL RESOURCES
DEFENSE COUNCIL**

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January 20, 2025

Dear Mr. McDaniel,

The undersigned 185 organizations, collectively representing hundreds of thousands of members in California, across the United States, and around the world, in solidarity with dozens of individuals, submit these comments strongly opposing the Golden State Natural Resources (GSNR) wood pellet project. After reviewing the draft environmental impact report (DEIR) prepared by the Golden State Finance Authority (GSFA) under the California Environmental Quality Act (CEQA), we are concerned that the project would inflict irrevocable harm to our climate, communities, and forests. **The DEIR is inadequate and should not be certified, and the project should be rejected.**

The analysis included within the DEIR is woefully insufficient, lacking critical details, and riddled with inaccuracies. But even based on GSFA's own analysis in the DEIR, **this project is rife with "significant" adverse impacts.** GSNR's facilities will spark a massive, long-term demand for timber harvesting to support production of wood pellets—threatening devastating impacts on forests, wildlife habitat, and biodiversity. Further, cutting forests and producing wood pellets for international export and combustion in power plants would worsen the climate crisis. Cutting and trucking trees and the production, transportation and storage of pellets would also cause substantial air pollution, noise, and other impacts on communities across California that already shoulder unacceptable levels of pollution.

The claim that this project is necessary for mitigating wildfire risk is wholly unsupported. While addressing wildfires is a compelling need, mitigation can be achieved without the massive emissions and adverse community and wildlife impacts that would come from this project. Furthermore, GSNR plans to partner with a company that has a long track record of environmental violations. As the impact of climate change and risk of destructive wildfires grows more urgent every year, California has no time to waste. California must reject GSNR's false solution.

1. Unacceptable community impacts

GSNR proposes to build two of the country's largest wood pellet production facilities and ship the pellets overseas to Europe and Asia, where they would be burned in converted coal-fired power plants to produce electricity. For the Californian communities of Lassen and Tuolumne counties, where the wood pellet mills will be built and operated, and Stockton, where the wood pellets would be stored and exported, there are many impacts GSFA considers "significant and unavoidable." At the facility in Lassen, which would churn out 700,000 tons of wood pellets every year, GSFA admits that the project's emissions would exceed air pollution control district limits for dangerous air pollutants like particulate matter (PM10 and PM2.5), nitrogen oxide

(NO_x), and carbon monoxide (CO).¹ In doing so, the project will conflict with Lassen County's air quality plans.² The Tuolumne County facility would also conflict with air quality plans, exceeding the annual threshold for CO.³ Emissions of toxic air contaminants will pose serious cancer risks to nearby residents. Indeed, the DEIR found that the GSNR facility-induced individual cancer risk in Lassen County is more than double CEQA's threshold of significance, and in Tuolumne County is more than four times greater than the CEQA significance threshold, even after mitigation.⁴ Finally, at the wood pellet storage and export terminal at the Port of Stockton, the project would create significant NO_x impacts⁵—as well as cumulatively significant PM_{2.5} (fine soot) impacts in an area that is already failing national standards for PM_{2.5}.⁶

California's leaders should be figuring out ways to clean up this already unacceptable air pollution and deny this project that would *exacerbate* existing burdens.

2. Inadequate and counterproductive wildfire mitigation

GSFA believes these “significant and unavoidable” community impacts are justified by its purported objective of wildfire mitigation and forest resilience. However, GSFA fails to demonstrate that the project would mitigate wildfire risk or improve forest resiliency. Rather, the project could well exacerbate the very issues they are trying to address. The proposed logging activity will largely occur in remote areas far from communities, instead of focusing on vegetation management directly in and around communities where it would do the most to reduce wildfire risk to communities. Furthermore, while the DEIR claims that the project would result in increased management of dense forests to address wildfire risk, it categorized only 27% of the project area's forests as “overcrowded”⁷ and an even smaller amount—15.5%—of the project area consists of high-density stands.⁸ Even more tellingly, ~90% of forests that would be “thinned” as part of the project are outside of high density areas,⁹ where the DEIR states that treatment effects would be diminished.¹⁰

¹ Table 3.2-40 Estimated Maximum Daily Operation Criteria Air Pollutant Emissions - Lassen Facility and Project Activities within Lassen County APCD - Mitigated, DEIR 3-2-120–21.

² Lassen County Air Pollution Control District, Rule 6.4 New Source Siting Requirements.

³ Table 3.2-51 Estimated Annual Operation Criteria Air Pollutant Emissions- Tuolumne Facility & Project Activities within Tuolumne County APCD – Mitigated, DEIR 3.2-137–38.

⁴ Tables 3.2-74 Lassen Facility Operation Health Risk Assessment Results – Mitigated, DEIR 3.2-176, and 3.2-80 Tuolumne Facility Operation Health Risk Assessment Results – Mitigated, DEIR 3.2-181.

⁵ Table 3.2-60 Estimated Annual Operation Criteria Air Pollutant Emissions – Port of Stockton and Project Activities within San Joaquin Valley APCD – Mitigated.

⁶ California Air Resources Board, Review of the San Joaquin Valley 2024 Plan for the 2012 12 µg/m³ Annual PM_{2.5} Standard and Amendments to the Agricultural Equipment Incentive Measure and the 1997 15 µg/m³ State Implementation Plan Revision, (2024) (“The San Joaquin Valley Air Basin (San Joaquin Valley or Valley) is classified under the [Clean Air] Act as a serious nonattainment area for the 12 µg/m³ annual PM_{2.5} standard.”). The DEIR falls short in addressing cumulative and social impacts too, which is critical given Stockton's designation as an AB 617 community and disadvantaged community.

⁷ Table 3.7-1, DEIR 3.7-7.

⁸ Appendix B8 Carbon Forest Change Analysis, 1.1.3 Forest Density, X-2–3.

⁹ *Id.* at X-6.

¹⁰ *Id.* at X-2 (“[H]igh density stands may experience great benefits from fuels reduction/thinning treatments due to substantial reductions in tree-tree competition for resources. However, treatments in lower density stands may result in less substantial effects given their already present condition of low tree-tree competition.”).

Furthermore, significant aspects of the project demonstrate that wildfire resilience and forest restoration are far from being the primary drivers to sustain this project. GSFA's proposed facilities in Tuolumne and Lassen counties will increase the pace and scale of logging in the state due to the need to feed mills that would produce 1,000,000 tons of wood pellets every year. Nearly half of the logging would be *additional*: it “would not occur without GSNR’s proposed project” and would log “otherwise merchantable roundwood.”¹¹ Trees up to 10½ feet in circumference—which provide essential wildlife habitat, carbon storage, and numerous other benefits¹²—would be cut down and turned into pellets.¹³ This underscores that this is primarily a pellet production project with some incidental fuel reduction components.

There are much better ways to address wildfire risk and forest resilience. The best available science shows that wildfire is a natural and necessary ecological process in California forests, and that prescribed burns and cultural burning based on traditional ecological knowledge can be useful practices to restore resilience.¹⁴ Further, the best way to protect communities from wildfires is to invest in proven fire-safety retrofits,¹⁵ home hardening,¹⁶ evacuation planning and assistance, increasing access to air filters, and vegetation work in the defensible space immediately surrounding homes and along critical egress and access routes.¹⁷

3. Problematic incentives and collaborators

The project’s high costs will result in forest management driven by economic considerations, rather than ecological ones. The two industrial-scale facilities and one export terminal will cost well over half a billion dollars. GSFA will be pressed to recoup costs for themselves, investors, and debtors, and will likely find that what benefits their bottom line is not what is best for forest and community health. The biomass industry’s shoddy track record in the Southeastern United States and Canada provide additional cause for community concern that profit will win out over all, even legal stringent air quality protections.

This risk is even more glaring given GSNR’s partnership with Drax, a United Kingdom-based company that is the world’s largest bioenergy producer and second-largest wood pellet

¹¹ DEIR ES-1.

¹² See, e.g., James A. Lutz et al., *Ecological Importance of Large-Diameter Trees in a Temperate Mixed-Conifer Forest*, 7 PLOS ONE e36131 (2012).

¹³ DEIR Tables 2-1 and 2.6, specifying roundwood feedstocks up to 40 inches diameter (equals 10.5 feet circumference); DEIR at 2-15 listing exceptions to 30 inch DBH limit

¹⁴ See, e.g., Dominick A. DellaSala et al., *Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus?*, 268 *Biological Conservation* 109499 (2022). <https://doi.org/10.1016/j.biocon.2022.109499>.

¹⁵ See, e.g., Jack Cohen, A More Effective Approach for Preventing Wildland-Urban Fire Disasters, <https://tinyurl.com/4s4es3vw>; National Institute of Building Sciences, Mitigation Saves up to \$13 per \$1 Invested, https://www.nibs.org/files/pdfs/ms_v4_overview.pdf. For a case study highlighting the benefits of home retrofitting for wildfire protection, see FEMA, Mitigation Measures May Have Saved Lahaina’s ‘Miracle’ Home, <https://www.fema.gov/case-study/mitigation-measures-may-have-saved-lahainas-miracle-home>.

¹⁶ See, e.g., David E. Calkin et al., *Wildland-urban fire disasters aren’t actually a wildfire problem*, 120 PNAS e2315797120 (2023), <https://doi.org/10.1073/pnas.2315797120>.

¹⁷ See, e.g., Alexandra D. Syphard et al., *The role of defensible space for residential structure protection during wildfires*, 23 Int’l J. Wildland Fire 1165 (2014), <https://doi.org/10.1071/WF13158>.

manufacturer.¹⁸ Alarming, Drax has a proven track record of exacerbating climate change,¹⁹ harming rural communities,²⁰ and devastating forest ecosystems throughout North America.²¹ Drax's burning of wood pellets back home in the United Kingdom emitted 11.5 million tons of CO₂ in 2023,²² the equivalent of 2,673,805 gas-powered passenger vehicles driven for one year.²³ In 2022, Drax topped the list as the U.K. power sector's single-largest CO₂ emitter.²⁴ Drax-owned wood pellet production facilities in the U.S. Southeast and Canada bring dust,²⁵ 24/7 noise,²⁶ and other negative impacts, including the perpetuation of decades of disproportionate environmental impacts on poor and rural communities.²⁷ Drax also has a history of violating environmental laws designed to protect community health. Most notably, in 2020, regulators fined Drax \$2.5 million over serious air quality breaches at its pellet mill in Gloster, Mississippi.²⁸ But this is just the tip of the iceberg: Drax's wood pellet facilities have been found violating environmental regulations **over 11,000 times** according to an investigation for *The Times*.²⁹ Since 2020, they have violated environmental regulations on average **5 times per day**.³⁰ These violations show what very well could be the future of communities that will live with GSNR-Drax facilities.

4. Contribution to climate catastrophe

Finally, this project does not make sense as "climate mitigation." The project would release substantial climate-heating greenhouse gas emissions at every stage, worsening the climate crisis. The project would significantly increase logging of California's forests, releasing their stored carbon at a time when we must increase forest protection and forest carbon storage. Older

¹⁸ In January 2024, Drax and GSNR signed a memorandum of understanding concerning access to global markets. GSNR, Board of Directors Meeting, (Feb. 28, 2024) 7–14, https://www.rcrcnet.org/sites/default/files/useruploads/Meetings/Misc/2024/2.28.2024_GSNR_BOD_Packet.pdf.

¹⁹ Tom Harrison & Harriet Fox, *Biomass plant is UK's top emitter*, Ember (2023), <https://ember-energy.org/app/uploads/2024/10/Biomass-plant-is-UKs-top-emitter.pdf> ("Drax tops the list as the UK power sector's single largest CO₂ emitter, despite generating only a small share of power.").

²⁰ James L. VanHise, *The Wood Pellet Industry: A Dual Threat to Poor, Rural Communities*, RESILIENCE, Aug. 25, 2023, <https://www.resilience.org/stories/2023-08-25/the-wood-pellet-industry-a-dual-threat-to-poor-rural-communities/>.

²¹ Joe Crowley, *Drax: UK power station still burning rare forest wood*, BBC Panorama, Feb. 27, 2024, <https://www.bbc.com/news/science-environment-68381160>.

²² Drax Group plc, *Committed to the World's Energy Transition*, 50. (2024), . Annual report and accounts 2023. Drax. Retrieved December 6, 2024, from https://www.drax.com/wp-content/uploads/2024/03/Drax_AR23_Interactive.pdf (reporting total Biogenic CO₂ emissions of 11,463 ktCO₂e); <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results> See pg 50, Biogenic CO₂ emissions

²³ EPA, *Greenhouse Gas Equivalencies Calculator*, <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

²⁴ Harrison & Fox, *supra* note 18.

²⁵ Ruby Bell et al., *Pellet Mill Community Impact Survey 17* (2024), https://www.southernenvironment.org/wp-content/uploads/2024/10/Biomass_Report_0924_F.pdf.

²⁶ *Id.*; E. D. Walker et al., *Amplifying concerns: An Exploration of Community Noise Levels in Rural Communities Impacted by Wood Pellet Production*, 17 ENVIRONMENTAL CHALLENGES 101024 (2024).

²⁷ Sara Sneath, *Mississippi biomass facility fined for emitting three times more air pollution than permitted*, Southerly, Feb. 25, 2021, <https://southerlymag.org/2021/02/25/mississippi-biomass-facility-fined-for-emitting-three-times-more-air-pollution-than-permitted/>; Danielle Purifoy, *As the Wood Pellet Industry Grows Across the South, Enviva Targets Alabama and Mississippi for Future Expansion*, SCALAWAG, Oct. 5, 2020, <http://scalawagmagazine.org/2020/10/wood-pellet-environmental-racism-part-two/>.

²⁸ Grant McLaughlin, *MDEQ settles with UK-based Drax Group for air violations at Gloster plant*, Clarion Ledger, Sep. 17, 2024, <https://www.clarionledger.com/story/news/politics/2024/09/17/mdeq-settles-with-drax-group-for-air-pollution-violations-in-gloster/75247217007/>.

²⁹ Camille Corcoran, *US Plants Supplying UK Power Station Broke Green Rules 11,000 Times*, The Times. Nov. 3, 2024, <https://www.thetimes.com/uk/environment/article/us-plants-supplying-uk-power-station-broke-green-rules-11000-times-2q559pwrg>.

³⁰ *Id.* (finding "more than 8,700" violations "since the start of 2020").

trees store more carbon than young growth³¹ so, harvesting wood leads to “forgone” sequestration: carbon storage that would have occurred over time in the uncut forest but never materializes.³² This loss occurs even when accounting for regrowth of the new forest.³³ Significant greenhouse gas emissions and air pollution would also be emitted from the long biomass energy production process: trucking cut trees long distances in hundreds of daily trips, chipping wood and producing pellets, transporting pellets by truck or rail hundreds of miles to ports, then shipping pellets overseas to Asia and Europe, and finally burning the wood pellets in power plants.³⁴ There is a scientific consensus in the U.S. and internationally that burning wood is not carbon neutral. Rather, peer-reviewed literature demonstrates in the “vast majority” of cases, burning forest biomass for energy creates a “carbon debt,” meaning a net emissions increase to the atmosphere,³⁵ even when accounting for purported land-based mitigating factors such as forest regrowth. This is true even if GSNR limited itself to only using forest residuals from thinning projects that would occur anyway.³⁶ Numerous studies show that it takes decades to a century or more for cut forests to re-sequester the amount of carbon emitted from logging and burning woody biomass for energy.³⁷ **As admitted by the DEIR, the carbon emissions from this project would be significant and conflict with meeting California’s climate goals.**

5. Unacceptable Harms to Wildlife and Ecosystems

This massive project poses unacceptable harms to wildlife and ecosystems. The enormous ramp-up of logging/thinning across the vast project area will destroy and degrade wildlife habitat, threatening the future of imperiled and sensitive species. According to the DEIR, 843 special-status species occur or have the potential to occur within the project area,³⁸ including many federally or state listed species such as the Northern spotted owl, great gray owl, fisher, Humboldt marten, gray wolf, Sierra Nevada red fox, and wolverine, as well as the California spotted owl proposed for federal listing.³⁹ The project area encompasses critical habitat for 30 federally listed species, including 20 animal and 10 plant species.⁴⁰ Among many flaws, the

³¹ N. L. Stephenson et al., *Rate of Tree Carbon Accumulation Increases Continuously with Tree Size*, 507 *Nature* 90–93 (2014); Michael Köhl et al., *The Impact of Tree Age on Biomass Growth and Carbon Accumulation Capacity: A Retrospective Analysis Using Tree Ring Data of Three Tropical Tree Species Grown in Natural Forests of Suriname*, 12 *PLOS ONE* e0181187 (2017).

³² Sean L. Maxwell et al., *Degradation and Forgone Removals Increase the Carbon Impact of Intact Forest Loss by 626%*, 5 *Science Advances* eaax2546 (2019).

³³ Sasha Stashwick et al., NRDC, *A Bad Biomass Bet* 3 (2021), <https://www.nrdc.org/sites/default/files/bad-biomass-bet-beccs-ib.pdf>.

³⁴ *Id.*

³⁵ John Gunn et al., Spatial Informatics Group-Natural Assets Laboratory, *Scientific Evidence Does Not Support the Carbon Neutrality of Woody Biomass Energy: A Review of Existing Literature*, Spatial Informatics Group Report 2018-01 (2018), https://www.sig-nal.org/_files/ugd/f5c52e_a51f246c8a854cf594ce47e6d05d9616.pdf.

³⁶ Mary Booth, *Not Carbon Neutral: Assessing the Net Emissions Impact of Residues Burned for Bioenergy*, 13 *Env’t Rsch. Letters* 035001 (2018); Ana Repo et al., *Sustainability of Forest Bioenergy in Europe: Land-Use-Related Carbon Dioxide Emissions of Forest Harvest Residues*, 7 *GCB Bioenergy* 877–87 (Mar. 2014); Niclas Scott Bentsen, *Carbon Debt and Payback Time—Lost in the Forest?*, 73 *Renewable & Sustainable Energy Rev.* 1211–17 (2017).

³⁷ John Stermann et al., *Does wood bioenergy help or harm the climate?*, 78 *Bulletin of the Atomic Scientists* 128 (2022)

³⁸ DEIR 3.3-65 (“643 special status plant species have potential to occur in the working area”); DEIR 3.3-68 (“200 special status wildlife species known or with potential to occur in the working area”)

³⁹ DEIR Table 3.3-14.

⁴⁰ DEIR 3.3-93 (“There is critical habitat designed for 30 federally listed plant (10) and wildlife (20) species in the working area”).

DEIR does not consider the cumulative impacts to special-status species that would result from the project's massive ramp-up of logging/thinning. The construction and operation of the pellet production facilities would cause additional harms such as the destruction of 40+ acres of wetlands at the Lassen pellet facility⁴¹ and impacts to the Stanislaus monkeyflower and other rare plants at the Tuolumne pellet facility⁴². At the Port of Stockton, the DEIR failed to consider or mitigate the foreseeable impacts to marine wildlife of the 29 massive tanker ships that will be transporting pellets each year.⁴³

The DEIR demonstrates the project will have significant detrimental impacts on communities, the climate, forests and wildlife. That is why civil society organizations have strongly opposed the project not once⁴⁴ but twice,⁴⁵ and the local communities that stand to be most impacted are calling out the project's justifications as hollow at best.⁴⁶ The climate crisis requires us to value standing forests for the carbon they sequester and store.⁴⁷ Communities that face overwhelming pollution burdens deserve better than more of the same. GSNR's stated goals may sound lofty and ideal, but they actually pose an imminent threat to our climate, biodiversity, and communities, and they are nothing more than another biomass boondoggle.

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⁴¹ DEIR 3.3-101.

⁴² DEIR 3.3-67; Appendix A at 92.

⁴³ DEIR 3.3-108.

⁴⁴ Scoping Comments on GSNR Wood Pellet Project First NOP. (December 19, 2022), <https://www.biofuelwatch.org.uk/wp-content/uploads/22-12-19-CBD-PFPI-Biofuelwatch-et-al-scoping-comments-on-GSNR-wood-pellet-project-final.pdf>.

⁴⁵ Scoping Comments on GSNR Wood Pellet Project Reissued NOP. (June 30, 2023), <https://www.pfpi.net/wp-content/uploads/2023/06/JointScopingCommentsonGSNRWoodPelletProject63023.pdf>.

⁴⁶ Press Release, Biofuels Watch and PFPI, Groups call on California officials to axe the GSNR wood pellet project. (June 30, 2023), <https://www.pfpi.net/wp-content/uploads/2023/06/NewsRelease-GSNRwoodpelletprojectsign-onletter63023.pdf>.

⁴⁷ Jennifer Skene, NRDC, The true cost of undervaluing our forests, (2023), <https://www.nrdc.org/bio/jennifer-skene/true-cost-undervaluing-our-forests>.

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January 20, 2025

Via email to ceqacomment@gsfahome.org

On behalf of the undersigned organizations, we submit these comments on the Draft Environmental Impact Report (DEIR) for the Golden State Natural Resources Forest Resiliency Demonstration Project (the Project). Under the Project, lead agency Golden State Finance Agency (GSFA) proposes to log forests across Northern and Eastern California to produce wood pellets at two facilities in Lassen and Tuolumne counties. From there, the wood pellets would be transported to the Port of Stockton, where they would be loaded onto ships bound for Europe and Asia, and ultimately burned in overseas power plants. The entity carrying out this Project, Golden State Natural Resources (GSNR), plans to partner with Drax, a United Kingdom-based company that has a long track record of devastating forest ecosystems throughout North America.

While addressing the risk wildfires pose to our communities is a compelling need, the DEIR fails to adequately explain how this Project would achieve that goal and ignores scientific evidence that the Project could actually exacerbate fire risk. Tellingly, the DEIR fails to evaluate any alternatives that would actually reduce wildfire risk, such as prescribed fire, home hardening, and defensible space work. The DEIR simultaneously admits that cutting forests and producing wood pellets for international export and combustion would worsen the biodiversity and climate crises. It also admits that the Project would cause significant air pollution and other impacts on communities across California that already shoulder unacceptable levels of pollution. Because the DEIR violates the California Environmental Quality Act (CEQA) for numerous reasons, GSFA should not certify it, and should instead reject this harmful Project.

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I. The DEIR fails to show that the Project is likely to achieve its primary goal of mitigating wildfire risk

The DEIR fails to justify how the Project will achieve what it claims to be the main goal: reducing the risk wildfires pose to California communities. Rather, the DEIR simply assumes that the Project will achieve this goal.

A project description must state the “objectives sought by the proposed project.”¹ The statement of objectives “should include the underlying purpose of the project and may discuss the project benefits.”² This is not a meaningless requirement: “A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary.”³

The DEIR states that the Project “is a response to the growing severity of wildfires in the western United States, which has been exacerbated by hazardous excess fuel loads in forests, and the need to enhance economic activity in California’s rural counties.”⁴ Likewise, six of the DEIR’s eleven stated objectives explicitly mention “wildfire” risks, while two other objectives implicitly implicate it:

- Sustainably reduce excess fuel loads in high hazard landscapes at greatest risk of catastrophic wildfire.
- Reduce catastrophic wildfire risks associated with ladder fuels, crown fires, insect pathogens, and disease.
- Enhance ecological functions, watershed functions, wildlife habitat, biodiversity, and overall forest health and resilience by increasing tree spacing, reducing evapotranspiration water loss, reducing nutrient resource competition, improving the growth rates and health of larger and healthier trees, and increasing carbon sequestration and storage.
- Reduce environmental harms resulting from uncontrolled wildfires, including emissions of greenhouse gases and air pollutants.
- Facilitate opportunities to reintroduce traditional tribal and cultural forest management practices and prescribed burning to maintain healthy forest conditions.
- Reduce risk to first responders, residents, visitors, communities, and natural and manmade infrastructure from catastrophic wildfire.
- Reduce firefighting suppression costs, healthcare costs related to wildfire smoke, and impacts and losses to manmade infrastructure and communities.
- Protect California’s high-value, iconic recreational resources, National and State Parks and other priceless natural resources from catastrophic wildfires.

¹ Cal. Code Regs. tit. 14, div. 6, ch. 3 (hereafter, CEQA Guidelines), § 15124(b).

² CEQA Guidelines, § 15124(b).

³ CEQA Guidelines, § 15124(b).

⁴ DEIR 2-1.

- Offset the high costs of wildfire management activities by making productive use of low-value forest materials generated from those activities.
- Improve economic and community development and create jobs in historically overlooked and underinvested California communities.
- Support the development of new and emerging technologies that use biomass fuels to address climate change, such as Bioenergy with Carbon Capture and Storage (BECCS).⁵

Strikingly, the DEIR never defines what it means by “wildfire risk” reduction. The U.S. Forest Service defines wildfire risk as a metric of wildfire likelihood, intensity, exposure, and susceptibility, for example.⁶ But the DEIR is silent on this critical question—an error that permeates the rest of the document.

Given the emphasis on reducing wildfire risk, it would stand to reason that the DEIR would explain in sufficient detail and substantiate how the Project would actually achieve those objectives. However, it fails to do so. The DEIR first errs in failing to set forth an adequate baseline of current forest management conditions, such that the impact of the Project can be measured against what is currently occurring in the Project area. The DEIR also fails to explain how each of the Project’s three components—creating wood pellets from “GSNR Biomass Only Thinning,” “harvest residuals,” and “mill residuals”—would achieve these key objectives. In particular, the DEIR fails to engage meaningfully in an analysis about the complex and rapidly evolving science of forest management. And even putting aside that failure, the DEIR fails to explain how *this Project* will achieve its goals with a quantitative or qualitative analysis, especially given that the vast majority of proposed thinning will take place in low and moderate density forests.

A. The DEIR does not provide a sufficient baseline for evaluating the Project’s potential impacts on wildfire risk

CEQA requires that an EIR identify baseline environmental conditions.⁷ The baseline should be based upon existing conditions and reasonable forecasting.⁸ These conditions must be described “from both a local and regional perspective.”⁹ The DEIR’s wildfire section’s Environmental Setting section (DEIR 3.16.1) purports to establish this baseline, but provides insufficient information to give decision makers an accurate sense of the Project area’s actual wildfire risks. By failing to establish a sufficient baseline regarding wildfire risk, the DEIR also calls into question the analysis of related impacts, namely air quality and greenhouse gas effects.

⁵ DEIR 2-2 to 2-3.

⁶ U.S. Forest Service, *Wildfire Risk to Communities*, available at <https://wildfirerisk.org/understand-risk/>.

⁷ CEQA Guidelines, § 15125(a).

⁸ CEQA Guidelines, §§ 15125(a), 15144.

⁹ CEQA Guidelines, § 15125(a)(1).

The environmental setting in the wildfire section of the DEIR focuses on the specific sites of the three facilities, not the broader Project area forests where feedstock will be acquired via thinning.¹⁰ Notably, the sections' figures and maps—outlining fire hazard severity zones and fire history—only extend roughly five miles beyond the facilities.¹¹ In contrast, the potential feedstock areas are massive, encompassing an area of roughly 40,000 square miles.

What GSFA does provide on this broader Project area is so general as to be almost meaningless. The “Sustainable Forests Management Projects” section provides almost no information, other than to note that “the wildfire environment throughout the feedstock acquisition area and site-specific details varies considerably.”¹² The “Slopes/Topography” section provides zero details about the terrain across the project area, instead sticking to generalities about how different types of topography impact fire risk.¹³ The Vegetation Communities section is similarly vague.¹⁴ Although GSFA does cross-reference the more detailed Section 3.3, Biological Resources, which identifies vegetation types and land covers across the region, neither section outlines specific fire patterns of specific vegetation. The “Climate, Water, and Wind” analysis is even more shockingly barebones, comprised of only four sentences that say little beyond the fact that weather exists and varies across a landscape.¹⁵ The section makes no attempt to describe what general wind or weather patterns are across the feedstock areas, nor how these impact local fire risks.

The omission of detailed analysis hamstrings decision makers' efforts to understand the baseline conditions. These missing particulars are critical to understanding the baseline wildfire risk conditions. Consider just one of the missing datasets: vegetation-specific fire considerations. The links between forest species composition and fire risk and intensity are well documented.¹⁶ By failing to provide information on vegetation risk, locally or regionally, GSFA has failed to meet CEQA's baseline requirements.

Perhaps even more concerning, the DEIR fails to provide details on the scale or type of ongoing, *existing* forest and fire management activities within the feedstock acquisition area. Over one million acres were treated for wildfire protection across the state of California in

¹⁰ DEIR 3.16-3–7.

¹¹ DEIR 3.16-39–49.

¹² DEIR 3.16-3.

¹³ DEIR 3.16-1.

¹⁴ DEIR 3.16-1.

¹⁵ DEIR 3.16-2.

¹⁶ See, e.g., Park et al., *Impact of Tree Species Composition on Fire Resistance in Temperate Forest Stands* (2024) 572 *Forest Ecology and Management* 122279; Popović et al., *Tree Species Flammability Based on Plant Traits: A Synthesis* (2021) 800 *Science of The Total Environment* 149625.) Species and plant communities flammability varies greatly, even within a single genus. (See, e.g., Eamon A. Engber & J. Morgan Varner, *Patterns of Flammability of the California Oaks: the Role of Leaf Traits* (2012) 42 *Canadian Journal of Forest Research* 1965; Varner et al., *Understanding Flammability and Bark Thickness in the Genus Pinus Using a Phylogenetic Approach* (2022) 12 *Scientific Reports* 7384).

2023.¹⁷ More than half of these treatments occurred in the counties the DEIR identifies as within the potential feedstock acquisition area.¹⁸ The DEIR does not contain any information on these treatments, other than in the most general framings,¹⁹ or in reference to government plans.²⁰ As to commercial harvesting, the DEIR provides a 2021 summary of board feet harvested statewide.²¹ Not only is this information now out of date, board feet harvested is a particularly unhelpful metric for assessing the state of the forest, given that wildly divergent harvesting methods across equally divergent acreage of forest can result in the same volume of timber. As to management activities, the DEIR provides a chart listing the acres of treatments from 2004 to 2018.²² It is unclear why this information is limited to 2018 and earlier, and whether the acreage is total across the state or in the Project area. The DEIR must provide more recent and more precise information that explains what the harvesting/management baseline is for the Project area forests.

The present state of forest management activities and planned future activities—independent of the Project—is a key aspect for understanding the existing conditions and wildfire risk. Without this baseline of information regarding ongoing management and risk, it is impossible to assess the impact of the Project on wildfire risk and forest health.

B. The DEIR fails to adequately analyze the Project’s effect on wildfire risk

Specifically, the DEIR fails to adequately explain how the three major aspects of the Project would mitigate wildfire risk. As the DEIR states, the Project would source biomass for wood pellets three ways:

- 1) from “GSNR Biomass Only Thinning”—thinning that would be “undertaken by GSNR, or on GSNR’s behalf, and which would not occur without” the Project;
- 2) from “harvest residuals”—biomass from third-party logging, thinning, and other harvests that would occur “regardless” of the Project;
- 3) and from “mill residuals”—byproducts of commercial lumbermills²³

The GSNR Biomass Only Thinning (i.e., thinning caused by the Project) will create 30% of total feedstock for the Tuolumne Facility and 52% of total feedstock for the Lassen Facility—roughly 45% of the estimated overall feedstock that would be processed by the Project.²⁴ About 54% of the feedstock would come from harvest residuals, which will comprise

¹⁷ California Wildfire & Forest Resilience Task Force, Interagency Treatment Dashboard (Dec. 2024) (showing 1,058,306 acres of wildfire and landscape resilience treatments across the state).

¹⁸ *Ibid.*; DEIR 3.3-3-4.

¹⁹ E.g., DEIR 3.0-4-6; see also DEIR 4.0-6.

²⁰ E.g., DEIR 3.16-7.

²¹ DEIR 3.0-3.

²² DEIR 3.0-3-4.

²³ DEIR 2-3.

²⁴ DEIR 2-11, 2-43 (548,294 metric tons of feedstock for Tuolumne), 2-37 (1,183,890 metric tons of feedstock for Lassen).

69% of total feedstock for the Tuolumne Facility and 47% of total feedstock for the Lassen Facility.²⁵ Mill residuals would comprise the remaining 1% of Project feedstock. Despite the DEIR’s intense focus on wildfire risk reduction as a goal of the Project, as explained below, the document does not adequately explain how each of these aspects of the Project would achieve that goal.

1. GSNR Biomass Only Thinning

The DEIR fails to adequately explain how the “GSNR Biomass Only Thinning” aspect of the Project will reduce wildfire risk, instead just assuming throughout the document that it will do so. The GSNR Biomass Only Thinning portion of the Project will “generally include” 10- to 2,000-acre thinning projects for “hazardous fuel reduction,” “construction of shaded fuel breaks,” “reforestation site preparation,” and “fire, insect, or disease salvage harvests.”²⁶ GSNR will coordinate with public and private landowners to identify “potential” hazardous fuel reduction projects,²⁷ and will prioritize, “where feasible,” removing fire fuels from forest lands that cause or threaten substantial increase risk.²⁸ Overall, the DEIR estimates that 85,779 acres of forest land will be “treated” annually.²⁹

a. The DEIR fails to include or analyze the best available science on wildfire risk reduction and forest health

As an initial matter, the DEIR fails to properly explain the scientific basis for its claims about thinning as a method of wildfire risk reduction. It refers vaguely to “treatments” as reducing the risk of wildfires.³⁰ But the DEIR does not explain what is encompassed by the term “treatments” in this context and instead just concludes: “In response to this issue, the proposed project will remove excess woody biomass from forested lands located in and around California to reduce the threat of catastrophic wildfires and environmental degradation.”³¹

At most, the DEIR cites a handful of studies, sprinkled throughout a later section on greenhouse gas impacts, referring to the concept.³² But even as to those studies, the DEIR provides scant information about what the “treatments” in the studies were and how they relate to the conclusions in the studies. Did the treatments involve prescribed fire or thinning or both or something else entirely? If there was “thinning” in the studies, what type was it? In short, the DEIR never clearly sets forth the agency’s understanding of the science of forest treatments

²⁵ DEIR 2-7

²⁶ DEIR 2-10.

²⁷ DEIR 2-11.

²⁸ DEIR 2-12.

²⁹ DEIR 2-11, 3.7-53.

³⁰ See, e.g., DEIR 2-1 (“The need to increase the pace and scale of wildfire fuel reductions treatments in this area is widely recognized by both the federal and state governments.”).

³¹ DEIR 2-2.

³² See, e.g., DEIR 3.7-55 (“Forest fuel treatments can result in substantial reductions in emissions produced by wildfires (Brodie et al. 2024, North and Hurteau 2011, Stephens et al. 2012a).”).

and wildfire risk, instead choosing to gloss over this subject with one-line statements about how “treatment” is needed.

The DEIR also omits evidence showing that the Project’s approach may be counterproductive. Different forest management measures—for example, thinning at different levels of intensity, prescribed fire, thinning plus prescribed fire, allowing managed wildland fire to burn—affect fire behavior differently. Critically, research indicates that forest thinning, particularly the intensive thinning like that proposed by this Project, can be counter-productive by actually increasing the rate of wildfire spread and intensity.

The DEIR fails to disclose and evaluate published research indicating that the Project’s proposed thinning operations would not achieve the Project’s wildfire resilience and forest health objectives and may be counter-productive to these objectives. These studies which were left out of the DEIR show that

- 1) thinning can increase wildfire rate of spread and intensity, and post-fire salvage logging can exacerbate wildfires;
- 2) California’s mixed conifer and ponderosa pine forests naturally have a wide range of densities and higher-density, higher-biomass forests do not burn more severely;
- 3) human-caused climate change is the primary driver of the increases in burned area, extreme fire weather, and community destruction from wildfire in California, such that thinning treatments are largely ineffective under extreme fire weather conditions;
- 4) increased forest density does not equate to lower resilience and thinning can be counter-productive for forest health;
- 5) the most effective way to protect communities from wildfire is home hardening and defensible space vegetation work; and
- 6) the majority of area burned and homes destroyed in California is occurring in shrubland ecosystems, not forests.

i. Thinning can increase wildfire rate of spread and intensity, and post-fire salvage logging can exacerbate wildfires

Published research suggests not only that thinning may be ineffective for mitigating wildfire, but that it may actually exacerbate wildfire. However, the DEIR failed to disclose or evaluate studies specifically indicating that thinning can increase fire intensity and rate of spread by opening up the canopy and creating hotter and drier conditions, and that post-fire salvage logging can exacerbate wildfires.³³ This is an extremely problematic omission.

Notably, Lesmeister et al. (2019) found that “[t]hinned forests have more open conditions, which are associated with higher temperatures, lower relative humidity, higher

³³ DellaSala, D, et al., Have Western USA fire suppression and megafire active management approaches become a contemporary Sisypheus? 268 Biological Conservation 109499 (2022).

wind speeds, and increasing fire intensity. Furthermore, live and dead fuels in young forest or thinned stands with dense saplings or shrub understory will be drier, making ignition and high heat more likely, and the rate of spread higher because of the relative lack of wind breaks provided by closed canopies with large trees.”³⁴ Similarly, in a 30-year study including California conifer forests, Lesmeister et al. (2021) found that dense forests with the highest biomass (highest “fuel loading”), highest canopy cover, and highest tree densities, on average had *lower* wildfire severities compared to more open-canopied, lower-density forests resulting from thinning/logging operations. The scientists explained these differences in fire intensity based on the fact that closed-canopy, high-biomass, structurally complex conifer forests “maintain cooler, more temperate microclimates and provide an insulating effect on temperatures,” whereas more open forests resulting from thinning/logging have “hotter, drier, and windier microclimates.”³⁵

In the largest scientific analysis ever conducted on tree removal and wildfire severity in dry forests of the western U.S., Bradley et al. (2016) found that pine and mixed conifer forests with the lowest levels of protection from logging/thinning tend to burn more severely, while forests with the most protection from logging/thinning burned least severely even though they are generally identified as having the highest overall levels of biomass and fuel loading.³⁶ Similarly, Hanson (2021) found that in dry forests in the ~380,000-acre Creek fire of 2020 in the southern Sierra Nevada, forests with previous logging for “fuels reduction”—specifically, mechanical thinning and post-fire logging—had overall higher fire severity than unmanaged forests. A study in southwestern Oregon forests by Zald and Dunn (2018) found that private industrial forests subjected to intensive harvest experienced higher wildfire severity than more intact forests with a greater proportion of older forest areas.³⁷ The study suggested that “intensive plantation forestry characterized by young forests and spatially homogenized fuels, rather than pre-fire biomass, were significant drivers of wildfire severity.” Other studies have found that areas that are salvage-logged and re-planted after wildfire burn more severely than comparable unmanaged areas.³⁸

Further, on-the-ground experience shows that large areas of forest thinning did not protect towns that were largely destroyed in recent wildfires: Paradise (Camp fire of 2018),

³⁴ Lesmeister, D.B., et al., Mixed-severity wildfire and habitat of an old-forest obligate, 10 Ecosphere Article e02696 (2019).

³⁵ Lesmeister, D.B., et al., Northern spotted owl nesting forests as fire refugia: a 30-year synthesis of large wildfires, 17 Fire Ecology Article 32 (2021).

³⁶ Bradley, C.M. et al., Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States? 7 Ecosphere e01492 (2016). <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1492>

³⁷ Zald, Harold S.J. and Christopher J. Dunn, Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape, 28 Ecological Applications 1068 (2018).

³⁸ Thompson, J.R. et al., Reburn severity in managed and unmanaged vegetation in a large wildfire, 104 Proceedings of the National Academy of Sciences of the United States of America 10743 (2007); Drohan, J., Exploring Patterns of Burn Severity in the Biscuit Fire in Southwestern Oregon, 88 Fire Science Brief 1 (2010).

Greenville (Dixie fire of 2021), Grizzly Flats (Caldor fire of 2021), and Berry Creek and Feather Falls (North Complex fire of 2020), among others.³⁹

- ii. *California's mixed conifer and ponderosa pine forests naturally have a wide range of densities, and higher-density, higher-biomass forests do not burn more severely, contrary to the DEIR's claims*

The Project is premised on the assertion that California's forests are overcrowded and that denser forests burn at higher severity and must be thinned. First, as to the density assertion, research finds that California's mixed conifer and ponderosa pine forests historically were characterized by a wide range of tree densities, including intermediate to high median tree density and abundant small trees.⁴⁰ For example, a reconstruction of historical forest structure in Sierra mixed conifer forests based on 1865-1885 survey data concluded that historical forests "were open and park-like in places, but generally dense" with smaller pines and oaks numerically dominant.⁴¹ Forest understories were also highly variable, but were generally dense, with shrub cover averaging 34% and conifer seedling/sapling density averaging 837 per hectare within forested areas.⁴² Second, studies in California mixed conifer and ponderosa pine forests have found that higher-density forests with higher canopy cover (i.e., forests that are the most long-unburned) burn mostly at low/moderate severity, and do not have higher proportions of high-severity fire than less fire-suppressed forests.⁴³ For example, in the Rim fire of 2013,

³⁹ See generally John Muir Project comments on Caldor Fire Restoration Project, Sept. 25, 2024.

⁴⁰ Baker, W.L., Historical forest structure and fire in Sierran mixed-conifer forests reconstructed from General Land Office survey data, 5 *Ecosphere* 79 (2014); Hanson, C.T. and D.C. Odion, Historical forest conditions within the range of the Pacific fisher and spotted owl in the Central and Southern Sierra Nevada, California, USA, 36 *Natural Areas Journal* 8 (2016); Baker, W.L. and C.T. Hanson, Improving the use of early timber inventories in reconstructing historical dry forests and fire in the western United States, 8 *Ecosphere Article* e01935 (2017); Baker, William L. and Mark A. Williams, Land surveys show regional variability of historical fire regimes and dry forest structure of the western United States, 28 *Ecological Applications* 294 (2018); Baker, W.L. et al., Improving the use of early timber inventories in reconstructing historical dry forests and fire in the western United States: reply, 9 *Ecosphere Article* e02325 (2018).

⁴¹ Baker, William L. and Mark A. Williams, Land surveys show regional variability of historical fire regimes and dry forest structure of the western United States, 28 *Ecological Applications* 294 (2018).

⁴² Hanson and Odion (2016) at 16.

⁴³ Odion, D. et al., Patterns of fire severity and forest conditions in the Western Klamath Mountains, California, 18 *Conservation Biology* 927 (2004); Miller, J.D. et al., Trends and causes of severity, size, and number of fires in northwestern California, USA, 22 *Ecological Applications* 184 (2012); van Wagtenonk, J.W. et al., Factors associated with the severity of intersecting fires in Yosemite National Park, California, USA, 8 *Fire Ecology* 11 (2012); Meigs, G.W. et al., Influence of topography and fuels on fire refugia probability under varying fire weather in forests of the US Pacific Northwest, 50 *Canadian Journal of Forest Research* 636 (2020).

Lydersen et al. (2013) found that mature mixed-conifer and ponderosa pine forests with a greater small tree density tended to burn with lower severity.⁴⁴

- iii. *Human-caused climate change is the primary driver of the increases in burned area, extreme fire weather and community destruction from wildfire, and thinning treatments are largely ineffective under extreme fire weather conditions*

The DEIR fails to include the large body of research that has identified anthropogenic climate change as the primary driver of the increases in area burned, extreme fire weather, and community wildfire destruction in California in recent decades.⁴⁵ This is an important omission because to the extent that the amount of forest area burned is primarily a function of weather and climate, with little relationship to the amount of forest area thinned,⁴⁶ the effects of such thinning projects will be largely irrelevant. And indeed, some studies find that hotter and drier conditions due to climate change, resulting in drier vegetation, have driven *nearly all* of the increase in summer forest-fire area in California.⁴⁷

Anthropogenic climate change is also increasing the prevalence of extreme fire weather in California—periods of high temperatures, low humidity, and strong winds—which are conducive to rapidly spreading fires that are often not feasible to suppress. Wildfires burning during extreme fire weather are responsible for most of area burned regionally and most community destruction by wildfire.⁴⁸ One recent study found that fast-moving wildfires

⁴⁴ Lydersen, J.M. et al., Severity of an uncharacteristically large wildfire, the Rim Fire, in forests with relatively restored frequent fire regimes, 328 *Forest Ecology and Management* 326 (2014).

⁴⁵ Abatzoglou, J.T. and Williams, A.P., Impact of anthropogenic climate change on wildfire across western US forests, 113 *Proceedings of the National Academy of Sciences* 11770 (2016); Westerling, A.L.R., Increasing western US forest wildfire activity: sensitivity to changes in the timing of spring, 371 *Phil. Trans. R. Soc. B* 20150178 (2016); Williams, A., et al., Observed impacts of anthropogenic climate change on wildfire in California, 7 *Earth's Future* 892 (2019), <https://doi.org/10.1029/2019EF001210>.

⁴⁶ Schoennagel, Tania et al., Adapt to more wildfire in western North American forests as climate changes, 114 *PNAS* 4582 (2017); Law, Beverly E. et al., Creating strategic reserves to protect forest carbon and reduce biodiversity losses in the United States, 11 *Land* 721 (2022), <https://doi.org/10.3390/land11050721>; Reilly, M.J., et al., Cascadia Burning: The historic, but not historically unprecedented, 2020 wildfires in the Pacific Northwest, USA, 13 *Ecosphere* e4070 (2022).

⁴⁷ Williams, A., et al., Observed impacts of anthropogenic climate change on wildfire in California, 7 *Earth's Future*, 892 (2019); Turco, Marco et al., Anthropogenic climate change impacts exacerbate summer forest fires in California, 120 *PNAS* e2213815120 (2023).

⁴⁸ Abatzoglou, J.T. and A.P. Williams, Impact of anthropogenic climate change on wildfire across western US forests, 113 *Proceedings of the National Academy of Sciences* 11770 (2016); Williams, A.P. et al., Observed impacts of anthropogenic climate change on wildfire in California, 7 *Earth's Future* 892 (2019); Abatzoglou, John T. et al., Human-related (footnote continued on next page)

comprise less than 3% of all U.S. fire events but account for 89% of all structures damaged or destroyed.⁴⁹ Importantly, research indicates that thinning treatments are largely ineffective under extreme fire weather conditions.⁵⁰

- iv. *Increased forest density does not equate to lower resilience, and thinning can be counter-productive for forest health*

The DEIR fails to include or evaluate numerous studies indicating that increased forest density does not broadly equate to lower resilience as measured by tree mortality and physiological stress levels.⁵¹ Many studies find that the relationships between tree density and resilience are complex. As a result, studies caution against forest management treatments focused on thinning trees that can be counter-productive to forest resilience.⁵² For example, Carnwath and Nelson (2016) reported that management activities to reduce tree density with the purpose of increasing stand resilience often target trees that may be the most drought-

ignitions concurrent with high winds promote large wildfires across the USA, 27 *International Journal of Wildland Fire* (2018); Goss, M. et al., Climate change is increasing the likelihood of extreme autumn wildfire conditions across California, 5 *Environmental Research Letters* 1094016 (2020); Jain, P. et al., Observed increases in extreme fire weather driven by atmospheric humidity and temperature, 12 *Nature Climate Change* 63 (2022).

⁴⁹ Balch, J.K., et al. 2024. The fastest-growing and most destructive fires in the U.S. (2001-2020), 386 *Science* 425 (2024).

⁵⁰ Lydersen, J.M. et al., Severity of an uncharacteristically large wildfire, the Rim Fire, in forests with relatively restored frequent fire regimes, 328 *Forest Ecology and Management* 326 (2014); Cary, G.J. et al., Importance of fuel treatment for limiting moderate-to-high intensity fire: findings from comparative fire modelling, 32 *Landscape Ecology* 1473 (2017); Dellasala, D.A. et al, Accommodating mixed-severity fire to restore and maintain ecosystem integrity with a focus on the Sierra Nevada of California, USA, 13 *Fire Ecology* 148 (2017); Calkin, D.E. et al., Wildland-urban fire disasters aren't actually a wildfire problem, 120 *Proceedings of the National Academy of Sciences of the United States of America* e2315797120 (2023).

⁵¹ Van Gunst, K.J. et al., Do denser forests have greater risk of tree mortality: a remote sensing analysis of density-dependent forest mortality, 359 *Forest Ecology and Management* 19 (2016); Carnwath, G.C. and C.R. Nelson, The effect of competition on response to drought and interannual climate variability of a dominant conifer tree of western North America, 104 *Journal of Ecology* 1421 (2016); Clyatt, K.A. et al., Historical spatial patterns and contemporary tree mortality in dry mixed-conifer forests, 361 *Forest Ecology and Management* 23 (2016).

⁵² Keeling, E.G. et al., Effects of fire exclusion on forest structure and composition in unlogged ponderosa pine/Douglas-fir forests, 327 *Forest Ecology and Management* 418 (2006); D'Amato, A.W. et al., Effects of thinning on drought vulnerability and climate response in north temperate forest ecosystems, 23 *Ecological Applications* 1735 (2013); Six, D.L. et al., Management for mountain pine beetle outbreak suppression: does relevant science support current policy? 5 *Forests* 103 (2014).

resilient, producing counter-productive results.⁵³ Studies investigating how previous fire affects subsequent bark beetle outbreaks have found that high-severity fire reduces forest susceptibility to future outbreaks.⁵⁴ Seidl et al. (2016) recommended that managers “embrace rather than reduce disturbance-created variability” and suggest that thinning/logging is likely to homogenize forests and exacerbate bark beetle outbreaks. Instead, many studies recommend that restoring forest health is best achieved by allowing natural disturbance processes—such as wildfire, drought, and native bark beetle outbreaks—to proceed to increase forest resilience and adaptation under climate change.⁵⁵ The DEIR does not discuss any of these important studies.

- v. *The most effective way to protect communities from wildfire is through home hardening and vegetation trimming immediately surrounding homes and other structures*

The DEIR fails to evaluate the large body of research and on-the-ground experience demonstrating that the most effective way to protect communities from wildfires is to reduce the ignitability of structures themselves through proven “home hardening” retrofits paired with vegetation trimming within 60 to 100 feet of homes and other structures—not logging/thinning forests.⁵⁶ California-focused studies have found that vegetation trimming beyond 100 feet from

⁵³ Carnwath, G.C. and C.R. Nelson, The effect of competition on response to drought and interannual climate variability of a dominant conifer tree of western North America, 104 *Journal of Ecology* 1421 (2016).

⁵⁴ Kulakowski, D. et al., Stand-replacing fires reduce susceptibility of lodgepole pine to mountain pine beetle outbreaks in Colorado, 39 *Journal of Biogeography* 2052 (2012); Black, S.H. et al., Do bark beetle outbreaks increase wildfire risks in the Central U.S. Rocky Mountains: Implications from recent research, 33 *Natural Areas Journal* 59 (2013); Seidl, R. et al., Spatial variability in tree regeneration after wildfire delays and dampens future bark beetle outbreaks, 113 *PNAS* 13075 (2016).

⁵⁵ Beudert, Burkhard et al., Bark beetles increase biodiversity while maintaining drinking water quality, 8 *Conservation Letters* 272 (2015); Baker, William L., Transitioning western U.S. dry forests to limited committed warming with bet-hedging and natural disturbances, 9 *Ecosphere* e02288 (2018); Zachmann, L.J. et al., Prescribed fire and natural recovery produce similar long-term patterns of change in forest structure in the Lake Tahoe basin, California, 409 *Forest Ecology and Management* 276 (2018); Baker, W.L. et al., Harnessing natural disturbances: A nature-based solution for restoring and adapting dry forests in the Western USA to climate change, 6 *Fire* 428 (2023).

⁵⁶ Cohen, J.D., Preventing disaster: home ignitability in the Wildland-Urban Interface, 98 *Journal of Forestry* 15 (2000); Cohen, J.D. and R.D. Stratton, Home destruction examination: Grass Valley Fire, U.S. Forest Service Technical Paper R5-TP-026b (2008); Gibbons, P. et al., Land management practices associated with house loss in wildfires, 7 *PLoS ONE* e29212 (2012); Scott, J.H. et al., Examining alternative fuel management strategies and the relative contribution of National Forest System land to wildfire risk to adjacent homes – A pilot assessment on the Sierra National Forest, California, USA, 362 *Forest Ecology and Management* 29 (2016); Calkin, David E. et al., Wildland-urban fire disasters aren’t actually a wildfire problem, 120 *PNAS* e2315797120 (2023).

homes and other structures provide *no additional benefit* for protecting those structures from burning.⁵⁷

A 2023 study co-authored by U.S. Forest Service scientists concluded that “[t]he best way to make existing wildfire-vulnerable developments ignition resistant is to work within the limited area of the ‘home ignition zone’—a home and its surroundings within 100 feet (which may include neighboring homes).”⁵⁸ The scientists emphasized that addressing the community wildfire destruction crisis will require changing from a “focus on the wildlands to one centered on the structure and its immediate surroundings,” highlighting that the current approach “primarily directed toward fuel treatments in natural areas” is ineffective and insufficient.

Similarly, Calkin et al. (2014) emphasized that treating wildland fuels does not “measurably impact the susceptibility of homes to ignition and subsequent destruction.”⁵⁹ The study highlighted that home losses are increasing despite enormous investments in modifying wildland fuels because home susceptibility to wildfire is a direct function of their ignitability, which is dependent of the small area of the “home ignition zone” which “is independent of fire behavior in the nearby wildlands.” According to the study, “research demonstrates a home’s characteristics in relation to its immediate surroundings principally determine home ignition potential during extreme wildfires.” The scientists emphasized that “[o]vercoming perceptions of wildland-urban interface fire disasters as a wildfire control problem rather than a home ignition problem, determined by home ignition conditions, will reduce home loss.”

In a California-focused study, Syphard et al. (2014) found that structures were more likely to survive a fire if the vegetation was treated in the defensible space immediately adjacent to them.⁶⁰ These scientists reported that “[t]he most effective treatment distance varied between 5 and 20 m (16–58 ft) from the structure, *but distances larger than 30 m (100 ft) did not provide additional protection*, even for structures located on steep slopes. The most effective actions were reducing woody cover up to 40% immediately adjacent to structures and ensuring that vegetation does not overhang or touch the structure.” Subsequent studies have reaffirmed the important role of defensible space adjacent to structures.⁶¹ The DEIR ignores all of this.

⁵⁷ Syphard, A.D. et al., The role of defensible space for residential structure protection during wildfires, 23 International Journal of Wildland Fire 1165 (2014).

⁵⁸ Calkin, David E. et al., Wildland-urban fire disasters aren’t actually a wildfire problem, 120 PNAS e2315797120 (2023).

⁵⁹ Calkin, David E. et al., How risk management can prevent future wildfire disasters in the wildland-urban interface, 111 PNAS 746 (2014).

⁶⁰ Syphard, A.D. et al., The role of defensible space for residential structure protection during wildfires, 23 International Journal of Wildland Fire 1165 (2014).

⁶¹ Syphard, Alexandra D. et al., The importance of building construction materials relative to other factors affecting structure survival during wildfire, 21 International Journal of Disaster Risk Reduction 140 (2017)

- vi. *The majority of area burned and homes destroyed in California is occurring in shrubland ecosystems, not forests*

The DEIR fails to include or evaluate studies showing that most area burned and homes destroyed in California is occurring in shrubland ecosystems, not forests. For example, Calhoun et al. (2021) reported that 64% of burned area in California from 2000 to 2020 was outside of conifer forests, with shrublands comprising the highest percentage: shrublands (38%), conifer (36%), hardwood (17%) and grasslands (9%).⁶² Recent data similarly shows that in 2024 the majority of large wildfires in California (71.5%) burned outside of conifer forests, with most large wildfires (53.7%) burning in shrub and scrub ecosystems.⁶³ In the Western U.S., 79.5% of all destroyed buildings have been lost in shrubland and grassland fires.⁶⁴ In California, this is related to the fact that 52.3% of the intermix WUI (Wildland-Urban Interface) is grassland and shrubland compared with 30.1% in forest.⁶⁵

b. The DEIR fails to adequately show that *this Project* would meaningfully reduce wildfire risk and improve forest health

Even assuming, for purposes of argument, that the scientific literature supported GSFA's claims on thinning generally, the DEIR fails to adequately show that *this Project* would meet its objectives of reducing wildfire risk. As an initial matter, there is no quantitative or qualitative analysis showing how the Project would affect wildfire risk, aside from analyses prepared solely for air quality effects. The DEIR should provide this analysis. Furthermore, the DEIR fails to explain the relationship between the Project's proposed thinning levels and its wildfire risk reduction and forest resilience objectives. How do the "treatments" used in the studies cited in the DEIR compare to what is being proposed for this Project? How do they differ? Likewise, the DEIR fails to explain how the Project's proposal to thin primarily low density and moderate density forests supports its goals of wildfire risk reduction and forest health.

- i. *The DEIR lacks any quantitative or qualitative analysis of the Project's effects on wildfire risk*

Shockingly absent from the DEIR is any sort of quantitative or qualitative analysis showing that the Project will indeed have the primary intended effect of reducing wildfire risk. Again, at most, the agency's *assumption* that the Project will reduce wildfire risk would have to be inferred indirectly from the greenhouse gas and air quality sections, where the DEIR refers to avoided emissions from wildfire. In those sections, the DEIR refers to the Forest

⁶² Calhoun, Kendall L. et al., Spatial overlap of wildfire and biodiversity in California highlight gap in non-conifer research and management, 28 Diversity and Distribution 529 (2022).

⁶³ Wildland Mapping Institute, <https://wildlandmaps.users.earthengine.app/view/fires24>.

⁶⁴ Radeloff, Volker C. et al., Rising wildfire risk to houses in the United States, especially in grasslands and shrublands, 382 Science 702 (2023).

⁶⁵ *Id.*

Vegetation Simulator used to estimate air pollutants.⁶⁶ Using that model, the DEIR claims that the Project will reduce, via reductions in wildfires, PM_{2.5} by 2,938 tons,⁶⁷ and greenhouse gases by 4.5 MMTCO₂e over a 20-year lifespan.⁶⁸ Implicit in these claims is the idea that the Project will reduce wildfires in some manner, but the DEIR never explains that conclusion. The agency must “connect the dots” so that “the public [can] discern the analytic route the agency traveled from evidence to action.”⁶⁹

And even taking the DEIR’s flawed air quality and greenhouse gas emission figures at face value, it does not appear that GSFA believes that the Project will reduce wildfire much. The amount of greenhouse gases supposedly avoided is roughly 0.06% of California’s greenhouse gas inventory.⁷⁰ While that may be a cumulatively significant amount of greenhouse gases, whether it is indicative of meaningful wildfire avoidance is entirely unclear. Is the supposed reduction in greenhouse gases from avoided wildfires due to fewer acres being burned, and if so, how many fewer? Or is it due to fire intensity or severity, and if so, what is the expected reduction? Where would changes in wildfire patterns be most likely occur, and would they be near communities or not? The DEIR did not engage in this sort of analysis.

Indeed, looking at the methodology for the Forest Vegetation Simulator, it is clear that the model does not provide the necessary information for the public to understand how the Project would affect wildfire risk. As an initial matter, the model uses the likelihood of wildfires as an *input*: The agency used historic fire perimeters to estimate the proportion of the Project area likely to experience wildfire over 20 years.⁷¹ Thus, the model—by definition—is not estimating the acreage of wildfire likely to be reduced by the Project. Rather, the DEIR is assuming that the same acreage will be burned with and without the Project. Nor is the model providing insight in the severity of wildfires with and without the Project, as the model apparently assumes high severity fire.⁷² At most, the results of the model give some insight into the DEIR’s predicted air quality with and without the Project. But because the results are couched in terms of discussing air quality and greenhouse gases, the public gets no real sense of what the Project means for reducing wildfire risk itself, the key goal of the project.

⁶⁶ See DEIR 3.7-38.

⁶⁷ DEIR 3.2-171.

⁶⁸ DEIR 3.7-55–56; 3.7-59.

⁶⁹ *People ex rel. Bonta v. County of Lake* (2024) 105 Cal.App.5th 1222, 1234 (quoting *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 404) (cleaned up).

⁷⁰ See DEIR 3.7-55–56, 3.7-59. As explained below, this figure is flawed for multiple reasons. Importantly, while the analysis concludes greenhouse gas emissions are avoided, it does not conclude that greenhouse gas emissions are reduced overall, as discussed in section VII.C.2.d.

⁷¹ DEIR 3.7-53 (estimating that 24%, or 1.2% annually, of the Project area will burn).

⁷² DEIR Appen. B8, X-10.

ii. *The DEIR fails to show the relationship between the Project's proposed thinning levels and its wildfire risk reduction and forest resilience objectives*

The DEIR uses Stand Density Index (SDI) values to determine how much the Project will thin in the GSNR Biomass Only Thinning areas to achieve “desired” stand densities in three forest types.⁷³ However, the DEIR fails to show the relationship between these proposed thinning levels and the Project’s wildfire risk reduction and forest resilience objectives. First, the DEIR does not show that SDI is an accepted method for setting thinning levels to achieve “wildfire resilience and overall forest health.”⁷⁴ The DEIR cites only two rather old studies, the more recent of which, Long and Shaw (2012), never even mentions wildfire, nor includes wildfire resilience or reducing wildfire risk as reasons for reducing forest density to specified SDIs. Sherlock (2007), an unpublished technical report, does not show that reducing stand densities to prescribed SDIs will reduce wildfire risk and calls SDI estimates “preliminary.”

Second, the DEIR fails to explain the basis for the extreme levels of thinning that will happen under the Project. Notably, the DEIR proposes to thin forest stands to densities (SDI values) that are much lower—and require more intensive tree cutting—than recommended by the two studies the DEIR cites. This is particularly important with regard to the greenhouse gas and biological resources impacts of the Project since this more intensive thinning will result in higher greenhouse gas emissions and greater threats to forest ecosystem health. Sherlock (2007) indicates that the *maximum* amount of thinning that should be done to prevent tree mortality⁷⁵ would result in an SDI of 314 to 358 for ponderosa pine stands, and 417 to 495 for white fir stands.⁷⁶ However, the DEIR indicates that the Project would thin these forest types to much lower SDIs: 200 for ponderosa pine and 300 for white fir stands.⁷⁷ Long and Shaw (2012) estimate that the average SDImax (maximum SDI) for mixed conifer forests is 550, and acknowledge that other researchers suggest 750 SDImax would “avoid substantial density related mortality (self-thinning).” This level of thinning would result in an SDI of 330 or 450, respectively. However, the DEIR indicates that the Project would cut mixed conifer stands to a much lower SDI of 225.⁷⁸ The DEIR is also unclear on how these thinning levels are set in the Forest Vegetation Simulator modeling using the “Thin From Below” cutting control parameter, which can be set in multiple ways such as THINBTA (Thin from below to a trees per acre target) and THINSDI (Thin to a Stand Density Index target).

⁷³ DEIR Appen. B8 Table 3, X-4.

⁷⁴ DEIR Appen. B8 Table 3, X-5.

⁷⁵ According to Sherlock (2007), “Maintaining stocking near the lower limit of self-thinning should provide for minimum mortality losses.” This indicates that the maximum amount of cutting for achieving the desired SDI to avoid mortality, or the “lower limit of self-thinning,” is 55% of SDI max.

⁷⁶ Sherlock (2007) at Table 1.

⁷⁷ DEIR Appen. B8 Table 3.

⁷⁸ DEIR Appen. B8 Table 3.

iii. *The DEIR fails to explain how thinning primarily low density and moderate density forests achieves the Project's stated goals*

The DEIR repeatedly states that the primary objective and justification for the Project is the need to log/thin to reduce the density of “overcrowded” forest stands to increase wildfire resilience. Citing Sherlock (2007), the DEIR indicates that “overcrowded” forests are those with a Stand Density Index (SDI) greater than 55% of maximum SDI.⁷⁹ As detailed above, the DEIR’s use of SDI is problematic and scientifically unsupported. However, even using this problematic SDI measure, the DEIR estimates that *only roughly a quarter* of forests (27%) across the Project area are considered “overcrowded”: 20% have an SDI between 55-85% of maximum and just 7% have an SDI greater than 85% of maximum SDI.⁸⁰ An even smaller amount—15.6%—of the Project area consists of high-density stands.⁸¹

Furthermore, the DEIR indicates that the Project will not focus thinning in the highest density forests or “overcrowded” stands in the Project area. Rather the Project will conduct thinning across the three dominant forest types and three densities (equaling nine forest stand types) in proportion to their total acreage in the Project area.⁸² Thus, for areas that the Project proposes to be “treated,” *only 10.2% qualify as high density*, with 37.2% and 52.6% of areas proposed to be treated qualifying as medium and low density, respectively.⁸³

The DEIR fails to explain how focusing the vast majority of thinning in low and moderate density forests will help achieve the Project objectives. The DEIR itself states that thinning “benefits” are less in low to moderate density stands: “Existing forest structure and stand density influences the level of benefits from forest treatments. For example, overcrowded, high density stands may experience great benefits from fuels reduction/thinning treatments due to substantial reductions in tree-tree competition for resources. However, treatments in lower density stands may result in less substantial effects given their already present condition of low tree-tree competition.”⁸⁴ Thinning these low and moderate density “non-overcrowded” forests would not fit or meet the Project objectives, but would have adverse biological, greenhouse gas, and other impacts as discussed elsewhere in this letter.

Notably, information in the DEIR indicates that if the Project (including the GSNR Biomass Only Thinning and Harvest Residuals projects) were to only thin in high density forests, the Project would run out of feedstocks in seven years.⁸⁵ The projected lifespan of the

⁷⁹ DEIR 3.7-7. Citing Sherlock (2007), the DEIR states that tree density-related mortality begins at 55% of maximum SDI and peak mortality occurs at 85% of maximum SDI. *Ibid.*

⁸⁰ DEIR Table 3.7-1.

⁸¹ DEIR Appen. B8, Table 2.

⁸² DEIR Appen. B8 X-5.

⁸³ See DEIR Appen. B8, Table 5 (percentages calculated using the figures in Table 5).

⁸⁴ DEIR Appen. B8 X-2.

⁸⁵ These calculations are based on the data in Appendix B8 Table 5 showing the acres required to be treated annually to achieve feedstock requirements for GSNR Biomass Only (footnote continued on next page)

Project is 20 years. In short, there is a substantial disconnect between the Project objectives and the Project’s apparent ability to meet and deliver on those objectives. This is further evidence that the Project is just a logging boondoggle and not a legitimate effort to address wildfire risk.

2. Harvest Residuals

The DEIR also fails to meaningfully explain how roughly half of the Project—turning “harvest residuals” into pellets—would help reduce wildfire risk. As to “harvest residuals,” the DEIR contains one short paragraph on this topic, without any citations or other substantiation:

Currently, this material is often left in the forest to decay or disposed of by open burning. Each of these disposal methods can have significant adverse consequences, including wildfire ramifications and criteria pollutant and carbon emissions. In particular, harvest residuals left in the forest to decay can be the source of a higher fire hazard because they concentrate the dead fuel loading on the ground, increasing PM2.5 emissions and the risk of a crown fire. In the absence of a wildfire, these harvest residuals decompose slowly over time producing atmospheric methane and CO2 over the next 15-20 years. Open burning greatly reduces fuel loading and wildfire hazard, but creates uncontrolled criteria pollutant emissions, including PM2.5, as the piles are burned. Pile burning rarely completely consumes 100% of the piled material so the unburned component continues to decompose over time producing methane and CO2 emissions.⁸⁶

First, the basis for the DEIR’s assumption that harvest residuals are “often” left to decay or open burned is not explained. The DEIR needs to demonstrate how it developed this information. Is this direct information from companies and other entities that conduct harvests? Are there laws or regulations governing the treatment of harvest residuals, and if so what do they say? What exactly is “open burning,” and how does that differ from prescribed burning? Where is the evidence that piles of residues are a meaningful source of methane? Along those same lines, the DEIR must describe what the current baseline is for residuals from the harvests in this area. Are *all* residuals left or burned? Some? Most? In short, what is the current state of affairs as to harvest residuals, based on what information? (See *supra*, section I.A.) This information is directly relevant to whether this part of the Project will actually reduce wildfire risk.

Second, the DEIR—because it fails to explain the baseline for this aspect of the Project in any detail—also fails to explain how the proposed use of “harvest residuals” would be better for wildfire risk than what is otherwise expected to happen. (Likewise, the DEIR fails to make this comparison throughout the document in other impact areas as well, such as air quality and greenhouse gas emissions.) Rather, the DEIR seems focused primarily on the “GSNR Biomass Only Thinning” aspect of the Project, even though a significant portion—perhaps a majority—of the pellets would be sourced from harvest residuals. The DEIR must analyze this major

Thinning projects and then applied to the scenario where only high-density forests are thinned to supply feedstocks for the entire project.

⁸⁶ DEIR 2-4.

aspect of the Project, including whether and how this part of the Project supports the main goals of the Project and what alternatives there are to achieve those same goals. (See *infra*, section IV.)

Finally, the DEIR fails entirely to consider whether using harvest residuals to create pellets will incentivize further harvests that would not otherwise occur. (See *infra*, section VI.B.) “Residuals” can include low-diameter tops and limbs but can also include boles (roundwood). It seems possible that much of the existing stock of harvest residuals will not be suitable for use as pellet feedstock, which could drive additional harvesting of larger-diameter material. This is a logical outgrowth of the economic incentives that this aspect of the Project could cause and should be fully disclosed and analyzed.

3. Mill Residuals

A small portion of the feedstock for the Project would come from mill residuals, which are byproducts of commercial lumbermills.⁸⁷ The DEIR makes no claim that producing pellets from mill residuals would reduce wildfire risk, nor does there appear to be any reasonable basis to do so.

Furthermore, there is also no reason to believe that using mill residuals to create feedstock would “[o]ffset the high costs of wildfire management activities by making productive use of low-value forest materials generated from those activities.”⁸⁸ The DEIR provides no explanation of how the revenue generated from mill residuals would be funneled back into the system to “offset” wildfire management activities, rather than just being pocketed by third parties.

In sum, the DEIR fails to show that the Project is likely to achieve its primary goals of mitigating wildfire risk and improving forest health. As explained in more detail below, this error permeates the rest of the analysis and renders the document inadequate as a matter of law.

II. The DEIR fails to properly describe the environmental setting for the community surrounding the Port of Stockton

An EIR must describe the environmental setting for the project, which is made up of “the physical environmental conditions in the vicinity of the project” viewed from “a local and regional perspective.”⁸⁹ The Project proposes to build a wood pellet storage and export facility at the Port of Stockton, from which wood pellets would be shipped overseas.⁹⁰ The community surrounding the Port, called South Stockton, has a rich history but is also one of the most disadvantaged and polluted communities in California, and has long faced environmental racism like that being proposed by this Project.

⁸⁷ See, e.g., DEIR 3.2-54.

⁸⁸ DEIR 2-3.

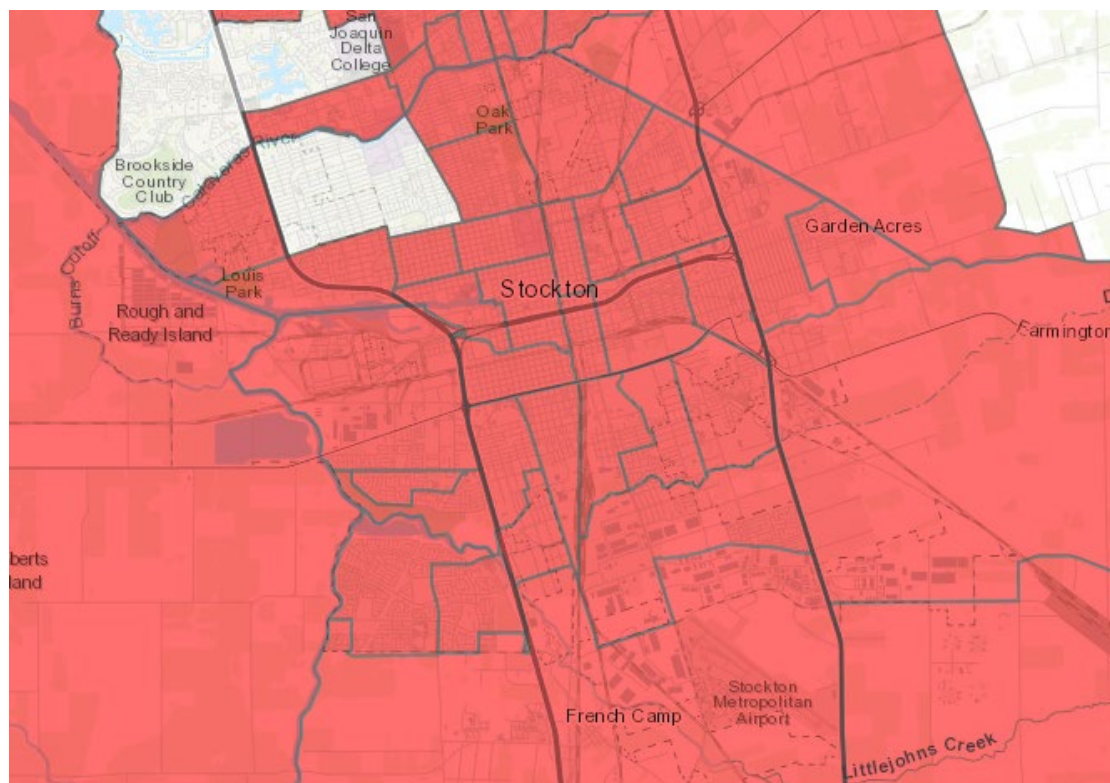
⁸⁹ CEQA Guidelines, § 15125(a), (c).

⁹⁰ DEIR 2-49.

Between the 1920s and 1960s, South Stockton's community held the largest population of Filipinos in the world, outside of the Philippines, who helped establish California's agricultural dominance. They called their community "Little Manila." As Filipinos from Stockton fought injustice in the fields by forming farm labor unions, their activism led to the establishment of one of the largest social justice movements in American history: the joining of the Filipino farm labor union and Mexican farm labor union (led by Cesar Chavez) to form the United Farm Workers. In the 1960s, the construction of the Crosstown Freeway destroyed much of the Little Manila community as well as the city's Chinatown (Stockton had the third largest Chinatown in California) and Japantown. The Crosstown Freeway project also sandwiched a community between the Port and the freeway.

Today, the neighborhoods surrounding the Port have high percentages of communities of color, including Latine, Asian American, and Black communities. And much of Stockton qualifies as a "disadvantaged community" under SB 535 based on geographic, socioeconomic, public health, and environmental hazard criteria.

SB 535 – Port of Stockton



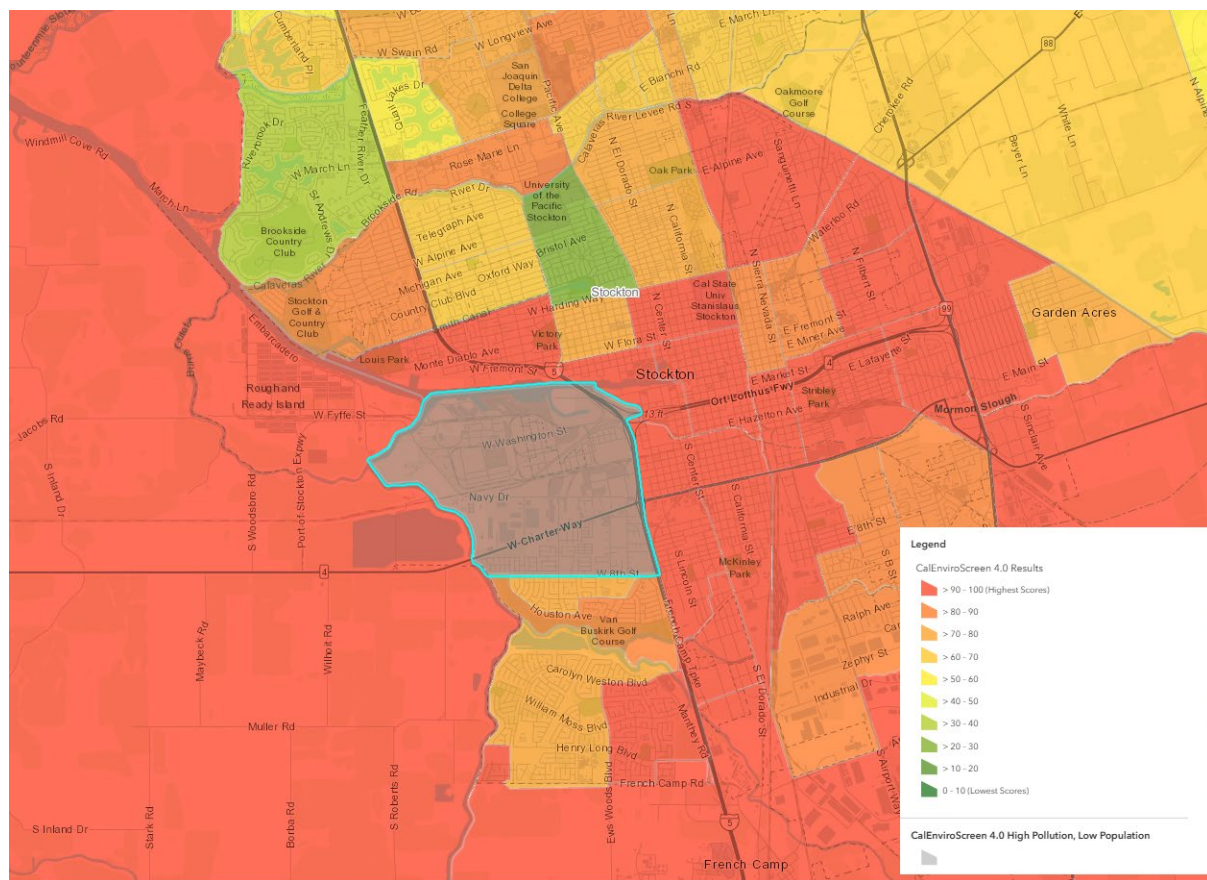
SB 535 Disadvantaged Communities 2022

SB 535 Disadvantaged Communities 2022 (Census Tracts)



Furthermore, due to surrounding freeways, the Port, railyards, and industrial sources, South Stockton faces some of the highest pollution burdens in the state, including high exposure to diesel particulate matter. In fact, the community surrounding the Port is in the 99th percentile under the CalEnviroScreen 4.0 criteria for environmental justice communities. It is also in the 99th percentile for pollution burdens in the state. As a result, the communities surrounding the Port community have extremely high rates of asthma, low birth weights, and high levels of cardiovascular diseases. Regionwide, the picture is equally grim. San Joaquin County is in extreme nonattainment for ozone and non-attainment for fine particulate matter.⁹¹

CalEnviroScreen 4.0 – Port of Stockton



⁹¹ Ambient Air Quality Standards & Attainment Status, <https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainment-status/>.

Census Tract: 6077000801 (Population: 7,624)

The results for each indicator range from 0-100 and represent the percentile ranking of census tract 6077000801 relative to other census tracts.

Overall Percentiles	
CalEnviroScreen 4.0 Percentile	99
Pollution Burden Percentile	99
Population Characteristics Percentile	92
Exposures	
Ozone	47
Particulate Matter 2.5	58
Diesel Particulate Matter	91
Toxic Releases	83
Traffic	63
Pesticides	70
Drinking Water	42
Lead from Housing	52
Environmental Effects	
Cleanup Sites	90
Groundwater Threats	97
Hazardous Waste	77
Impaired Waters	99
Solid Waste	85
Sensitive Populations	
Asthma	96
Low Birth Weight	82
Cardiovascular Disease	89
Socioeconomic Factors	
Education	87
Linguistic Isolation	71
Poverty	84
Unemployment	53
Housing Burden	59

The DEIR barely mentions this critical background, including a grand total of five sentences on this issue—one of which incorrectly claims the CalEnviroScreen score for the community around the Port is 54:

The Port is located within a census tract that is designated as both a disadvantaged community pursuant to SB 535 (CalEPA 2022) and a Community Air Protection Program Community pursuant to AB 617 (CARB 2023a). It is not, however, located in a Low Income Community pursuant to AB 1550 (CARB 2023b).

Designated as a disadvantaged community, the census tract that surrounds the Port suffers from a combination of economic, health, and environmental burdens that include poverty, high unemployment, pollution, and other hazards.

The Port is also within one of 19 communities that CARB has selected to participate in the Community Air Protection Program, necessitating the community implement a Community Emissions Reduction Program (CERP) to address its air quality issues, including the burden of high cumulative exposure to pollutants.

The Port achieves a score of 54 on the CalEnviroScreen (OEHHA 2023). The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the State.⁹²

The DEIR's cursory description of this South Stockton community is inadequate—and in some places totally incorrect—and violates CEQA. This faulty environmental setting makes it impossible for the DEIR to adequately analyze the Project's significant air quality, hazard, noise, and other impacts on South Stockton.

III. GSFA's programmatic EIR for the feedstock acquisition aspect of the Project is legally deficient and cannot support further approvals without additional EIRs

A program EIR is appropriate when “a series of actions that can be characterized as one large project” and are related “[g]eographically,” as “logical parts in the chain of contemplated actions,” in “connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program,” or as “individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.”⁹³ A program EIR may only be used to approve subsequent activities if the later activity's environmental effects were sufficiently examined in the program EIR.⁹⁴

CEQA requires that a program-level EIR provide an in-depth analysis of a large-scale project, looking at effects “as specifically and comprehensively as possible.”⁹⁵ Furthermore, “[d]esignating an EIR as a program EIR . . . does not by itself decrease the level of analysis otherwise required in the EIR.”⁹⁶ A program-level EIR must contain “extensive, detailed evaluations” of a plan's effects on the existing environment.⁹⁷ Moreover, CEQA's policy of favoring early identification of environmental impacts does not allow agencies to defer

⁹² DEIR 3.2-24.

⁹³ CEQA Guidelines, § 15168(a).

⁹⁴ CEQA Guidelines, § 15168(c).

⁹⁵ CEQA Guidelines, § 15168(a), (c)(5).

⁹⁶ *Friends of Mammoth v. Town of Mammoth Lakes Redevelopment Agency* (2000) 82 Cal.App.4th 511, 533; see also CEQA Guidelines, § 15160.

⁹⁷ *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 358. See also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 721–723 (where the record before an agency contains information relevant to environmental impacts, it is both reasonable and practical to include that information in an EIR).

analysis of a plan's impacts to some future EIR for specific projects contemplated by that plan.⁹⁸ As the CEQA Guidelines explain, "[t]iering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration."⁹⁹ Tiering "is not a device for deferring the identification of significant environmental impacts that the adoption of a [specific project] can be expected to cause."¹⁰⁰

CEQA likewise requires analysis of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."¹⁰¹ An EIR may not "chop[]" the analysis into smaller sub-projects as doing so could "submerge[]" environmental impacts.¹⁰² This is especially true here, where project-level reviews cannot analyze the cumulative impacts of thousands of thinning projects on biological resources. (See *infra*, section VII.J.)

The DEIR claims to be a "project-level environmental review of the 'Wood Pellet Production' and 'Transport to Market' phases of the project, while serving as a program EIR for the 'Feedstock' phase."¹⁰³ The DEIR proposes harvesting activities across tens of thousands of acres, spread throughout three states and multiple types of forests. Although the DEIR cites the criteria supporting a programmatic EIR, it does not explain which of those factors justify a programmatic EIR here.¹⁰⁴ GSFA must explain why it thinks a programmatic EIR is appropriate in this instance.

Furthermore, although GSFA acknowledges that further review under CEQA will be necessary for any feedstock acquisition projects, it appears that the agency intends to rely heavily on this program EIR for those later projects.¹⁰⁵ But given the level of generality with which the DEIR addresses the feedstock acquisition phase, additional EIRs will certainly be necessary. This EIR evaluates feedstock acquisition impacts only regionally and abstractly, without sufficient site-specific analysis to satisfy CEQA. To the extent that GSFA anticipates approving individual feedstock projects without further EIRs, the DEIR should be revised to include a more detailed impacts analysis and enforceable mitigation measures for environmental impacts now. And even if GSFA plans to prepare further project-level EIRs, this document—even as a programmatic EIR—lack specificity, particularly about the Project's likely effects on wildfire, biological impacts, and greenhouse gas emissions, as explained in those sections of these comments.

⁹⁸ See *Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 282–284; *Christward Ministry v. Superior Court* (1986) 184 Cal.App.3d 180, 194; *City of Redlands v. County of San Bernardino* (2002) 96 Cal.App.4th 398, 409.

⁹⁹ CEQA Guidelines, § 15152(b).

¹⁰⁰ *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182, 199.

¹⁰¹ CEQA Guidelines, § 15378(a).

¹⁰² See, e.g., *Bozung*, *supra*, 13 Cal.3d at pp. 283–284.

¹⁰³ DEIR 1-3.

¹⁰⁴ See DEIR 1-4.

¹⁰⁵ See DEIR 1-4 (describing how no further CEQA documentation may be necessary).

Relatedly, the DEIR further states that GSNR will only accept harvest residual materials from “timber harvest, vegetation management, and forest management operations that have been approved under NEPA, CEQA, or the California Forest Practices Act, (or, for materials originating out-of-state, an equivalent law of that state.)”¹⁰⁶ GSNR projects outside of California “shall undergo environmental review under NEPA or under a law of that state requiring preparation of a document containing essentially the same points of analysis as NEPA.”¹⁰⁷ But it’s not clear what this means for each project or whether that will adequately address all significant impacts.

If GSFA evaluates individual projects under NEPA alone, the analysis—and especially the mitigation—could be deficient. Notably, in 2023, the U.S. Forest Service proposed a NEPA categorical exclusion for a GSNR-related thinning project.¹⁰⁸ Many of the groups commenting here also submitted comments on that proposal, explaining why a categorical exclusion would be inappropriate.¹⁰⁹ And even if full project-level review is required under NEPA, that law does not require implementation of mitigation measures as CEQA does. Therefore, is not clear whether NEPA mitigation measures will be required before GSNR accepts or procures out-of-state feedstock. Further, if these reviews will be performed at a programmatic level, like here, they may not include adequate detailed analysis or mitigation at all. A piecemeal analysis of individual projects will never allow for a proper cumulative impacts analysis (as explained below).

IV. The DEIR’s alternatives analysis is inadequate, inaccurate, and misleading

The fundamental purpose of an EIR’s alternatives analysis is to identify approaches that meet the project objectives, while minimizing significant environmental effects.¹¹⁰ Agencies may not move forward with a project when there are “feasible alternatives” that “would substantially lessen the significant environmental effects of such projects.”¹¹¹ Discussion of these alternatives cannot be merely superficial.¹¹² Rather, the discussion of alternatives should include “sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.”¹¹³ The GSNR DEIR fails to adequately meet this task.

¹⁰⁶ DEIR 2-4.

¹⁰⁷ DEIR 2-15.

¹⁰⁸ U.S. Forest Service, Modoc West Plantation Fuel Reduction Project, <https://www.fs.usda.gov/project/?project=64016&exp=detail>

¹⁰⁹ Katie Bilodeau et al., June 17, 2023, letter to U.S. Forest Service re: Modoc West Plantation Fuel Reduction.

¹¹⁰ *Laurel Heights*, *supra*, 47 Cal.3d at p. 403.

¹¹¹ Pub. Resources Code, § 21002.

¹¹² *Laurel Heights*, *supra*, 47 Cal.3d at pp. 403–406 (finding a DEIR “defective under CEQA” because its “treatment of alternatives was cursory at best”).

¹¹³ CEQA Guidelines, § 15126.6(d).

A. The Project objectives are defined so narrowly as to only allow for the proposed Project

As an initial matter, the DEIR's Project objectives are defined such that only this Project will satisfy them—that is impermissible under CEQA. Caselaw makes clear that project objectives may not be so narrowly drawn that they preclude consideration of reasonable alternatives for achieving the project's underlying purpose.¹¹⁴ Nor may an agency describe a set of project objectives so narrowly that “the results of its alternatives analysis would be a foregone conclusion.”¹¹⁵ Accordingly, a project's statement of objectives should hinge on “the underlying purpose of the project,”¹¹⁶ rather than the “nature” of the project.¹¹⁷

GSFA's list of Project objectives fails this test, because of the artificially narrow eleventh objective: “Support the development of new and emerging technologies that use biomass fuels to address climate change, such as Bioenergy with Carbon Capture and Storage (BECCS).”¹¹⁸ This narrow objective makes the selection of the Project a “foregone conclusion.” No non-biomass-fuels driven activity can fulfill this objective, no matter how much wildfire mitigation, forest resilience, or community economic benefit it might provide. Yet nowhere else does GSFA explain why the support of biofuels is an “underlying purpose” of the Project. Nor does it seem likely to be able to: the Project objective identifies biofuels as a method, i.e., the nature of the Project. GSFA must eliminate this objective or else explain why it is critical to include. Importantly, since the DEIR's own analysis shows it will have significant greenhouse gas emissions, the claim that the Project would support development of technologies that use biomass fuels to address climate change is not borne out.

B. GSFA failed to analyze whether the No Project Alternative fulfills the Project's purposes

Under CEQA, the goal of the “no project alternative” is to “allow decisionmakers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.”¹¹⁹ To that end, the CEQA Guidelines state that the “‘no project’ analysis shall discuss the existing conditions at the time the notice of preparation is published, ... as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans”¹²⁰ The DEIR must describe what would happen if “the project does not proceed.”¹²¹ CEQA guidelines require that the analysis of a no project alternative be based upon realistic conditions. If a determination not to move forward with a proposed project “would result in predictable actions by others, such as the proposal of

¹¹⁴ *North Coast Rivers Alliance v. Kawamura* (2015) 243 Cal.App.4th 647, 668.

¹¹⁵ *We Advocate Through Environmental Review v. County of Siskiyou* (2022) 78 Cal.App.5th 683, 692.

¹¹⁶ CEQA Guidelines, § 15124(b).

¹¹⁷ *Habitat and Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1300 (emphasis omitted).

¹¹⁸ DEIR 2-2–3.

¹¹⁹ CEQA Guidelines, § 15126.6(e)(1).

¹²⁰ CEQA Guidelines, § 15126.6(e)(2).

¹²¹ CEQA Guidelines, § 15126(e)(3)(B).

some other project, this ‘no project’ consequence should be discussed.”¹²² Understanding the scope of such predictable actions may require “some degree of forecasting,” an endeavor in which “an agency must use its best efforts to find out and disclose all that it reasonably can.”¹²³

GSFA states that “[u]nder the No Project Alternative, GSNR would not construct any facilities, nor engage in Sustainable Forest Management projects as described herein to promote forest resiliency and reduce the effects of catastrophic wildfire in California.”¹²⁴ It then concludes that that “[t]he No Project Alternative would not meet any of the project objectives, including wildfire management objectives, biological and cultural resource objectives, and economic and community development objectives.”¹²⁵

GSFA erred in making these statements without providing relevant analysis. GSFA has not demonstrated that its preferred version of “forest management”—harvesting biomass for wood pellets—is the *only* approach that would fulfill the key wildfire mitigation and forest resiliency objectives of the Project. Here, the DEIR’s failure to properly describe the baseline (*supra*, section I.A) is compounded. The DEIR fails to adequately describe what forest management looks like—and will look like in the future, without the Project. Rather, the DEIR states in one sentence that while “other local, state, and federal programs would continue to engage in vegetation management, the significant increase in this activity enabled by the GSNR project would not occur.”¹²⁶ But this one sentence leaves much to be desired. Surely there will be at least some—and in fact, in many cases, significant—forest management on some of these lands, even without the Project. What are the “other local, state, and federal programs” that would “continue to apply”? What are the “predictable actions” that will be taken to enhance wildfire mitigation absent the Project? The DEIR does not say.

It is entirely possible that the “other local, state, and federal programs” (including strategies like prescribed fire and home hardening that have greater scientific certainty of their wildfire resilience benefits¹²⁷) or natural forest growth on its own would achieve the Project’s objectives without the accompanying significant environmental impacts the Project would bring. For example, the Project’s first two objectives are to “[s]ustainably reduce excess fuel loads in high hazard landscapes at greatest risk of catastrophic wildfire,” and “[r]educe catastrophic wildfire risks associated with ladder fuels, crown fires, insect pathogens, and disease.”¹²⁸ The DEIR mentions the numerous local, state, and federal plans to address wildfire

¹²² CEQA Guidelines, § 15126(e)(3)(B).

¹²³ CEQA Guidelines, § 15144.

¹²⁴ DEIR 4.0-6.

¹²⁵ DEIR 4.0-6.

¹²⁶ DEIR 4.0-6.

¹²⁷ See, e.g., Santos et al., *Prescribed Burning Reduces Large, High-Intensity Wildfires and Emissions in the Brazilian Savanna* (2021) 4 Fire 56; Fernandes, *Empirical Support for the Use of Prescribed Burning as a Fuel Treatment* (2015) 1 Fire Science and Management 118; Syphard et al, *The Role of Defensible Space for Residential Structure Protection During Wildfires* (2014) 23 International Journal of Wildland Fire 1165 (finding home hardening treatments within 100 feet of a structure had significant impacts on fire resilience).

¹²⁸ DEIR 4.0-2.

risk, but it does not say whether or how those plans could already satisfy these wildfire risk objectives or why they couldn't be enhanced as needed. Indeed, the state of California has set the goal of treating one million acres per year for wildfire,¹²⁹ a goal which it hit in 2023.¹³⁰ Thus, the DEIR errs in its assumption that the No Project Alternative is synonymous with increased wildfire risk. GSFA must more fully discuss how the Project interacts with statewide and local wildfire plans, including the environmental impacts of relying on the Project (and its admitted adverse impacts on GHGs and emissions, among other harms) instead of existing plans.

Likewise, the third objective is to “[e]nhance ecological functions, watershed functions, wildlife habitat, biodiversity, and overall forest health and resilience by increasing tree spacing, reducing evapotranspiration water loss, reducing nutrient resource competition, improving the growth rates and health of larger and healthier trees, and increasing carbon sequestration and storage.”¹³¹ The DEIR does not address why a No Project Alternative that avoided the Project's proposed thinning would not meet this objective. Indeed, natural forest dynamics could well lead to this same pattern; under both natural disturbance regimes and continued stand development, all of the desired forest functions are potentially possible to achieve without human intervention. Forests with natural disturbance patterns—i.e., primary and old-growth forests—are typically more resilient than those under active forest management regimes, such as even-aged or mono-specific forests. Thanks to the complex web of forest dynamics, older forests possess varied and changing structures that can provide protection against catastrophic disturbances, including wildfire.¹³² Forests that are allowed to grow beyond the canopy closure or stem exclusion phase are capable of self-thinning, leading to decreased tree density and increased resilience against density-dependent mortality.¹³³

GSFA has likewise failed to explain how the No Project Alternative differs in its ability to meet the objective to “[f]acilitate opportunities to reintroduce traditional tribal and cultural forest management practices and prescribed burning to maintain healthy forest conditions.”¹³⁴ Given that the Project includes no prescribed burning or other traditional tribal or cultural forest management activities whatsoever, the No Project Alternative is equivalent to the Project

¹²⁹ DEIR 2-1.

¹³⁰ California Wildfire and Forest Resilience Taskforce, Interagency Treatment Dashboard (Dec. 2024), <https://interagencytrackingsystem.org/>.

¹³¹ DEIR 4.0-2.

¹³² See, e.g., Ian D. Thompson et al., Forest resilience, biodiversity, and climate change (Secretariat of the Convention on Biological Diversity) (2009); Watson et al., *The Exceptional Value of Intact Forest Ecosystems*, (2018) 2 Nature Ecology & Evolution 599–610; Colangelo et al., *Mediterranean Old-Growth Forests Exhibit Resistance to Climate Warming*, (2021) 801 Science of The Total Environment 149684; Kuuluvainen & Aakala, *Natural Forest Dynamics in Boreal Fennoscandia*, (2011) 45 Silva Fennica 823 (finding a high diversity and complexity of forest dynamics within unmanaged forests).

¹³³ Franklin et al., *Disturbances and Structural Development of Natural Forest Ecosystems with Silvicultural Implications, using Douglas-Fir Forests as an Example*, (2002) 155 Forest Ecology and Management 399.

¹³⁴ DEIR 4.0-2.

in this respect. If anything, the “other” plans that the DEIR fails to detail in any meaningful way would promote this goal—not the Project.

What the DEIR does say about the No Project Alternative is based on a set of artificial assumptions that have no grounding in reality and are contrary to CEQA requirements.¹³⁵ The only forest data referenced in the section is “[a] comparison of treated vs. non-treated carbon loss data for a representative forest treatment sample.”¹³⁶ Relying on this data leads to faulty conclusions. For one, the comparison referenced is itself flawed, as discussed below in section VII.C. But even assuming the comparison were proper, forest management activities — including thinnings, prescribed fire, and targeted grazing—will continue with or without the Project.

Without analysis, the public and decision makers cannot accurately determine whether the No Project Alternative would reduce wildfire risk, promote forest resiliency, facilitate traditional forest management practices, impact fire hazards proximate to communities, or fulfill other project objectives.

C. The DEIR’s analysis of the Wood Product Alternative relies on misleading, out of date, and inaccurate data

The DEIR includes an analysis of a Wood Product Alternative, which would swap production of a manufactured wood product—either oriented strand board (OSB) or medium density fiberboard (MDF) —for wood pellets.¹³⁷ GSFA dismisses this alternative, claiming that, compared with the Project, it would have similarly significant environmental impacts, and less fully meet the Project objectives.

The DEIR’s analysis of ability to meet the Project objectives rests on poor data and faulty reasoning. GSFA claims that “softer market demand” for OSB and MDF “is likely to limit the ability for the project to sustain treatment activities.”¹³⁸ GSNR’s one source for this claim is a literature review from 2020, which was relying on data from 2019.¹³⁹ More recent data shows the opposite is now true. Post pandemic, demand for engineered wood products has soared, and is expected to continue to grow through the coming decade given demand for

¹³⁵ CEQA Guidelines, § 15126.6(e)(3)(B) (“[W]here failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.”).

¹³⁶ DEIR 4.0-6.

¹³⁷ DEIR 4.0-6.

¹³⁸ DEIR 4.0-8.

¹³⁹ DEIR 4.0-8 (citing Sanchez et al, Literature Review and Evaluation of Research Gaps to Support Wood Products Innovation (2020), https://bof.fire.ca.gov/media/9688/full-12-a-jiwpi_formattedv12_3_05_2020.pdf).

construction goods for housing starts.¹⁴⁰ In contrast, as discussed below in section IV.E., it is the market for wood pellets that has lagged in recent years.

Even if it were the case that the market for fiberboards underperformed wood pellets, such a rationale is insufficient to render the alternative moot. “The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.”¹⁴¹ Accordingly, courts have held that “when the cost of an alternative exceeds the cost of the proposed project ‘it is the magnitude of the difference that will determine the feasibility of [the] alternative.’”¹⁴²

In these situations, the standard courts apply is “whether the marginal costs of the alternative as compared to the cost of the proposed project are so great that a reasonably prudent property owner would not proceed with the [altered project].”¹⁴³ The DEIR makes no concrete claims about costs or feasibility. It provides no analysis regarding feasibility. And thus it cannot dismiss the wood products alternative.

GSFA also contends that a wood product alternative likely would “not achieve the same degree of wildfire management objectives as the proposed project” because “OSB, and to a lesser extent MDF, are further limited by the size and type of feedstock that can be used in the manufacturing process.”¹⁴⁴ The DEIR explains this limitation: “Small diameter materials, such as forest slash, are generally not used for these products, and would likely either be left to decompose in place or be burned.”¹⁴⁵ This claim relies on two inaccurate premises: first, that OSB and MDF require larger diameter feedstock than wood pellets. And second, that forest slash would be removed and used rather than burned or left in the forest under the proposed Project.

Regarding feedstock size and type, MDF can be made from material as small as a short as one quarter inch, and can even include recycled plywood or OSB.¹⁴⁶ While feedstock for

¹⁴⁰ See, e.g., Virginia McDaniel, U.S. Forest Service, How the Pandemic Drove Up the Cost of Wood Products (May 2022); IndexBox, Oriented Strand Board (OSB) Market to Reach \$16 Billion by 2030, Driven by Growing Demand for Sustainable Building Materials and Cost-Effective Solutions (Mar. 2023) Globe Newswire; APA, 2024 Structural Panel & Engineered Wood Yearbook Now Available (May 2024), <https://www.apawood.org/2024-apa-structural-panel-engineered-wood-yearbook-now-available>, Congressional Budget Office, The Outlook for Housing Starts (Sept. 2024) <https://www.cbo.gov/publication/60727>.

¹⁴¹ *Citizens of Goleta Valley v. Bd. of Supervisors* (1988) 197 Cal.App.3d 1167, 1181.

¹⁴² *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 883 (quoting *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 599).

¹⁴³ *Uphold Our Heritage*, *supra*, 147 Cal.App.4th at p. 600.

¹⁴⁴ DEIR 4.0-8.

¹⁴⁵ DEIR 4.0-8.

¹⁴⁶ Center for Workplace Compliance, Wood Waste Feedstock Specification for Medium Density Fiberboard,
(footnote continued on next page)

OSB is more limited, it too can be made using sawmill waste and small diameter feedstock.¹⁴⁷

Furthermore, wood pellets are rarely produced from residue materials. First, forest residues of the type alluded to by the DEIR's wood product alternatives section—forest slash, woody debris created by both natural disturbance and logging operations—runs the risk of contamination. One study found that “forest residues are often unsuitable for use [in wood pellet production] because of their high ash, dirt and alkali salt content.”¹⁴⁸ Indeed, as the DEIR acknowledges, industry technical specifications limit pellet inorganic ash content to under 2%,¹⁴⁹ levels lower than found in forest residues.¹⁵⁰ Second, there is an insufficient quantity of residues alone to supply the large demands of the proposed Project, and so (as the DEIR acknowledges) the Project would require thinning and harvest of roundwood.¹⁵¹ Thus the wood products would have very similar feedstock requirements—as far as feedstock diameter and contaminant percentage—to the proposed wood pellet production.

The DEIR also diminishes the potential environmental benefits of the wood product alternative by claiming that it would have comparable greenhouse gas impacts to that of the Project.¹⁵² This analysis of the alternative's relative impacts is also flawed. GSFA does acknowledge that “by retaining some carbon within the OSB or MDF wood product, overall GHG emissions may be reduced,” in part due to reduction in overseas shipping emissions, as well as a reduction in “GHG emissions from final use of the product.”¹⁵³ Despite this, the Agency claims that the wood product alternative would exist within the same category of potential impacts as the proposed Project due to the comparable “impacts from forest operations, transportation, and the construction and operation of the production facilities.”¹⁵⁴

In this impact analysis, GSFA attempts a two-part sleight of hand. First, the DEIR fails to provide any quantitative assessment of either greenhouse gas or criteria air pollutant emissions. Without such a quantitative analysis, it is impossible for decision makers to

<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=66bd34b38bc139259713da b05af7d70944ecdd06>.

¹⁴⁷ The National Forest Foundation, California Assessment of Wood Business Innovation Opportunities and Markets Phase II Report, 2015; APA Product Guide: Oriented Strand Board.

¹⁴⁸ Duncan Brack, Chatham House, Woody Biomass for Power and Heat, (2017) p. 3.

¹⁴⁹ DEIR 2-45.

¹⁵⁰ Pellet Fuels Institute Standard Specification for Residential/Commercial Densified Fuel, <https://extension.psu.edu/manufacturing-fuel-pellets-from-biomass>

¹⁵¹ See, e.g., DEIR 2-3, 2-37, 2-44; see also Drouin, *Wood Pellets: Green Energy or New Source of CO2 Emissions?* (Jan. 22, 2015) Yale Environment 360 (“not enough of such waste wood exists to feed the growing demand for wood pellets”); Alavalapati et al., *Forest Biomass-Based Energy*, in *The Southern Forest Futures Project* (Wear & Greis edits., 2013).

¹⁵² DEIR 4.0-7, 4.0-14.

¹⁵³ DEIR 4.0-7.

¹⁵⁴ DEIR 4.0-7, 4.0-14.

determine how comparable the emissions are. Such a quantitative analysis would almost certainly show that the wood product alternative would result in a *significant* reduction in greenhouse gases, due to the diminished transportation-related emissions GSFA expressly grants, and by avoiding the incineration of wood pellets and the resulting enormous greenhouse gas outflow that GSFA only obliquely acknowledges.

Second, GSFA’s analysis underestimates the greenhouse gas emissions from the Project and overestimates emission from the wood product alternative. The vast majority of lifecycle greenhouse gas emissions from biomass wood pellets stems from their combustion—a source that would be avoided by this alternative. Further, a wood product alternative would reduce carbon emissions caused by shipping product from California to Asia and Europe, as well as by shipping OSB to California. The Western U.S. consumes a huge volume of manufactured wood products; one 2018 analysis found that demand for OSB within 500 miles of Northern California comprised almost 3 billion square feet.¹⁵⁵ Yet presently, the closest OSB manufacturers to California are in northern Alberta, Canada and far east Texas—roughly 800 and 1100 miles away from the California border, respectively.¹⁵⁶ A local OSB source could help reduce those sizable transportation emissions.

D. GSFA’s inclusion of a Biochar Alternative is a misleading fiction

The DEIR analyzes a biochar alternative, which it ultimately designates as the required environmentally superior alternative.¹⁵⁷ GSFA should not have included this alternative at all, let alone held it up as the environmentally superior alternative. Leaving aside the considerable environmental impacts of biochar and the inevitable difficulties of upscaling its production and use, biochar production is completely infeasible from an economic perspective. In 2023, the average wood-based biochar sale price was \$131 per metric ton.¹⁵⁸ Production costs are typically upwards of four times that, and can reach costs more than 13 times as high.¹⁵⁹ Researchers have noted the significant headwinds biochar production faces, finding “that profitability and desirability of biochar production and use are highly uncertain.”¹⁶⁰ The inclusion of biochar in the DEIR is a strawman.

¹⁵⁵ Hannah Hammond, The Beck Group Consulting, California Based OSB Manufacturing – Holy Grail of the OSB Industry?

¹⁵⁶ APA, Manufacturer Directory.

¹⁵⁷ DEIR 4.0-8–10, 4.0-21.

¹⁵⁸ Julie Yamamoto, Cloverly, The Ultimate Business Guide to Biochar: Everything You Need to Know (Apr. 2024), <https://cloverly.com/blog/the-ultimate-business-guide-to-biochar-everything-you-need-to-know>.

¹⁵⁹ Nematian et al., *A Techno-Economic Analysis of Biochar Production and the Bioeconomy for Orchard Biomass* (2021) 135 Waste Management 467.

¹⁶⁰ Campion et al., *The Costs and Benefits of Biochar Production and Use: A Systematic Review*, (2023) 408 J. Cleaner Production 137138.

E. The DEIR’s Northern California Site Alternative Layout analysis raises serious concerns regarding the Project’s potential impacts to wetlands and the Project’s economic stability

GSFA analyzes an alternative layout for the Lassen County wood pellet production facility, which it claims would result in “maximum avoidance” of “on-site jurisdictional waters, including wetlands.”¹⁶¹ The proposed layout change would locate the feedstock receiving access points, wood chip storage, and debarking drum further south on the site, within an area designated for log storage under the Project proposal.¹⁶² The Clean Water Act and its related regulations mandates avoidance of jurisdictional waters if practicable.¹⁶³ This alternative demonstrates an environmentally superior layout existed that was feasible and could meet the Project objectives.

The Agency rejects this alternative, on the grounds that it would result in such “reduced efficiency” that the Project would become unprofitable.¹⁶⁴ The DEIR does not explain how or to what extent the amended layout would reduce efficiency. Such an explanation is necessary because no reduced efficiency is manifest in the designs presented. Indeed, the alternative layout appears to be *more* efficient, creating a more efficient path for logs to travel from storage to the pellet mill. As discussed above in section IV.C, an agency cannot dismiss an alternative for reduced efficiency alone. To do that, the agency must demonstrate that “additional costs or lost profitability are sufficiently severe as to render it impractical to proceed.”¹⁶⁵ GSFA has not met that burden.

Moreover, the fact that such a small amendment to the plan supposedly renders the Project so inefficient as to be entirely unable to offset raises questions about whether the economics of the Project make sense in the first place. This question is particularly relevant given the instability of the wood pellets market. In recent years, governments have removed subsidies, and overall wood pellet demand has dropped.¹⁶⁶ The economic headwinds even pushed Enviva Inc.—the world’s largest wood pellet manufacturer—to declare bankruptcy last year.¹⁶⁷ These threats pose far more of a serious threat to the GSNR bottom line than the location of wood chip storage.

¹⁶¹ DEIR 4.0-10.

¹⁶² DEIR 4.0-24; 2-65.

¹⁶³ 40 C.F.R. § 230.10(a) (“[N]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.”).

¹⁶⁴ DEIR 4.0-24.

¹⁶⁵ *Citizens of Goleta Valley, supra*, 197 Cal.App.3d at p. 1181.

¹⁶⁶ Giseburt, *South Korea Slashes Forest Biomass Energy Subsidies in Major Policy Reform* (Dec. 20, 2024) Mongabay; Simet, *Navigating Uncertainty*, (Aug. 15, 2024) Biomass Magazine (“Wood pellet consumption actually declined by a collective 2 million tons from 2022 to 2023, from 32.1 million MT to 30.1 million MT.”).

¹⁶⁷ Pollard, *Wood Pellet Producer Enviva Files for Bankruptcy and Plans to Restructure* (Apr. 4, 2024) AP.

F. The DEIR omits alternatives that better achieve the Project's purpose with fewer environmental impacts

There are several reasonable alternatives that would achieve the Project's fundamental purpose of wildfire risk reduction with fewer environmental impacts and that are better aligned with relevant state plans. The CEQA guidelines establish that an EIR must evaluate a reasonable range of alternatives that could feasibly attain the project's basic objectives while minimizing significant effects.¹⁶⁸ Because GSFA omitted these alternatives from the DEIR, the document does not paint an adequate picture of the range of options available to decision makers.

1. Home hardening/defensible space

GSNR should have considered a home hardening/defensible space program in the Project area focused on reducing wildfire risk for communities through activity in the wildland-urban interface. A home hardening and defensible space program would provide the most effective way to meet the Project's key objective of reducing wildfire risk and would also fulfill most Project objectives. This program would focus on retrofitting homes to make them more ignition-resistant and conducting vegetation thinning in the "home ignition zone" immediately adjacent to homes and other structures, directly in and around communities. A home hardening program would have significantly lower greenhouse gas and biological resources impacts than the Project, as well as providing economic development opportunities for rural communities.¹⁶⁹ And rather than conflicting with state-level plans, a home hardening program could be run in conjunction with the state's home hardening initiatives.¹⁷⁰

2. Prescribed fire

GSFA also omitted an option creating a prescribed fire program. Such a project could focus on protecting communities by targeting controlled burns in the wildland-urban interface and areas of high concern. Prescribed fire is a particularly desirable tool given that fire is an integral part of the Sierra Nevada ecoregion that compromises most of both Lassen and Tuolumne counties.¹⁷¹ There is also the long history of prescribed fire by Indigenous communities of this area.¹⁷² That is why California's wildfire and forest resilience task force expressed a desire to expand "beneficial fire" as a state strategy for addressing increasing

¹⁶⁸ CEQA Guidelines, § 15126.6(a).

¹⁶⁹ Natural Resource Economics, Potential Jobs and Wages from Investments in Defensible-Space Approaches to Wildfire Safety (April 2018),

¹⁷⁰ Cal Fire, California Wildfire Mitigation Program, <https://osfm.fire.ca.gov/committees/california-wildfire-mitigation-program#:~:text=Program%20Overview&text=Known%20as%20the%20California%20Wildfire,public%20buildings%20and%20public%20spaces>.

¹⁷¹ See, e.g., Moody et al., *Fire history and climate influences from forests in the Northern Sierra Nevada, USA* (2006) 2 Fire Ecology 115.

¹⁷² See, e.g., van Wagtenonk et al., Dr. Biswell's Influence on the Development of Prescribed Burning in California (1995) The Biswell Symposium: Fire Issues and Solutions in Urban Interface and Wildland Ecosystems.

wildfire risks.¹⁷³ A prescribed fire alternative could support California’s efforts to treat 400,000 acres annually with prescribed fire,¹⁷⁴ a goal which California has yet to hit.¹⁷⁵ Prescribed fire can also be applied to conifer forests during the natural fire season without thinning beforehand, even in dense, long-unburned forests, which makes this a very cost-effective and ecologically beneficial method of restoring low-intensity surface fire.¹⁷⁶ A prescribed fire alternative would also likely meet many of the fire-focused Project objectives better than the Project—as discussed in section I—yet the DEIR fails to consider such a program at all.

3. Higher economic return wood product

GSFA neglected to consider a higher value wood product alternative. For example, glulam and cross-laminated timber are other engineered wood products that take advantage of small diameter timber. The markets for these engineered wood products have grown exponentially in recent years.¹⁷⁷ Higher value wood products have longer lifespans than lower value products, resulting in longer sequestration periods and diminished end-of-life concerns.¹⁷⁸ GSFA should also examine whether a higher value wood product would allow for a smaller scale operation to become sustainable. And as discussed above with the existing wood product alternative in section IV.C, a high value wood product would have significantly lower greenhouse gas emissions compared with the proposed Project.

4. Lower intensity versions of the Project

The DEIR erred in not considering a lower volume version of the Project. The Project, as proposed, would build two of the largest wood pellet facilities in the United States, collectively producing 1 million metric tons of wood pellets per year, or roughly 12% of the current national production of wood pellets. Because of the acknowledged significant impacts on climate, air quality, wildlife, wetlands, and water quality,¹⁷⁹ the agency should have evaluated a smaller scale version of the Project. Lower-intensity versions of projects are a common CEQA alternative, and are often environmentally superior.¹⁸⁰

¹⁷³ California Wildfire & Forest Resilience Task Force, California’s Strategic Plan for Expanding the Use of Beneficial Fire (Mar. 2022).

¹⁷⁴ California Wildfire & Forest Resilience Task Force, California’s Strategic Plan for Expanding the Use of Beneficial Fire (Mar. 2022).

¹⁷⁵ California Wildfire & Forest Resilience Task Force, Interagency Treatment Dashboard (Dec. 2024), <https://interagencytrackingsystem.org/>.

¹⁷⁶ Baker, William et al., *Harnessing natural disturbances: a nature-based solution for restoring and adapting dry forests in the Western US to climate change*, 6 Fire 428 (2023), <https://doi.org/10.3390/fire6110428>.

¹⁷⁷ Kurzinski et al., *Overview of Cross-Laminated Timber (CLT) and Timber Structure Standards Across the World* (2022), 5 Mass Timber Construction Journal 1.

¹⁷⁸ Gu et al., *Carbon Impacts of Engineered Wood Products in Construction* in *Engineered Wood Products for Construction* (Gong edit., 2021).

¹⁷⁹ DEIR Table ES-1.

¹⁸⁰ See, e.g., *S.F. Baykeeper, Inc. v. State Lands Com.* (2015) 242 Cal.App.4th 202, 213 (EIR analyzed a “Reduced Project Alternative”).

V. The DEIR's "project design features" fail to satisfy CEQA's requirements for mitigation

An EIR must assess the availability of feasible mitigation measures to reduce significant environmental impacts.¹⁸¹ The impacts assessment and consideration of mitigation measures must occur separately; once an EIR has determined whether a project will have a significant impact sans mitigation, then *and only then* can the EIR weigh the feasibility and effectiveness of potential mitigation measures. CEQA forbids "incorporating [] proposed mitigation measures into [the] description of the project and then concluding that any potential impacts from the project will be less than significant."¹⁸²

More specifically, an EIR must not confuse design features inherent to the project with "mitigation measures designed to reduce or eliminate" a project's impacts.¹⁸³ An agency cannot avoid complying with CEQA's standards for mitigation measures by simply declaring that mitigation is part of the project itself. For example, in *Lotus v. California Department of Transportation*, the court invalidated an EIR studying highway construction through a state park full of redwood trees. The EIR proposed to prevent damage to the trees through a variety of means, such as using less invasive excavation methods, watering trees regularly, and employing a more permeable type of cement. Rather than treating those proposals as mitigation measures, however, the EIR included them in the description of the project, which the court found unlawfully "compress[ed] the analysis of impacts and mitigation measures into a single issue."¹⁸⁴ Instead, an EIR must first assess project impacts before weighing "measures designed to mitigate impacts."¹⁸⁵

The DEIR lists numerous "project design features" (or PDFs) that supposedly mitigate the impacts of the Project.¹⁸⁶ In fact, the DEIR contains over 20 pages of project design features, covering nearly every type of impact and every aspect of the Project.¹⁸⁷ These project design features are problematic for multiple reasons.

As an initial matter, GSFA must comply with *Lotus* and discuss the significance of environmental impacts separately from project design features and/or mitigation measures. An EIR is legally inadequate if it "incorporate[s] the proposed mitigation measures into its description of the project," because doing so obfuscates the impacts of the project.¹⁸⁸

¹⁸¹ CEQA Guidelines, §§ 15121(a), 15126.4.

¹⁸² *Lotus v. Dept. of Transportation* (2014) 223 Cal.App.4th 645, 655–656.

¹⁸³ *Id.* at p. 656.

¹⁸⁴ *Ibid.*

¹⁸⁵ *Id.* at p. 656 fn.8.

¹⁸⁶ DEIR 2-9, 2-15–34.

¹⁸⁷ DEIR 2-15–34 (listing administrative, aesthetic, air quality, archaeological/cultural resources, biological resources, geology/soils, hazards, hydrology/water quality, noise, and recreation PDFs).

¹⁸⁸ *Lotus, supra*, 223 Cal.App.4th at p. 655.

Furthermore, it is unclear why the DEIR separates out the “project design features” from other CEQA mitigation measures. The DEIR “fails to adequately inform the public and decisionmakers about the reasoning underlying the [agency’s] decision to make [the measure] a mere [project design feature] and not a mitigation measure.”¹⁸⁹ GSFA must explain why it has incorporated quasi-mitigation measures as “project design features,” and explain whether or not these measures meet CEQA’s requirements for mitigation. If not, the agency cannot rely on them to reduce the significance of impacts.¹⁹⁰

As explained below in other sections of this comment letter, it appears that there are numerous ways in which the project design features are inadequate under the law as mitigation measures. For example, the project design features:

- Improperly delegate significance determinations to contractors and other personnel in the field
- Improperly defer significance determinations until after approval
- Lack performance standards and mitigation commitments (with language such as “as reasonable or appropriate” and “to the extent feasible”)
- Are impermissibly vague and improperly defer development of specific mitigation until after Project approval

To the extent that GSFA intends to rely on these measures to mitigate the Project’s environmental impacts, it must ensure that the measures meet CEQA’s requirements. As of now, they fall woefully short.

Finally, the measures in the project design features must be made enforceable in the final Project approvals, as the DEIR states will happen. Failure to make mitigation measures enforceable renders them unlawful as a matter of law.¹⁹¹

VI. The Project description fails to provide sufficient detail to enable meaningful environmental analysis and comment

In order to be legally sufficient, an EIR must contain an “accurate, stable and finite project description.”¹⁹² Such a description must cover the *entire* project. The CEQA Guidelines define “project” broadly as “the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.”¹⁹³ There are multiple areas in which the DEIR fails this test.

¹⁸⁹ *NRDC, Inc. v. City of Los Angeles* (2023) 98 Cal.App.5th 1176, 1209.

¹⁹⁰ *Id.* at pp. 1209–1210.

¹⁹¹ *Id.* at pp. 1202, 1212–1213.

¹⁹² *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193 (calling such a description “the *sine qua non* of an informative and legally sufficient EIR”).

¹⁹³ CEQA Guidelines, § 15378(a).

A. The DEIR inappropriately refers to feedstock acquisition as “Sustainable Forest Management Projects”

The DEIR collectively refers to the feedstock acquisition element of the Project—the process of either harvesting trees and other vegetation or collecting harvest or mill residuals as “Sustainable Forest Management Projects.”¹⁹⁴ The DEIR then uses this phrase hundreds of times throughout the document when describing the impacts of the Project.

The DEIR’s use of this term is misleading, as there is nothing about the feedstock acquisition that is either “sustainable” or “forest management.” As explained above, see *supra* section I.B, the feedstock acquisition will either involve individual thinning projects on federal, state, or private lands, or will involve collecting harvest or mill “residuals.” Either way, GSNR will perform the individual projects as one-offs, not as part of an integrated plan for forest management. The phrase “Sustainable Forest Management Projects” implies that GSFA will take an active role in managing these forests over years, and that simply is not the case. No part of the Project proposes that the agency will follow up on lands that have been harvested to ensure that they are “sustainably” managed going forward. GSFA should strike this phrase from throughout the DEIR.

B. The Project description fails to describe and analyze the additional forest thinning that will be induced

An EIR must describe any growth-inducing impacts of the proposed project.¹⁹⁵ Although this part of CEQA usually applies to population growth, it also applies to “economic” and other types of growth.¹⁹⁶ An EIR must “discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.”¹⁹⁷

The DEIR estimates that 85,779 acres of forested land will be treated annually for the GSNR Biomass Only Thinning part of the Project, which is the only part that directly proposes to thin forests.¹⁹⁸ However, the DEIR must evaluate whether the harvest residuals aspect of the Project, or the mere existence of the pellet mills themselves, will indirectly induce further thinning or logging, beyond that 85,779 annual acres. Studies from the Southeastern U.S. have shown dramatic increases in logging in forests in the vicinity of pellet facilities, including at rates that exceed forest growth.¹⁹⁹ Therefore, it is reasonable to conclude that the existing of

¹⁹⁴ DEIR 2-4.

¹⁹⁵ Pub. Resources Code, § 21100(b)(5); CEQA Guidelines, § 15126(d).

¹⁹⁶ CEQA Guidelines, § 15126.2(e).

¹⁹⁷ CEQA Guidelines, § 15126.2(e).

¹⁹⁸ DEIR 2-11.

¹⁹⁹ See, e.g., Christopher Williams, Forest Clearing Rates in the Sourcing Region for Enviva Pellet Mills in Virginia and North Carolina, U.S.A. (Dec. 2021), <https://southernenvironment.sharefile.com/share/view/s322e5dc731984235ab391a16115a7d21>; Southern Environmental Law Center, Satellite images show link between wood pellet demand (footnote continued on next page)

the two new pellet mills will induce further logging. Furthermore, the “harvest residuals” aspect of the Project—which potentially accounts for the majority of feedstock, see *supra* section I.B.2—could well induce further logging by making such logging more economically attractive: Whereas harvest residuals were previously left or burned, the Project now proposes that they be harvested as feedstock for pellets.²⁰⁰

If there is induced demand, how will this demand, over at least 20 years and maybe longer, affect the biological resources in the Project area? The DEIR ignores this issue, which is especially important because California has adopted a “30x30” goal—i.e., a goal of conserving at least 30% of the state’s land and coastal waters by 2030—to protect biodiversity.²⁰¹ By expanding long-term industrial forest management operations across a wide swath of California’s forests, this Project not only poses substantial threats to biodiversity, but also may conflict with California’s 30x30 goal. The DEIR must analyze the effect of these projects, on a cumulative basis, including on California’s 30x30 goal.

C. The DEIR fails to demonstrate that adequate feedstocks will be available, each year for 20 years, within the two working areas, and must account for the additional logging/thinning that is likely to be induced by the Project

The DEIR fails to include a rational, complete, and adequately documented feedstock supply plan. The portion of the plan claiming to scavenge existing harvest residues must, after computing theoretical slash available, discount whatever is already being consumed by the existing biomass industry and discount whatever needs to be left on the forest floor for nutrients. The DEIR must calculate and factor in the wood demand needed to feed the wood-fired dryers, which will substantially add to the Project’s feedstock needs. The DEIR must also acknowledge that the Project in practice is unlikely to use slash/burn pile materials to any appreciable extent because of the higher costs to collect and process these low-quality materials. To fill its demand for feedstocks, the Project is likely to induce additional logging/thinning and the DEIR must account for this.

As an initial matter, the DEIR fails to estimate and report the quantities of feedstocks required from all three sources—harvest residuals, GSNR Biomass Only Thinning Projects, and mill residuals. The DEIR estimates a requirement for 509,740 bdt/yr of feedstock from GSNR Biomass Only Thinning Projects,²⁰² but offers no similar assessment of the demand for feedstock from harvest residuals or mill residuals. The DEIR suggests that mill residuals will make up ~1% of the feedstock.²⁰³ Therefore, assuming that mill residuals make up a negligible

and increased hardwood forest harvesting (March 2022),
<https://www.southernenvironment.org/wp-content/uploads/2022/03/Biomass-White-Page.pdf>.

²⁰⁰ DEIR 2-3.

²⁰¹ Governor’s Exec. Order No. N-82-20 (Oct. 7, 2020); Stats. 2022, ch. 349 (adding Pub. Resources Code, § 71450 et seq.).

²⁰² DEIR 3.7-53

²⁰³ The DEIR states that Harvest Residuals are anticipated to provide approximately 69% of the total feedstock utilized at the Tuolumne facility, and approximately 47% of the (footnote continued on next page)

fraction of feedstock, then the Project will require around 810,000 green tonnes per year of harvest residuals.²⁰⁴

However, the DEIR fails to show that there will be adequate harvest residuals to meet this 810,000 green tonnes per year demand. Over the last two decades California timber harvests statewide have remained relatively stable at 1,500-2,000 million board feet per year. In 2016 about 990 million board feet originated from the Lassen and Tuolumne working areas,^{205,206} equivalent to perhaps 2.7 million bdt.²⁰⁷ Estimates vary for the amount of logging residuals left onsite that would be available for collection, but the amount could be as low as 6% of harvested timber.²⁰⁸ In this case, there would be an annual flow of about 170,000 bdt of new harvest residuals each year to contribute to the Project's feedstock, translating to 340,000 green tonnes at a moisture content of 50% (wet basis). This is considerably less than the 810,000 green tonnes per year that will be required to feed the Project as designed.

total feedstock utilized at the Lassen facility (DEIR 2-7). The DEIR further states that GSNR Biomass Only Thinning Projects are anticipated to provide approximately 30% of the total feedstock utilized at the proposed Tuolumne facility, and approximately 52% of the total feedstock utilized at the proposed Lassen facility (DEIR 2-11). Based on this, Mill Residues would comprise 1% of the total feedstock at each facility.

²⁰⁴ Based on the sum of green feedstock requirements for both plants (1,183,890 Mg/yr at Lassen per DEIR 2-37 and 548,294 Mg/yr at Tuolumne per DEIR 2-43), and subtracting out 924,852 Mg/yr green equivalent GSNR-only thinnings. Green equivalent mass of GSNR-only thinnings was derived from 509,740 bdt/yr (DEIR 3.7-53) assuming moisture content 50% (wet basis) and converting from imperial to metric mass units at the rate of 0.907 Mg/ton. We rounded the result 807,332 Mg/yr to two significant digits (810,000 Mg/yr) for ease of reading. If moisture content of GSNR-only thinnings is lower than 50% (wet basis), then the required mass of harvest residuals feedstock will be even higher. It is important that the DEIR specify and use consistent moisture content values throughout the DEIR, which it does not currently do.

²⁰⁵ Marcille, Kate C. et al., California's Forest Products Industry and Timber Harvest, 2016, General Technical Report, Pacific Northwest Research Station: U.S. Department of Agriculture, Forest Service (2020).

²⁰⁶ The source inventories harvest by county. We equated the Lassen working area to the geographic union of Siskiyou, Modoc, Lassen, Shasta, Plumas, Tehama, and Butte counties; and the Tuolumne working area to the geographic union of Placer, El Dorado, Alpine, Amador, Calaveras, Tuolumne, Stanislaus, Mariposa, Merced, Madero, and Fresno counties.

²⁰⁷ At the rate of 2,750 bdt per million board feet. $1,000,000 * (0.22 \text{ cubic foot per board foot}) * (25 \text{ dry lb per cubic foot}) / (2000 \text{ lb per ton})$. 0.22 cubic foot per board foot is from: Paul Oester and Steve Bowers, Measuring Timber Products Harvested from Your Woodland, Oregon State University Extension Service, June 2003, p.7 (Table 4).

²⁰⁸ Morgan, Todd A. and Timothy P. Spoelma, California Logging Utilization: 2004, 23 Western Journal of Applied Forestry 12 (2008), <https://doi.org/10.1093/wjaf/23.1.12>.

Some harvest residuals need to stay on the ground in the forests to provide nutrients, but the DEIR fails to account for this. A recent review shows that state guidelines tend to converge on leaving roughly 30% of course woody debris in the forest.²⁰⁹

In addition, there are already 23 wood-burning bioenergy plants in California, the majority of which draw from the Project working areas to at least some degree. Wood-to-electricity bioenergy plants have a lower threshold for feedstock quality than pellet plants, so these existing facilities are already drawing heavily on harvest residuals in the Project working areas. A study of California's forestry sector in 2016 states "Measured in cubic feet, the bioenergy sector used about 33 percent of the wood fiber (excluding bark) from California's timber harvest, as well as approximately 33 percent of the bark residuals produced. This includes more than 83 MMCF of timber harvested for bioenergy and approximately 48 MMCF (including bark) from other primary processing facilities."²¹⁰ Such demand suggests the existing bioenergy sector is already capable of consuming the bulk of harvest residuals after accounting for demands for all other forest products.

The DEIR must also calculate and factor in the wood demand needed to feed the wood-fired dryers, which contributes substantially to the overall wood demand from the Project. The wood-fired dryers at the Lassen and Tuolumne plants are 160.6 and 83 MMBtu/hr, respectively. Assuming the chips they burn have typical moisture content for green wood, together the two dryers will consume around 23 tonnes of chips per hour, or around 200,000 tonnes of chips per year. This estimated demand may not reflect actual demand for wood overall, however. According to some sources,²¹¹ it requires burning around half a tonne of green chips to generate sufficient heat to produce one tonne of finished pellets, suggesting that the facilities could burn more than 500,000 tonnes of green chips per year to produce one million tonnes of pellets.

Finally, while the DEIR claims that the Project will make pellets using slash piles,²¹² the DEIR must acknowledge that the Project in practice is unlikely to use slash pile materials

²⁰⁹ Titus, Brian D. et al., Sustainable forest biomass: a review of current residue harvesting guidelines, 11 Energy, Sustainability and Society 10 (2021).

²¹⁰ Marcille, Kate C. et al., California's Forest Products Industry and Timber Harvest, 2016, General Technical Report, Pacific Northwest Research Station: U.S. Department of Agriculture, Forest Service (2020), https://www.solidstandards.eu/images/Training/Summary_reports/module_woodpellets_eng_Final_public.pdf

²¹¹ Jonker J.G. et al., Carbon payback period and carbon offset parity point of wood pellet production in the south-eastern United States, 6 GCB Bioenergy 371 (2014) <https://onlinelibrary.wiley.com/doi/10.1111/gcbb.12056>. See also, Giuntoli, J. e al., Solid and gaseous bioenergy pathways: input values and GHG emissions (2017): Calculated according to methodology set in COM(2016) 767: Version 2, EUR 27215 EN. Joint Research Centre of the European Commission. Retrieved from <https://op.europa.eu/en/publication-detail/-/publication/1893b3a1-3f61-11e7-a08e-01aa75ed71a1/language-en>

²¹² DEIR 2-3, 2-5, 2-5.

to any appreciable extent because of the higher costs to collect and process these low-quality materials. Industrial wood pellets require clean, uncontaminated chips in order to meet international wood pellet standards.²¹³ Utility scale heat and power plants have precise specifications and expectations for their wood pellets (e.g., heat content, moisture, ash and sulfur content). Slash piles typically include large amounts of leaves, pine needles, and small diameter limbs with a high bark-to-wood ratio, and the material can also contain high amounts of soil and grit that quickly degrade pelletizing equipment as well as introduce unacceptable amounts of contaminants into the final product. Thus, using slash piles may be largely uneconomic when taking into account the costs of collection, transportation and additional processing of this low-quality feedstock. As discussed elsewhere, it appears that the DEIR may underestimate haul distances, which would also add to actual costs. A 2011 assessment of bioenergy in California found that biomass hauling costs increased with distance such that projects sourcing fuel from 80–100 miles away would be paying \$40 to \$60 per bone dry ton (costs have significantly increased since 2011).²¹⁴ In sum, regular biomass energy projects can at least burn 100% of the fuel as delivered, whereas the pellet project can only use sufficiently clean material as feedstock for the revenue-generating product (pellets), and thus may receive but be unable to use large amounts of low-quality material if the quantity exceeds demand from the wood-fired dryer used in the pellet manufacturing process.

Because of these realities, the wood pellet industry is mostly focused on sourcing larger diameter materials such as whole tree stems (roundwood) and large tree parts. Based on pellet industry documents and research, almost 90% of wood pellets typically come from the main stems of trees mostly of pulpwood quality, and also from mill residues (sawdust)²¹⁵ that could otherwise be used for wood products.²¹⁶ As a result, slash piles are often left to decay or be burned in sites that pellet facilities are sourcing from. For example, investigative reporting from British Columbia found that a pellet mill which opened in 2018 sources primarily whole logs. Since the mill opened, slash pile burning has not decreased and air quality during slash-burning season has not improved, contrary to the wood pellet company's claims.²¹⁷ In any case, available data indicate that slash pile materials could not constitute a major component of the Project's operations, even if it were to use them. One inventory of existing burn piles in California estimated that the Lassen and Tuolumne working areas together contained

²¹³ https://www.solidstandards.eu/images/Training/Summary_reports/module_woodpellets_eng_Final_public.pdf (see EN 14961-2, ISO 17225-2, EN-Plus)

²¹⁴ Stewart, W. et al., Potential positive and negative environmental impacts of increased woody biomass use for California. Report prepared for California Energy Commission. Public Interest Energy Research (PIER) Program (2011), <https://ucanr.edu/sites/forestry/files/161616.pdf>

²¹⁵ It is important to note that the DEIR indicates that only 1% of feedstock for the Project will come from mill residue sawdust, meaning that roundwood is likely to be the main feedstock for its pellet production.

²¹⁶ Brack, Duncan, Woody Biomass for Power and Heat: Impacts on the Global Climate (February 2017) at 21–23; Ireland, Robert, The Rise of Utility Wood Pellet Energy in the Era of Climate Change, Office of Industries Working Paper ID-088 (2022).

²¹⁷ Parfitt, B., Pellet Plant's Promises of Cleaner Air Go Up in Smoke, The Tyee. April 28, 2023, <https://thetyee.ca/Analysis/2023/04/28/Pellet-Plant-Clean-Air-Fail>.

approximately 670,000 tons of burn piles during the study's survey period 2018-2022.^{218,219} The authors do not specify moisture content but assuming a nominal value of 35% this equates to 500,000 bdt of feedstock, much less than a single year of anticipated demand from the Project.

In sum, given the information provided, it is impossible to determine the actual wood demand from the Project versus the availability of resources. Based on what is provided, it appears that the Project will lack the wood demand it requires. To meet its demand for feedstocks, the Project is likely to induce additional logging/thinning and the DEIR must account for this.

D. The DEIR fails to explain why BECCS is mentioned in Project objectives

As noted in section IV, project objectives under CEQA inform the analysis of feasible alternatives. The statement of project objectives must describe the “underlying purpose of the project.”²²⁰

Listed among GSNR's objectives is to “[s]upport the development of new and emerging technologies that use biomass fuels to address climate change, such as Bioenergy with Carbon Capture and Storage (BECCS).”²²¹ Nothing more is said about the BECCS objective other than a note that GSNR entered into an exploratory and nonbinding memorandum of understanding with Drax US BECCS Development, LLC.²²²

It is an error to propose that BECCS may be part of the Project, but to offer no further details or analysis on this highly impacting activity. Biomass energy production is highly polluting and, as discussed below, can be as climate harming as coal-fired power generation. Carbon capture involves capturing some carbon dioxide (CO₂) produced from combustion, compressing it, and transporting it for use or injection underground. In other words, BECCS is not a de minimis set of activities. The BECCS objective must either be removed, or the DEIR must be revised to account for this wholly separate and significant source of environmental impacts.

Burning wood to generate electricity emits more CO₂ per kilowatt-hour than burning fossil fuels, including coal. The IPCC's default emission factor for burning wood is higher than

²¹⁸ California Law Empowering Renewable Energy Inc., Spatial Informatics Group, and Blue Tree Analytics, California Forest Biomass Pile Data Collection, California Board of Forestry and Fire Protection (December 6, 2023).

²¹⁹ The source inventories burn piles by air district. We equated the Lassen working area to the geographic union of the Siskiyou, Modoc, Lassen, Shasta, Tehama, Butte, and Norther Sierra air districts; and the Tuolumne working area to the geographic union of the Placer, Feather River, El Dorado, Amador, Sacramento, Calaveras, Tuolumne, and Mariposa air districts.

²²⁰ CEQA Guidelines, § 15124(b).

²²¹ DEIR 2-3.

²²² DEIR 3.2-199, fn.34.

that for coal and natural gas,²²³ and accounting for the low efficiency of wood combustion makes the discrepancy greater still. As a result, biomass power plants emit more CO₂ per megawatt-hour than most other electricity sources in California. According to 2018 data pulled from the Air Resources Board, all of California's biomass facilities far exceed the state's Emission Performance Standard (EPS), with greenhouse gas emissions ranging from around 2,500 to over 19,000 lbs CO₂e per MWh, and averaging 3,500 pounds CO₂e per MWh for non-cogeneration facilities.²²⁴

Biomass energy generation in California emits more than 1.5 times the carbon pollution of coal-fired power per unit of electricity—and almost four times the carbon pollution of gas-generated power (see chart below).²²⁵ Other studies have similarly found that biomass energy produces emissions at the smokestack in the range of 3,220 pounds CO₂ per MWh, which significantly exceeds emissions from coal and fossil gas for the same amount of electricity produced.²²⁶ This is because combusting trees is a remarkably inefficient way to generate electricity, resulting in high carbon emissions and high costs of production.²²⁷

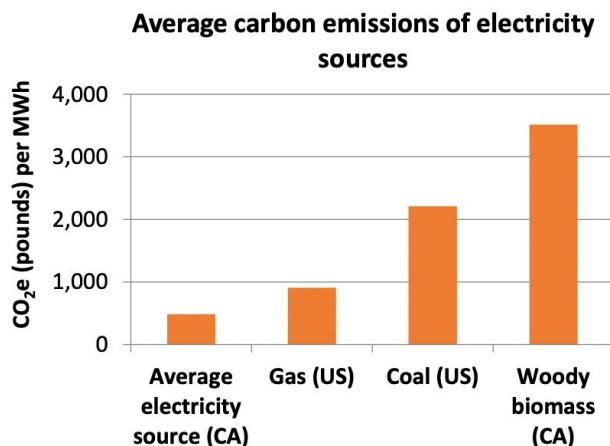
²²³ Table 2.2 of Chapter 2, Stationary Combustion, 2006 IPCC Guidelines for National Greenhouse Gas Inventories. At https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf

²²⁴ Total CO₂e emissions for each facility in 2018 come from California Air Resources Board Mandatory GHG Reporting Emissions data, available at *Mandatory GHG Reporting – Reported Emissions*, Cal. Air Res. Bd., <https://ww2.arb.ca.gov/mrr-data> (last visited Nov. 10, 2022). Data on net MWh produced by each facility in 2018 come from *California Biomass and Waste-To-Energy Statistics and Data*, Cal. Energy Comm'n, https://ww2.energy.ca.gov/almanac/renewables_data/biomass/index_cms.php (last visited Nov. 10, 2022) (select 2018 in the “Go to a Different Year” dropdown menu). Total CO₂e produced by the 9 electricity only, non-cogeneration active woody and agricultural biomass facilities with available data totaled 2,127,693 metric tons, and net MWh in 2018 from these 9 facilities totaled 1,334,346 MWh, for an average of 1.59 metric tons CO₂e per net MWh, equal to 3,515 pounds CO₂e per net MWh. The average of 3,515 pounds CO₂e per MWh includes electricity-only plants; cogeneration plants are excluded because some of their CO₂ emissions are from heat-related fuel consumption. The high CO₂e rate-per-MWh is similar for biomass facilities without cogeneration.

²²⁵ Overall average GHG Intensity of electricity generation in California comes from Cal. Air Res. Bd., 2000- 2018 Emissions Trends Report Data (2020 Edition), https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/2000_2018_ghg_inventory_trends_figures.xlsx; average CO₂ emissions per MWh for gas and coal in the United States in 2019 are from, *FAQS: How much carbon dioxide is produced per kilowatt hour of U.S. electricity generation?*, U.S. Energy Info. Admin., <https://www.eia.gov/tools/faqs/faq.php?id=74&t=11> (last updated Nov. 4, 2021).

²²⁶ Manomet Ctr. for Conservation Scis., *Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources* (2010) at 103, <https://www.mass.gov/doc/manometbiomassreportfullhirezpdf/download>.

²²⁷ John Sterman et al., *Does wood bioenergy help or harm the climate?*, 78 Bulletin of the Atomic Scientists 128 (2022), DOI: 10.1080/00963402.2022.2062933.



Research also shows that using forest “residue” or “waste” to generate biomass energy—referring to biomass that would otherwise be disposed of—leads to a net increase in carbon emissions in the atmosphere for decades.²²⁸ In contrast, solar and wind energy provide virtually carbon-free sources of power. Carbon capture operations can also result in the emission of harmful air pollutants such as fine particulate matter, ammonia, and hazardous volatile organic compounds.²²⁹

The carbon capture side of BECCS is itself a massive industrial activity with potentially significant impacts. Captured CO₂ is compressed and pushed through pipelines under high pressure for injection underground. Analysis from the Institute for Energy Economics and Financial Analysis found that the energy required to capture, transport, and inject carbon underground “materially reduces its net benefit.”²³⁰

Further, CO₂ gas is odorless, colorless, doesn’t burn, is heavier than air, and is an asphyxiant and intoxicant.²³¹ CO₂ leaks (from compression, injection, transport, storage, etc.) therefore pose a potential hazard for people, wildlife, and plants, as “CO₂ is denser than air and can therefore accumulate to potentially dangerous concentrations in low lying areas,” and “any

²²⁸ Mary S. Booth, *Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy*, 13 Env’t Rsch. Letters 035001 (2018), <https://doi.org/10.1088/1748-9326/aaac88>; John Sterman et al., *Does wood bioenergy help or harm the climate?*, 78 Bulletin of the Atomic Scientists 128 (2022), <https://doi.org/10.1080/00963402.2022.2062933>.

²²⁹ Mark Z. Jacobson, *The health and climate impacts of carbon capture and direct air capture*, 12 Energy Env’t. Sci. 3567 (2019), <https://pubs.rsc.org/en/content/articlelanding/2019/ee/c9ee02709b/unauth#!divAbstract>.

²³⁰ Clark Butler, IEEFA, *Carbon Capture and Storage Is About Reputation, Not Economics* at 4 (2020), https://ieefa.org/wp-content/uploads/2020/07/CCS-Is-About-Reputation-Not-Economics_July-2020.pdf.

²³¹ Pipeline Safety Trust and AccuFacts, *CO₂ Pipelines: Dangerous and Under-Regulated* (March 2022), <https://pstrust.org/wp-content/uploads/2022/03/3-23-22-Final-Accufacts-CO2-Pipeline-Report2.pdf> [hereinafter, PST Report].

leak transfers CO₂ to the atmosphere.”²³² CO₂’s lack of odor and invisibility also means that it may not be possible for citizens and first responders to determine if they are in a hazard area before they are harmed.²³³ While the danger zone for people and wildlife from hazardous hydrocarbon liquid and natural gas pipeline releases is generally measured in feet, the danger zone of impact from CO₂ pipelines is measured in *miles*.²³⁴ These risks became reality in February 2020, when a CO₂ pipeline rupture in Mississippi led to the evacuation of hundreds and hospitalization of dozens of residents,²³⁵ with harms including extreme disorientation, unconsciousness, and seizures.²³⁶

Finally, the DEIR’s qualification that the BECCS memorandum of understanding is “nonbinding” and that “the prospect that any particular quantity of wood pellets produced by the project will actually be exported to [a Drax] location remains entirely speculative”²³⁷ is of no moment. Including BECCS among the Project objectives means that the DEIR must account for this purported Project purpose or benefit in its analysis and alternatives. As such, the concerns outlined above—and others—must be considered.

E. The DEIR’s statements about the use of trucks is confusing and inconsistent

The DEIR errs by not including a description of impacts caused by shipping pellets by trucks, if the Project in fact intends to use trucks in that manner. The current Project description states that all pellets will be shipped by rail from Lassen and Tuolumne facilities.²³⁸ But the Port of Stockton facility will include a truck dump.²³⁹ Figure 2-6 (“Process Flow Chart”) includes an “Optional Truck Loadout” at pellet facilities. The Notice of Preparation also stated that pellets would be shipped by truck from Tuolumne. If, in fact, the Project might involve the transport of pellets from the factory to the Port via truck, either in whole or in part, the DEIR must disclose that fact and analyze the impacts.

²³² IPCC, *Chapter 4: Transport of CO₂*, in Special Report on Carbon Dioxide Capture and Storage (2005), at 188 (noting that CCS “will require a large network of pipelines.”).

²³³ PST Report at 8.

²³⁴ *Id.* at 9-10.

²³⁵ *Pipeline Ruptures in Yazoo County, Dozens Rushed to the Hospital*, Miss. Emergency Mgmt. Agency (Feb. 23, 2020), <https://www.msema.org/news/pipe-ruptures-in-yazoo-county-dozens-hospitalized/>.

²³⁶ Sarah Fowler, ‘Foaming at the mouth’: First responders describe scene after pipeline rupture, gas leak, Clarion Ledger, Feb. 27, 2020, <https://www.clarionledger.com/story/news/local/2020/02/27/yazoo-county-pipe-rupture-co-2-gas-leak-first-responders-rescues/4871726002/>; Dan Zegart, *The Gassing of Satartia*, Huffington Post (Aug. 26, 2021), https://www.huffpost.com/entry/gassing-satartia-mississippi-co2-pipeline_n_60ddea9fe4b0ddef8b0ddc8f.

²³⁷ DEIR 3.2-199, fn.34.

²³⁸ DEIR 2-39, 2-45.

²³⁹ DEIR 2-49.

VII. The DEIR fails to adequately analyze and mitigate the environmental impacts of the Project

The EIR must identify and focus on the significant effects of the proposed project.²⁴⁰ The EIR must “be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences.”²⁴¹ “To facilitate CEQA’s informational role, the EIR must contain facts and analysis, not just the agency’s bare conclusions or opinions.”²⁴² A reasoned impacts analysis enables decision makers to effectively consider mitigation measures and alternatives.²⁴³ Absent sufficient exploration of the significant environmental effects of the project, “the lead agency [may] travel the legally impermissible easy road to CEQA compliance.”²⁴⁴

The informational defect produced by a cursory analysis also infects an EIR’s discussion of mitigation measures. Absent an adequate description of impacts, “there is no way to connect the dots between” risks and prevention strategies so that “there must be a disclosure of the ‘analytic route the . . . agency traveled from evidence to action.’”²⁴⁵

Here, the DEIR’s analysis of the Project’s many environmental impacts violates CEQA. The DEIR is missing critical information necessary to analyze, disclose, and mitigate the Project’s significant effects.

A. Air quality

1. Feedstock acquisition and processing

This is a dirty project and the DEIR admits it:

Operation of the project, including feedstock acquisition, wood pellet production, and transport to market, however, would result in exceedances of regional thresholds for emissions of VOCs, NOx, CO, PM10, and PM2.5, even after implementation of mitigation...²⁴⁶

Because activities implemented under the Project would generate levels of criteria air pollutants and precursors that are anticipated to exceed air district thresholds, these emissions could result in, or contribute to, exceedances of the NAAQS and CAAQS for criteria air

²⁴⁰ CEQA Guidelines, § 15126.2(a).

²⁴¹ CEQA Guidelines, § 15151.

²⁴² *Laurel Heights, supra*, 47 Cal.3d at p. 405.

²⁴³ *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 514.

²⁴⁴ *Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.* (2001) 91 Cal.App.4th 1344, 1371.

²⁴⁵ *People ex rel. Bonta, supra*, at p. 1234 (quoting *Laurel Heights, supra*, 47 Cal.3d at p. 404).

²⁴⁶ DEIR 3.2-165.

pollutants (specifically VOC and NOx that contribute to ozone, CO, PM10, and PM2.5) thereby also potentially conflicting with the air quality planning efforts of regional air districts (including but not limited to Lassen County APCD, Tuolumne County APCD, and San Joaquin Valley APCD), including those that comprise the SIP. Implementation of MM-AQ-1 through MM-AQ-10 would reduce impacts; however, the DEIR concedes that the Project's impacts would remain significant and unavoidable.²⁴⁷

Even so, the DEIR seriously underestimates criteria pollutant, hazardous air pollutant and GHG emissions associated with feedstock acquisition and processing at the Lassen and Tuolumne sites, and with product storage at the Port of Stockton. These issues will be discussed below.

Feedstock acquisition. The feedstock acquisition areas for the Project are depicted in DEIR Figures 2-1 (Lassen Facility area) and 2-2 (Tuolumne Facility area). The Lassen Facility feedstock area comprises 26,185 sq miles, and the Tuolumne Facility 16,668 sq miles. The distances from the proposed production sites to the farthest edge of the feedstock area are 120 miles for the Lassen Site and 159 miles for the Tuolumne site.²⁴⁸ The “modified treatable areas” containing the desired tree species within each feedstock area tend to be near the edges of the area, not clustered near the pellet mill sites.²⁴⁹

The most important parameter in emissions modeling for feedstock acquisition for this project is trip distance. Despite this, the DEIR uses a fictitious 50 mile one-way distance to evaluate emissions from the diesel trucks that haul feedstock to the pellet mills.²⁵⁰ There is no basis for this figure in the record. Justifiable distance figures, given the project areas and location of the species of interest, should be at least twice that estimate for the Lassen site and three times the estimate for the Tuolumne site. This is apparent from the mapping in the DEIR described above. The DEIR's failure to use realistic rather than imaginary numbers for truck trip distances leads to emission modeling failures that yield emissions numbers that are one-third to one-half of what they should be, both for criteria pollutants and GHGs.

Accordingly, when evaluation is made whether there are overriding considerations sufficient to justify this highly polluting project, the correct scope of criteria pollutant emissions, and their health effects, must be in the mix – not the imaginary numbers in the DEIR.

Pellet mill operations. Emissions factors for the pellet mill operations depend on estimates that are out of date, based on different species, and not designed for use for pellet mills. This makes a substantial difference because some of the hazardous air pollutant emissions associated with pellet mills, such as acrolein, have serious human health impacts.²⁵¹

²⁴⁷ DEIR 3.2-196.

²⁴⁸ DEIR 3.2-196.

²⁴⁹ DEIR Appen. B8, Figures 1 and 2.

²⁵⁰ DEIR 3.2-53, 3.2-54.

²⁵¹ EPA, *Acrolein*, <https://www.epa.gov/sites/default/files/2016-08/documents/acrolein.pdf>

The DEIR uses emissions factors for the pellet mills based on a 2013 memorandum from an employee of the Georgia Department of Natural Resources based on testing at local sites²⁵² and comparisons with EPA AP-42 stationary source emission standards, although AP 42 does not have an analysis of pellet mill emissions.²⁵³ The Georgia memorandum ends with this warning: “These are GAEPD recommended emission factors. Use of these emission factors does not guarantee compliance with all state and federal regulations.” Similarly, EPA has issued this Enforcement Alert about misuse of AP-42 standards:

This purpose of this Enforcement Alert is to remind permitting agencies, consultants, and regulated entities that improperly using AP-42 emission factors can be costly to their businesses, inefficient, and in some circumstances, can subject regulated entities to enforcement and penalties. The Environmental Protection Agency (EPA) is concerned that some permitting agencies, consultants, and regulated entities may incorrectly be using AP-42 emission factors in place of more representative source-specific emission values for Clean Air Act permitting and compliance demonstration purposes.²⁵⁴

With respect to using AP-42 factors in permitting, EPA also warns:

Emission factors in AP-42 are neither EPA-recommended emission limits (e.g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e.g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is NOT recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the emission factor. As such, a permit limit using an AP-42 emission factor could result in approximately half of the sources being in noncompliance.²⁵⁵

These warnings aptly describe the problem that leads to unreliable emissions estimates for the two pellet mills here.

With respect to the 2013 Georgia memo, the empirical results presented can be assumed to be based on wood from local Georgia forest. Those species, primarily loblolly

²⁵² Georgia Dep’t of Natural Resources, January 29, 2013 Memorandum to Eric Cornwell.

²⁵³ EPA AP 42 is described by EPA as: Compilation of Air Pollutant Emissions Factors from Stationary Sources ... published since 1972 as the primary compilation of EPA’s emissions factor information.”

²⁵⁴ The 2020 EPA Enforcement Alert is included as a reference to this comment letter.

²⁵⁵ See https://www.epa.gov/system/files/documents/2024-01/introduction_2024.pdf.

shortleaf pine,²⁵⁶ are not found in the working areas for the Project. Feedstock for the Project is projected to be California Mixed Conifer, Ponderosa Pine, and White Fir,²⁵⁷ none of which is covered in the Georgia memo. Neither the Georgia memo nor the DEIR present any analysis showing that the combustion and other emissions from the Georgia and Project species are similar.

AP-42, relied on by both the Georgia Memo²⁵⁸ and the DEIR, does not have an entry for or analysis of pellet mill operations. Instead, the DEIR analogizes emissions factors for other wood products without any analysis showing that the analogy is apt relating to wood pellet manufacture and storage, or to species of interest in the Project. (See, e.g. DEIR 3.2-63 [AP-42 Section 13.2.4, Aggregate Handling and Storage Piles]; 3.2-64 [AP-42 Section 10.6.2 Particle Board Manufacturing, Table 10.6.2-3]; 3.2-69 [unspecified emission factors from US EPA AP-42 and GAEPD]; 3.2-78 [AP-42 Section 13.2.4, Aggregate Handling and Storage Piles]; 3.2-79 [AP-42 Section 13.2.4, Aggregate Handling and Storage Piles]; 3.2-83 [unspecified emission factors from US EPA AP-42 and GAEPD]; 3.2-95 [AP-42 Section 13.2.4, Aggregate Handling and Storage Piles]; 3.2-98 [emission factors from the US EPA AP-42 and Port of Stockton 2020 Inventory of Air Emissions (Port of Stockton 2023b)]; 3.2-200, 201 [AP-42 Section 1.6 Wood Residue Combustion In Boilers].

But these references do not support the emissions factors for wood pellet manufacturing that were used in the DEIR. AP-42 Section 13.2.4 is inapplicable on its face because it pertains to “minerals,” which are generally defined as inorganic substances with a fixed crystal lattice – in other words, not wood. And AP-42 Section 10.6.2 deals with “particleboard manufacturing,” with “particleboard” defined as: “a panel product manufactured from lignocellulosic materials, primarily in the form of discrete particles, combined with a synthetic resin or other suitable binder and bonded together under heat and pressure.” Obviously, wood pellets are not “panels.” And particleboard is manufactured “from wood residues that are generated as a coproduct of lumber milling”²⁵⁹ and so the type of lumber being milled is critical to an emissions analysis. Nothing in AP-42 analyzes emissions specifically from the species of interest to the Project. Thus, the DEIR leaves the reader with irrelevant and unsupported information about emissions from the pellet mill operations and the health risks associated with those emissions.

Health Risk Analysis. Pellet mill operations burn wood to fuel some of their operations, producing NOx, GHGs and other chemicals. Further, the handling and storage of wood in and after the pelletization process produces VOCs, many of which are dangerous to humans.

²⁵⁶ U.S. Dept. of Agriculture, *Georgia's Forests* (2013) at p. ix, Declaration https://www.srs.fs.usda.gov/pubs/rb/rb_srs209.pdf

²⁵⁷ DEIR Appen. B8, Table 1.

²⁵⁸ Georgia Dep't of Natural Resources, January 29, 2013 Memorandum to Eric Cornwell.

²⁵⁹ Composite Panel Association, Particleboard Environmental Product Declaration, found at https://www.compositepanel.org/wp-content/uploads/102.1_Composite-Panel-Association_EPD_North-American-Particleboard-1.pdf

According to the Health Risk Analysis in the DEIR, during operation, emissions of toxic air compounds (TACs) were estimated using CalEEMod and a spreadsheet model with emission factors from US EPA AP-42 and GAEPD. (DEIR 3.2-69.) The VOC and TAC emissions were based on the throughput and emission factors from the GAEPD for hammermill at a wood pellet manufacturing facility. However, as noted above, these analytical methods are outdated at best and only remotely applicable to the Project.

In contrast, a recent study found:

Beyond CO₂ and other greenhouse gases (namely, methane (CH₄) and nitrous oxide (N₂O)), biomass burning results in the release of both gaseous pollutants (including secondary aerosol precursors such as sulfur dioxide (SO₂) and ammonia (NH₃), and ozone precursors such as nitrogen oxides (NO_x)), volatile organic compounds (VOCs), and both filterable and condensable particulate matter, primarily smaller than 2.5 µm (PM_{2.5}) (see Table S1; [32,33]). Burning of biomass (both natural and anthropogenic) releases dioxins, furans, and dioxin-like polychlorinated biphenyls, a family of persistent organic pollutants [34,35]. . . . Pretreatment of biomass for energy generation to increase density and homogeneity may also lead to pollutant emissions. Drying, pelletization, and storage of wood for bioenergy applications result in emissions of condensable PM and VOCs classified as hazardous air pollutants (HAPs) by the EPA, such as acrolein.²⁶⁰

Instead of using hypothetical emission factors from other wood industries for health risk purposes, the DEIR should have examined actual emissions from existing pellet mills – as GSNR’s MOU partner DRAX has done in its recent air permit application in the state of Washington for a proposed pellet mill there. For example, after its initial submission to the Washington air regulators was questioned, DRAX provided new data that showed an increase in the potential to emit hazardous air pollutants from 0.53 tons/year to 48.9 tons/year.²⁶¹ This is the type of analysis that the DEIR should have undertaken, but did not. Accordingly, the health risk conclusions are unsupported.

²⁶⁰ Hui Tran, et al, *Emissions of wood pelletization and bioenergy use in the United States* (Renewable Energy, Volume 219 Part 2, December 2023); available at: <https://www.sciencedirect.com/science/article/pii/S0960148123014519#bib40>. Acrolein, sometimes used as a biocide, is toxic to humans following inhalation, oral or dermal exposures. <https://www.epa.gov/sites/default/files/2016-08/documents/acrolein.pdf>

²⁶¹ Trinity Consultants, March 29, 2023, letter to Danny Phillips, Southwest Clean Air Agency.

2. Operations at the Port of Stockton

San Joaquin County is in extreme nonattainment for ozone (the federal 8-hour ozone standard), and non-attainment for PM 2.5.²⁶² At the Port of Stockton, NOx, an ozone precursor, is the air pollutant of greatest concern; levels of PM 2.5 are also significant.²⁶³

The Port emissions inventory shows that emissions from oceangoing vessels are a large contribution to local pollution. The Project will exacerbate this problem. In 2022, there were 106 ship departures, and, according to the DEIR, approximately 29 more cargo ships will be used each year to transport pellets to various overseas markets. This is a 27% increase in shipping over 2022 levels at a time when the County needs to decrease PM and NOx in order to come into compliance with federal clean air standards; those extra trips will also cause additional diesel emissions from cargo handling equipment and from ships running their auxiliary power units while at berth.²⁶⁴ The increased shipping levels, as well as increased pollution from trucks, harbor craft, cargo handling equipment and locomotives will also make it more difficult to comply with the Stockton clean air plan.²⁶⁵ Also, because of the size of the Project – the Project area delineated in the DEIR is 28.4 acres, or over 1 million square feet – the Project may be subject to the San Joaquin Valley Air Quality Management District Indirect Source Rule, Rule 9510.²⁶⁶

The DEIR's emission estimates for pellet storage at the Port are also not supportable because they rely on emission factors from AP-42, which we have shown above are not applicable to storage of wood pellets from California forests. Piles of manufactured wood pellets are known to emit hazardous air pollutants, as noted above and in the Health Risk Assessment of the DEIR. Thus, local communities will be exposed to unquantified and unmitigated emissions of volatile organic compounds, toxic air contaminants and other chemicals from the port pellet storage operations. And the local residents most at risk from port-related emissions live in the disadvantaged communities that are directly adjacent to Rough and Ready Island, where the Project is to be sited.²⁶⁷ This environmental justice insult

²⁶² San Joaquin Valley Attainment Status, <https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/>.

²⁶³ Port of Stockton, Clean Air Plan, <https://www.portofstockton.com/air-quality/>.

²⁶⁴ It is not clear from the modeling in the DEIR whether the ship emissions analysis included emissions when the ships are at the dock. The bulk carrier ("Handymax," see DEIR 3.2-95) vessels involved in the Project are unlikely to be able to use shore power and so will probably run their fossil fuel powered auxiliary power units while in port.

²⁶⁵ The Port of Stockton clean air plan (CAP) focuses on reducing nitrogen oxides, particulate matter, and greenhouse gases. These three pollutants were selected because they are the biggest contributor to air pollution, health risk, and climate change in the region, and the community is particularly concerned about their impacts. CAP at 14. Each of those pollutants will increase in the Port area as a result of the Project, with increased ship calls adding the biggest new pollution burden. CAP at 11.

²⁶⁶ See SJVUAPCD Indirect Source Rule, Rule 9510, <https://ww2.valleyair.org/media/cjlnn0u1/r9510-a.pdf>.

²⁶⁷ See CalEnviroScreen 4.0, <https://oehha.ca.gov/calenviroscreen/maps-data>.

must be given heavy weight when the merits of a statement of overriding considerations is on the table.

B. Biological resources

Protecting biological resources is a fundamental tenet of CEQA. Under Public Resources Code section 21001(c), it is the policy of the state to “[p]revent the elimination of fish or wildlife species due to man’s activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities.” EIRs must provide an in-depth analysis of whether a project will: reduce substantially the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce substantially the number or restrict the range of an endangered, rare, or threatened species.²⁶⁸

In addition to review under CEQA, when a project has the potential to significantly impact a species listed under the federal or California Endangered Species Act, consultation with wildlife agencies and a take permit (if allowed for the species) are required.²⁶⁹

1. Tuolumne wood pellet facility

a. Pre-construction plant surveys (MM-BIO-9) must be revised to reflect known plant populations and expert recommendations

MM-BIO-9 requires a protocol-level rare plant survey at the Tuolumne site prior to construction (estimated at least three years from the date of the last rare plant survey) and avoidance of special-status plant species if and where present in the work area wherever feasible.²⁷⁰ If the survey documents any rare plants, a number of subsequent mitigation measures then apply. There is a major flaw with MM-BIO-9, however, in that it inexplicably excludes the Stanislaus monkeyflower, which was documented at the Tuolumne site, as well as endangered and threatened plants that could occur, as flagged by California Department of Fish and Wildlife (CDFW) in their comment letter.

There is no rational reason for MM-BIO-9 to exclude the Stanislaus monkeyflower from pre-construction surveys. Three populations of Stanislaus monkeyflower were mapped during a field visit.²⁷¹ Though not state- or federally listed, the Stanislaus monkeyflower is a

²⁶⁸ CEQA Guidelines, § 15065(c)(1).

²⁶⁹ Cal. Fish and Game Code, § 2081; Endangered Species Act, § 10.

²⁷⁰ DEIR 3.3-67; *see also* DEIR 3.3-123 (describing MM-BIO-9); *see also* Appen. C5 at 2 (noting that there have been no protocol-level surveys for special status species yet).

²⁷¹ DEIR 3.3-67; *see also* Appen. C5 at 15.

CRPR List 1 species and as such, considered a special-status species.²⁷² Impacts to this species would therefore be a potentially significant impact under CEQA.²⁷³

In addition to revising MM-BIO-9 to include the Stanislaus monkeyflower, the measure should be revised to reflect the recommendation from the Project's biological resources consultant, Dudek, on the timing for pre-construction plant surveys. "Where ground-disturbance will occur within 50 feet of habitat supporting Stanislaus monkeyflower (i.e., riparian woodland, intermittent drainage, and FEW-02 in the northern portion of the project site), focused surveys . . . shall be conducted in the season prior to ground disturbance between March and May when this species would be evident and identifiable."²⁷⁴ MM-BIO-9 only says that a survey will be conducted "prior to . . . ground disturbance."²⁷⁵ Dudek further advised that the Project conduct repeat surveys for special-status plants known to occur in the region, as "there is potential for individuals or populations of some of these species to become established in the project area during future growing seasons."²⁷⁶ MM-BIO-9 does not recommend repeat surveys, as it should.

Another flaw in MM-BIO-9 is that it explicitly targets only six special-status plant species,²⁷⁷ and this list does not include two listed plants CDFW identified in its comment letter as within range of the Project. According to CDFW's comment, the Tuolumne facility is located within the ranges of the state endangered and federal threatened Chinese Camp brodiaea (*Brodiaea pallida*) and the state and federal threatened Red Hills vervain (*Verbena californica*).²⁷⁸ These protected plants should therefore be included in MM-BIO-9. Further, CDFW recommended "consulting with the USFWS on potential impacts to federal listed species including, but not limited to Chinese Camp brodiaea and Red Hills vervain."²⁷⁹ There is no indication in the DEIR materials that consultation has, or will, occur. This must also be corrected or otherwise explained.

²⁷² DEIR Appen. C5 at 16. The species is categorized with a California Rare Plant Rank of 1B.1. *Id.* Plants with a 1B rank are rare throughout their range. California Native Plant Society, "California Rare Plant Ranks," <https://www.cnps.org/rare-plants/california-rare-plant-ranks>. A subrank of 0.1 means the plant is seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat). *Id.*

²⁷³ DEIR Appen. C5 at 16.

²⁷⁴ DEIR Appen. at 15-16.

²⁷⁵ DEIR 3.3-123.

²⁷⁶ DEIR Appen. C5 at 16.

²⁷⁷ DEIR 3.3-123 ("Six non-listed special-status plant species will be targeted during the survey: Beaked clarkia (*Clarkia rostrate*), Tuolumne button-celery (*Eryngium pinnatisectum*), spiny-sepaled button-celery (*Eryngium spinosepalum*), forked hare-leaf (*Lagophylla dichotoma*), veiny monardella (*Monardella venosa*), and Patterson's navarretia (*Navarretia paradoxicala*).").

²⁷⁸ CDFW22 at 5 (Appen. A at 92). CDFW also recommended consulting with the USFWS on potential impacts to federal listed species including, but not limited to Chinese Camp brodiaea and Red Hills vervain. *Id.* at 8 (Appen. A at 95).

²⁷⁹ CDFW22 at 8 (noting further that "Consultation with the USFWS, to comply with FESA, is advised and may need to occur well in advance of any ground-disturbing activities.").

b. Mitigation for the Stanislaus monkeyflower (MM-BIO-1) fails to align with expert recommendations

As noted above, the Stanislaus monkeyflower is found on the Tuolumne property and impacts to the species would be a potentially significant impact under CEQA.²⁸⁰ The DEIR is not clear how many individual Stanislaus monkeyflower plants will be directly harmed or removed by the Project. Further, there is no specific mitigation for the Stanislaus monkeyflower, but instead MM-BIO-1 applies under its provisions for “Non-Listed Rare Species.”²⁸¹ Yet while experts recommended measures such as avoidance of rare plants, MM-BIO-1 does not prescribe avoidance—instead, it goes straight to compensatory mitigation.²⁸² This is an error.

In its biological assessment for the Tuolumne site, Dudek stated: “Should rare plants be documented within 50 feet of the construction footprint, avoidance measures shall be implemented to minimize indirect impacts to individual plants wherever feasible.”²⁸³ Dudek also recommended prior to construction that a qualified botanist “flag or fence the location of special-status plant populations and the corresponding avoidance setback.”²⁸⁴ Similarly, CDFW’s comment advises that special-status species be “avoided whenever possible by delineation and observing a no-disturbance buffer of at least 50 feet from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species.”²⁸⁵ If buffers cannot be maintained, CDFW noted that consultation “is warranted . . . to determine appropriate minimization and mitigation measures for impacts to special-status plant species.”²⁸⁶

Based on this expert input, the DEIR must revise MM-BIO-1 to first avoid and buffer rare plants within the Project’s footprint. If avoidance and buffers are not feasible, the Project should consult with CDFW on possible mitigations, and then pending the result of that consultation, revise MM-BIO-1’s compensatory mitigation strategy.

c. More information about the Project’s impacts to the listed California red-legged frog and California tiger salamander is needed

The Tuolumne site is located within the known geographic range of California red-legged frog (CRLF) (federal threatened) and California tiger salamander (CTS) (federal and state threatened).²⁸⁷ The DEIR fails to properly assess and disclose potential impacts to these

²⁸⁰ DEIR Appen. C5 at 16.

²⁸¹ DEIR 3.3-117.

²⁸² DEIR 3.3-117-18.

²⁸³ DEIR Appen. C5 at 16.

²⁸⁴ DEIR Appen. C5 at 16.

²⁸⁵ CDFW22 at 5; *see also id.* at 7 (“CDFW recommends that mitigation measures first emphasize avoidance and reduction of Project impacts.”).

²⁸⁶ *Id.*

²⁸⁷ DEIR 3.3-126; DEIR Appen. C5 at 12, 13.

species, and there is no indication whether the Project complied with USFWS requests for additional information on potential impacts.

For the CRLF, Dudek reports that its biologist “submitted the CRLF Site Assessment report to the USFWS via email on January 31, 2024. Upon review of the report and proposed project layout (dated 12/11/23), the **USFWS requested field data** from at least one protocol day and night survey for CRLF at the project site (pers comm Rick Kuyper 2024).”²⁸⁸ The DEIR and its appendices are missing the CRLF site assessment, the USFWS request for data, and any follow-up steps associated with this request. The Project’s CEQA documentation must fill in these information gaps and include any follow-ups from the USFWS.

Similarly, for the CTS, Dudek reports that the USFWS “**requested that a habitat assessment** for California tiger salamander be completed at the project site. Recent species records from Mariposa County and other neighboring counties indicate that the project site is located within the species’ known elevation range (pers comm Rick Kuyper 2024).”²⁸⁹ Like the CRLF, the CEQA documentation must fill in these information gaps and include the status of the requested habitat assessment and any follow-ups from the USFWS.

Given this gap in information about the presence of these listed species and their habitats at the Tuolumne site, it is also unclear where the Project is in the process outlined in MM-BIO-13 (Habitat Assessment, Focused Surveys, and Avoidance of California Red-legged Frog and California Tiger Salamander at the Tuolumne Facility Site). The EIR should make this clarification. The Project should also clarify if ESA consultation is required because Project activities at the Tuolumne site “may affect” these federally-listed species.²⁹⁰

Finally, MM-BIO-13 provides that compensatory mitigation for impacts to CRLF and CTS habitat “will be provided at a minimum 2:1 ratio.”²⁹¹ The DEIR does not say where this compensatory mitigation ratio came from, or even cite to any authority that this mitigation is acceptable per the USFWS or CDFW.²⁹² More specifically, mitigation measures may be evaluated and described under an Incidental Take Permit (ITP) under California law or a federal ESA take permit.²⁹³

²⁸⁸ DEIR Appen. C5 at 13 (emphasis added).

²⁸⁹ DEIR Appen. C5 at 13 (emphasis added).

²⁹⁰ See, e.g., DEIR 3.3-118.

²⁹¹ DEIR 3.3-126.

²⁹² See, e.g., CDFW22 at 7 (“CDFW recommends that mitigation measures first emphasize avoidance and reduction of Project impacts. For unavoidable impacts, the feasibility of on-site habitat restoration or enhancement should be discussed. If on-site mitigation is not feasible, off-site mitigation through habitat creation, enhancement, acquisition and preservation in perpetuity, or a combination thereof, is advised.”).

²⁹³ CDFW22 at 8.

2. Lassen wood pellet production facility

a. The biological resource survey for plants at the Lassen site fails on several levels

To understand the baseline environmental conditions and to accurately analyze and mitigate impacts of a project to biological resources, it is important that surveys are conducted at appropriate times of year for the biological resource under consideration. For example, a survey for blooming plants would be inappropriate outside the plant's blooming season.²⁹⁴ In addition, when evaluating whether a project will affect endangered, rare, or threatened species, lead agencies can use reconnaissance-level surveys rather than protocol-level surveys or other methods, only where the choice of methodology is supported by substantial evidence. California agency databases show 17 special-status plant species that are known to occur in the Lassen project site area.²⁹⁵ Of these 17, Dudek asserts that all "have a low potential to occur or are not expected to occur . . . due to the lack of suitable habitat" or other reasons like the "lack of documented occurrences."²⁹⁶

But Dudek lacks a rational basis for its conclusions. They conducted just one plant survey in September 2021, which is outside of the appropriate time to survey for flowering plants.²⁹⁷ Neither Dudek nor the DEIR justify why a single survey outside the flowering season would be sufficient or reasonable, particularly given the high number of special-status plants that could occur.

A plant that the survey may have missed is slender Orcutt grass, listed as federally threatened and state-level endangered.²⁹⁸ While Dudek found no "documented occurrences" within 10 miles of the review area, and they did not find the grass during their September survey,²⁹⁹ evidence supports conducting a survey for this plant at a different time of year than Dudek chose. According to the U.S. Fish and Wildlife Service (USFWS), slender Orcutt grass "blooms in the terrestrial life stage in May in the Sacramento Valley and June to July in the Modoc Plateau."³⁰⁰ Further, the species is "less likely to germinate in years of below-normal

²⁹⁴ California Department of Fish and Wildlife (CDFW), *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018) at 6, https://www.cnps.org/wp-content/uploads/2019/10/Bot-Cert_2018-CDFW-Plant-and-Vegetation-Survey-Protocols-LR.pdf ("Conduct botanical field surveys in the field at the times of year when plants will be both evident and identifiable. Usually this is during flowering or fruiting. . . . This usually involves multiple visits to the project area (e.g. in early, mid, and late-season) to capture the floristic diversity at a level necessary to determine if special status plants are present.").

²⁹⁵ DEIR Appen. C2 at 7.

²⁹⁶ DEIR Appen. at 7.

²⁹⁷ DEIR Appen. at 2.

²⁹⁸ DEIR Appen. At Attachment C-2.

²⁹⁹ DEIR Appen. at Attachment C-2.

³⁰⁰ U.S. Fish and Wildlife Service, "Slender Orcutt Grass: Overview," <https://www.fws.gov/species/slender-orcutt-grass-orcuttia-tenuis>.

precipitation.”³⁰¹ The year Dudek conducted its survey, 2021, ranked as California’s “fourth driest water year on record.”³⁰² And because slender Orcutt grass “populations can vary greatly in size from year to year,” up to “four orders of magnitude,”³⁰³ one survey is unlikely to be sufficient. The Project should therefore conduct surveys for this (and others) species during the appropriate flowering time and before any construction, now that California’s drought conditions have lessened.³⁰⁴

3. Port of Stockton wood pellet transport site

a. The Stockton biological resources assessment is inexplicably not included with the appendices and its execution was poorly done

The DEIR explains that “[t]o better understand the biological resources associated with” the Port of Stockton site, Dudek “conducted a biological resources assessment of the area.”³⁰⁵ Apparently this assessment involved an online literature review and field survey.³⁰⁶ There are several problems with the Stockton biological resources assessment. First, unlike the Tuolumne and Lassen sites, the Stockton assessment is only broadly mentioned in the DEIR, but the assessment itself is not included in the appendix. Both the Tuolumne (Appendix C5) and Lassen (Appendix C2) biological assessments are included in the DEIR materials and provide important information for the public and expert agencies to review and consider.³⁰⁷ There is no reason to exclude the Stockton assessment.

³⁰¹ U.S. Fish and Wildlife Service, Vernal Pool Recovery Plan (2005) at II-90.

³⁰² NOAA, Annual 2021 Drought Report (issued Jan. 2022), <https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202113#:~:text=Collectively%2C%20the%20California%2DNevada%20West,the%20second%20warmest%20in%202020> (noting that if monsoon rains are excluded the West had the driest 12-month period on record in 2021); see also Cal. Dep’t of Water Res. (Sept. 2021) at 5 https://water.ca.gov/-/media/DWR-Website/Web-Pages/Water-Basics/Drought/Files/Publications-And-Reports/091521-Water-Year-2021-broch_v2.pdf (“Water Year 2021 was dry statewide. It was a second dry year for Northern California and a second dry year in terms of statewide total precipitation.”).

³⁰³ U.S. Fish and Wildlife Service, Vernal Pool Recovery Plan (2005) at II-82.

³⁰⁴ NOAA, Drought Status Update for California-Nevada (Oct. 2024), <https://www.drought.gov/drought-status-updates/drought-status-update-california-nevada-2024-10-17> (“Much of California and Nevada received near-normal precipitation throughout the 2024 Water Year.”).

³⁰⁵ DEIR 3.3-25.

³⁰⁶ DEIR 3.3-25.

³⁰⁷ For example, the Tuolumne assessment was created and included “to identify and characterize existing onsite biological resources, with particular focus on the potential of the project site to support special-status plant and wildlife species and other sensitive resources” and to describe “potential constraints to project implementation posed by the presence or potential presence of sensitive resources, as well as recommendations to minimize and/or avoid impacts to these resources.” DEIR Appen. C5 at 3.

While not authoritative, we have included an example of another EIR’s biological report for reference and possible use by this Project. This other EIR was created for a project, Marathon’s Martinez Renewable Fuels Project, also impacting the San Joaquin River system.³⁰⁸ The Marathon report presents information species also potentially impacted by the Stockton project activities, such as the green sturgeon, Delta smelt, steelhead, and Chinook salmon.³⁰⁹ Having information such as what is included in the Marathon report (e.g., the behavior and biology of likely species to occur), along with the DEIR, is important and useful.

Second, according to the DEIR, the Stockton assessment occurred on August 31, 2023.³¹⁰ The timing of this survey is irrational and runs counter to reasonable recommendations for biological surveys. For example, CDFW recommended that a nesting survey for Swainson’s hawk (a species with likelihood to occur at the Stockton site) be conducted in March or April,³¹¹ i.e., months earlier than the Stockton assessment occurred. Similarly, the end of summer is not ideal for locating flowering plants, whose blooming season is most likely to occur in the early spring.³¹² Accordingly, new biological surveys are needed for the Stockton site.

Third, the Stockton assessment involved only a “general habitat assessment for giant garter snake” but no “focused or protocol-level surveys for [other] special-status plants or wildlife species.”³¹³ To ignore other special-status plants and wildlife species in protocol-level surveys runs counter to the information provided elsewhere in the DEIR noting that “22 special-status plant species are known to occur in the region of the Port site.”³¹⁴ While MMs BIO-18 through BIO-21 require focused/protocol surveys for certain special-status species prior to construction, this is not the same as having properly timed and thorough surveys inform the DEIR and related mitigation measures. The Project should correct this information gap to better align with efforts made at the Tuolumne and Lassen sites.

³⁰⁸ Biological Technical Report: Martinez Renewable Fuels Project (April 2021) [hereinafter, “Marathon Biological Report”].

³⁰⁹ Marathon Biological Report at 26-30.

³¹⁰ DEIR 3.3-25.

³¹¹ CDFW23 at 3 (noting also that “Raptor nests may be very difficult to locate during egg-laying, incubation, or chick brooding periods (late April to early June) if earlier surveys have not been conducted.”).

³¹² California Department of Fish and Wildlife (CDFW), Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018) at 6, https://www.cnps.org/wp-content/uploads/2019/10/Bot-Cert_2018-CDFW-Plant-and-Vegetation-Survey-Protocols-LR.pdf; see also California Native Plant Society (CNPS), “California Wildflowers” (2020), <https://www.cnps.org/wp-content/uploads/2020/04/wildflowers-peak-season-guide.pdf> (showing the peak wildflower season for the Stockton area as March through May).

³¹³ DEIR 3.3-25.

³¹⁴ DEIR 3.3-27; see also *id.* (“35 special-status wildlife species are known to occur in the region of the Port site” and “[t]here is potential habitat [at the Project site] for . . . 8 special-status wildlife species.”).

b. The DEIR must analyze and mitigate the impacts of possible pellet spills and cargo ships

The DEIR contains significant omissions by failing to analyze and mitigate the reasonably foreseeable event of wood pellet spills into the San Joaquin River and the forecasted use of 29 cargo ships per year for product loading and shipping.³¹⁵ Instead, the DEIR entirely dismisses the potential for wood pellet spills and hardly mentions details about the cargo ships and resulting impacts. This is insufficient.

Addressing wood pellet spills and cargo ships is important given the San Joaquin River is rich in biological resources. The DEIR acknowledges there are four special-status aquatic species that live in the waters adjacent to the Stockton site: the green sturgeon (federally threatened), Delta smelt (federally threatened, state endangered), steelhead (federally endangered), and chinook salmon (California species of special concern).³¹⁶ The “Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site is also mapped as designated critical habitat for steelhead (Central Valley DPS), Delta smelt, and green sturgeon (southern DPS).”³¹⁷ Further, the waters provide “a migratory corridor for native fish and wildlife, such as salmonids and harbor seals.”³¹⁸

i. Wood pellet spill

The DEIR states that there will be “[n]o potential for pellets to enter nearby waterbodies.”³¹⁹ The DEIR provides no evidence for this broad assumption. At most, the DEIR offers that “pellet transport to cargo ships would take place in a sealed/contained system.”³²⁰ But like any situation involving the movement and transport of a substance, spills, leaks, and accidents are a possibility. It is irresponsible and irrational under CEQA for the Project to pretend otherwise.

Other projects undergoing CEQA review have anticipated and mitigated spills into the San Joaquin River. For example, the Marathon Martinez biofuel project’s DEIR stated, “[p]otentially significant hazardous materials and water quality impacts are also anticipated as a result of spills of feedstocks or refined products.”³²¹ The DEIR concluded that spills could occur, “*even with* specific procedures to protect sensitive biological resources in the Project vicinity.”³²² It is reasonable to analyze and prepare for a possible spill even with the right

³¹⁵ DEIR 3.3-108.

³¹⁶ DEIR 3.3-96; see also *id.* 3.3-27.

³¹⁷ DEIR 3.3-29.

³¹⁸ DEIR 3.3-108.

³¹⁹ DEIR 3.3-92.

³²⁰ DEIR 3.3-102 (providing further, “There would be no direct or indirect impacts to the San Joaquin River resulting from pellet storage, transport, and export.”); see also *id.* 3.3-96 (“no impacts to the four aquatic species are anticipated.”).

³²¹ Contra Costa County, Marathon Martinez Renewable Fuels Project DEIR (Oct. 2021) at ES-24 (hereinafter, “Marathon DEIR”).

³²² Marathon DEIR 3.4-41 (emphasis added).

equipment and procedures in place rather than pretending, as the GSNR DEIR does, that a spill is simply impossible. The Marathon project then sought to mitigate these impacts through three measures: General Work Site Best Management Practices, Spill and Accidental Prevention, and an Emergency Spill and Containment Plan.³²³ Requirements within these measures included that all employees handling materials that could spill be properly trained, all equipment be kept in good operating order and inspected regularly, prohibiting the storage of materials that could spill within 200 feet of a wetland or water body, ensuring that each crew have sufficient supplies to allow rapid containment and recovery of spilled materials, and the establishment and sharing of clear steps of who to contact and what to do in the event of a spill.³²⁴

The DEIR here should examine and recommend similar steps to prevent and mitigate wood pellet spills, rather than just stand on hope that an accident or spill doesn't ever happen and then be left totally unprepared if it does. Specific to biological resources, the DEIR must analyze and mitigate specific harms wood pellets could cause to the aquatic and nearshore environment. Potential impacts could include water sedimentation and oxygen displacement.³²⁵

ii. Cargo ships

The DEIR makes bare mention of the “estimated 29 cargo ships” that will use the Port site for wood pellet loading and transport each year.”³²⁶ After this brief mention, and without any evidence, the DEIR summarily concludes: “There would be no direct or indirect impacts to the San Joaquin River resulting from pellet storage, transport, and export. As such, project construction and operations at the Port site would not interfere substantially with the movement of native fish or wildlife, or with established wildlife corridors, and there would be no impact.”³²⁷ Like the wood pellet spills, the DEIR cannot substitute wishful thinking and conclusory statements for disclosure, analysis, and mitigation.

As an initial matter, the DEIR must disclose details about the cargo ships that will visit the Port of Stockton site each year, such as their size. Merely mentioning the number of ships

³²³ Marathon DEIR 3.5-26.

³²⁴ Marathon DEIR 3.4-30.

³²⁵ See, e.g., Lydia Soto-Garcia et al., Exposure to Carbon Monoxide from Off-Gassing of Bulk Stored Wood Pellets, *Energy & Fuels* Vol. 29, Issue 1 (Dec. 16, 2014); see also Cargo Handbook, Wood Pellets, https://www.cargohandbook.com/Wood_pellets (explaining that “wood pellets in bulk rapidly generate large amounts of highly toxic carbon monoxide,” which then “displace oxygen”).

³²⁶ DEIR 3.3-108.

³²⁷ *Id.* The DEIR also cites the lack of no new construction “within or over the San Joaquin River” as a basis for concluding that there would be no impacts on aquatic species. *Id.* 3.3-109. This focus only on the lack of construction without mentioning the 29 annual cargo ships ignores a key set of activities that could foreseeably impact biological resources. See also DEIR 3.3-113 (stating in the context of cumulative impacts that “because no new facilities would be constructed in or over the San Joaquin River, and pellet transport to cargo ships would occur in a sealed and contained system that would prevent pellets from dropping into the river” special-status aquatic species “would not be affected.”).

absent of all other details—even best estimates—falls short of CEQA’s information disclosure requirements.

The DEIR must also acknowledge and analyze the myriad of impacts cargo ships have on biological resources.³²⁸ Cargo ships are massively polluting and disruptive to aquatic environments. For example, the DEIR must take into consideration water discharges (including the introduction of non-indigenous species), physical impacts (such as noise, wakes, and animal-ship collisions, or ship strikes), and air emissions (discussed in greater detail in the air pollution section of this comment.)

Ballast water, used to stabilize vessels at sea, may contain everything from microscopic cysts and eggs to fish 30 cm or longer³²⁹ and is widely recognized as a major vector for aquatic species invasions.³³⁰ The introduction of non-indigenous species (NIS) “is viewed, by scientists and managers alike, as a global threat to the functioning and structure of aquatic ecosystems.”³³¹ NIS may compete with or predate on local species and cause large consequences for the receiving community structure.³³² The International Maritime Organization recognizes:

Ballast water may be taken onboard by ships for stability and can contain thousands of aquatic or marine microbes, plants and animals, which are then carried across the globe. Untreated ballast water released at the ship’s destination could potentially introduce a new invasive marine species. Hundreds of such invasions have already taken place, sometimes with devastating consequences for the local ecosystem.³³³

In the Sacramento-San Joaquin Delta, NIS are a major concern. NIS plants alter water flows, water temperature, and the amount of oxygen and nutrients in the water.³³⁴ NIS can also lead to sediment transport and turbidity, which in turn affects the quality of habitat for fish, such the Delta smelt.³³⁵

³²⁸ The DEIR must then mitigate these impacts, with possible mitigations including vessel frequency and speed reductions, acoustic safeguards, and ballast water discharge restrictions and onboard treatment.

³²⁹ A.K. Jagerbrand et al., A review on the environmental impacts of shipping on aquatic and nearshore ecosystems, 695 Sci. of the Total Env’t at 6 (2019).

³³⁰ UC Davis, “Organisms Found in Ballast Water,” https://ballast-outreach-ucsgep.ucdavis.edu/AIS_Info_and_Research/Organisms_Found_in_Ballast_Water/.

³³¹ Jagerbrand et al. (2019) at 6.

³³² Jagerbrand et al. (2019) at 6.

³³³ Int’l Maritime Organization, “Ballast water management - the control of harmful invasive species,” <https://www.imo.org/en/MediaCentre/HotTopics/Pages/BWM-default.aspx>.

³³⁴ Water Education Foundation, “Invasive Species,” <https://www.watereducation.org/aquapedia/invasive-species>.

³³⁵ *Id.* (noting “Decreasing turbidity makes young smelt more vulnerable to predators.”).

The DEIR notes requirements around ballast water, including for the Port of Stockton, but fails to acknowledge ballast water as a potential impact of the Project.³³⁶ Simply because certain safeguards are in place does not mean the DEIR can entirely ignore an area of impact. The Marathon biofuel refinery DEIR, for example, noted that project's marine vessel traffic "could cause potentially significant temporary impacts to special-status species . . . as a result of the introduction of invasive nonindigenous aquatic species attached to marine vessels."³³⁷

Noise is increasingly recognized as a harmful impact of shipping on marine ecosystems.³³⁸ Noise from shipping comes from vibrations, machinery, wave, sonar, and rudder, and propeller cavitation and occurs primarily within a range of frequencies that coincide with those used by a whole variety of aquatic organisms.³³⁹ This noise may interfere with navigation, communication, mating, habitat selection, predator avoidance, and the detection of prey items among marine mammals and fish.³⁴⁰

The wakes caused by cargo ships can lead to physical impacts to shorelines, inland waterways, and watercourses.³⁴¹ Wave energy can also physically disturb oyster reefs, benthic invertebrates, fish, and birds nesting in the shoreline area.³⁴² As a consequence of erosion, shoreline vegetation is continuously forced further from the waterline, and the roots of trees and bushes are exposed, which make them susceptible to falling.³⁴³ Ship waves also induce vertical mixing and nutrient transport, which may increase eutrophication.³⁴⁴ The resuspension and transport of sediments caused by wake action can destroy habitats and cause turbidity, with impacts on, for example, aquatic vegetation and spawning fish.³⁴⁵

Ship strikes may injure or kill aquatic wildlife.³⁴⁶ The speed of the vessel seems to be related to the probability of a collision taking place but also to the severity of impact.³⁴⁷ As noted earlier, the Stockton site is home to up to four protected fish species, as well as harbor seals.³⁴⁸ Harbor seals congregate at haul-out sites, with some of these sites used year-round, and others seasonally for pupping, molting, or because of seasonally available prey resources.³⁴⁹ Other DEIRs have analyzed the relationship between haul-out sites and project

³³⁶ DEIR 3.3-58 (describing the Port of Stockton's ballast water management program).

³³⁷ Marathon DEIR ES-24.

³³⁸ Jagerbrand et al. (2019) at 7.

³³⁹ *Id.* at 7.

³⁴⁰ *Id.*

³⁴¹ *Id.* at 8.

³⁴² *Id.*

³⁴³ *Id.*

³⁴⁴ *Id.*

³⁴⁵ *Id.*

³⁴⁶ *Id.* at 7.

³⁴⁷ *Id.*

³⁴⁸ Harbor seals, protected by the Marine Mammal Protection Act, "are known to occur in the Stockton Deepwater Channel" adjacent to the Port site. DEIR 3.3-29.

³⁴⁹ Coastal Conservancy, SF Bay Area Water Trail Plan, Draft EIR (June 2008) at 3.4-24.

impacts,³⁵⁰ and this DEIR should do the same. Ship strikes have also been known to injure and kill fish such as sturgeon.³⁵¹ One study described a tanker ship departing the Port of Benecia that decapitated a sturgeon of breeding age.³⁵² As the study noted, the impact of vessel strikes on sturgeon combined with other stressors could be cumulatively significant.³⁵³

Besides direct collisions, vessels may also interfere with marine wildlife indirectly by changing their behavior (avoidance) or habitat (fragmentation).³⁵⁴ For example, the DEIR acknowledges that green sturgeon, steelhead, chinook, and Delta smelt all “migrate through the region.”³⁵⁵ Even if these species “would not be expected to remain for prolonged periods” near the Port site,³⁵⁶ the DEIR should consider and mitigate for impacts of ships moving in and out of the channel on their movement and migration.

Finally, consultation with the National Marine Fisheries Service and CDFW may be required because of the potential impacts listed aquatic species their designated critical habitat adjacent to the Port site.

c. Mitigations for Swainson’s hawk do not align with CDFW recommendations

Swainson’s hawk, a California special-status species, are known to occur or have potential to occur at the Stockton site.³⁵⁷ The DEIR’s mitigations for this species do not align with CDFW’s recommendations, and the DEIR does not explain why it ignored expert agency input on this issue.

First, MM-BIO-19 says that Swainson’s hawk surveys will be conducted anytime between March 1-August 31. In its comment on the Project, however, CDFW “strongly” recommended that surveys occur in late March to early April (regardless of when construction begins) because otherwise, “nests may be very difficult to locate . . . if earlier surveys have not been conducted.”³⁵⁸ In other words, conducting surveys in May-August could lead to false results. The Project should therefore revise MM-BIO-19 to align with CDFW’s recommendation.

³⁵⁰ *Id.*

³⁵¹ Nicholas J. Demetras et al., Reported vessel strike as a source of mortality of White Sturgeon in San Francisco Bay, Cal. Fish & Wildlife Vol. 106, No. 1 (2019).

³⁵² *Id.* at page 62.

³⁵³ *Id.* at 62.

³⁵⁴ Jagerbrand et al. (2019) at 8.

³⁵⁵ DEIR 3.3-28.

³⁵⁶ DEIR 3.3-28.

³⁵⁷ DEIR 3.3-27.

³⁵⁸ CDFW23 at 3, citing the Swainson’s Hawk Technical Advisory Committee’s Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley (2000) (noting, “Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson’s hawks, as well as the nest/chicks second.”).

Second, MM-BIO-19 limits the Swainson's hawk survey distance to "within 500 feet, to the extent feasible," of the Project construction. In contrast, CDFW recommended a minimum a survey radius of one mile, or 5,280 feet.³⁵⁹ MM-BIO-19 should reflect CDFW's protocol, and be revised to remove the "where feasible" language, which could result in a survey distance that is even less than 500 feet.

Third, CDFW recommended avoiding all Project disturbance between 0.25-0.5 miles (or 1,320-2,640 feet) of a nesting Swainson's hawk.³⁶⁰ MM-BIO-19 requires only a fraction of this with a 500-foot buffer, and even that can be reduced based on the construction activity "and other factors." The DEIR presents no evidence that such a small nesting buffer will be sufficient, nor does it explain why it ignored CDFW in this instance.

d. The DEIR's assumptions about bats are not substantiated, and the mitigations are insufficient

The Stockton site provides potential roosting habitat for protected native bats.³⁶¹ "Bats could potentially roost in riparian trees or buildings in the vicinity of the Port site and forage along the Stockton Deepwater Channel (San Joaquin River) adjacent to the site."³⁶² Yet while DEIR provides that no "roosting features with bat sign . . . were identified during the field survey," it explains that "a focused survey for bats was not conducted."³⁶³ The DEIR then states (based only on broad assumptions and conclusory statements) that the Stockton Project activities are "not expected to result in adverse impacts" to bat species.³⁶⁴ This is simply not sufficient.

The Project should first conduct a focused survey for bats, something it admits it did not do. Second, the DEIR must provide evidence for its conclusory statements that bats will not be impacted because. At present, statements such as "it is assumed that any other bats roosting or otherwise utilizing the area are fairly adapted to [human foot traffic, noise, and lighting] and any additional human activity resulting from the proposed development is not expected to result in adverse impacts"³⁶⁵ do not count as evidence upon which the DEIR can base its conclusions.

Following its broad assumption of "adapted" bats, the DEIR admits that "because construction . . . would occur near potential roosting habitat for bats, construction-related noise could result in the disturbance of bat roosts if occupied during construction. This could be a potentially significant impact."³⁶⁶ The DEIR then relies on MM-BIO-17 (Worker

³⁵⁹ CDFW23 at 3.

³⁶⁰ CDFW23 at 4.

³⁶¹ DEIR 3.3-108. All native bats in California are protected. Cal. Fish & Game Code § 4150.

³⁶² DEIR 3.3-108.

³⁶³ DEIR 3.3-29.

³⁶⁴ DEIR 3.3-108.

³⁶⁵ DEIR 3.3-108.

³⁶⁶ DEIR 3.3-108.

Environmental Awareness Program) and MM-BIO-21 (Native Bat Roost Protection) to reduce this potential impact to less than significant.³⁶⁷

But MM-BIO-21 is irrational and seemingly incomplete. It provides that if bats “are detected and cannot be completely avoided,” the Project will “safely evict” them.³⁶⁸ The measure then goes on to say that if bats “cannot be safely evicted,” activities within a specified distance will be “postponed” *until suitable conditions for eviction arise* or the bats vacate naturally.³⁶⁹ The measure ends there—meaning, there is no provision describing what the Project will do if “suitable” eviction conditions do not “arise” or the bats do not vacate naturally. This is a concern and great detail and safeguards must be included to account for this possible scenario.

e. The DEIR contradicts itself about Port of Stockton impacts on biological resources

The DEIR contradicts itself about the impacts to biological resources at the Stockton site, and in doing so, is irrational and hinders mitigations. For example, with direct impacts, the DEIR asserts that, “[o]nce all proposed facilities at the Port site are constructed, operation and maintenance impacts would not be substantially different than existing conditions.”³⁷⁰ Yet elsewhere the DEIR provides that the “eight special-status wildlife species with potential to occur on the Port site could be impacted by project activities if present in or near the work area.”³⁷¹ The DEIR’s attempt to paint the Port activities as not substantially different than the baseline is also undercut but the DEIR’s acknowledgement that an “estimated 54 acres of undeveloped land [will be] permanently converted as a result of construction at the Port site (16 acres) and other cumulative development projects (38 acres).”³⁷²

Internal contradictions also arise within the cumulative impacts analysis of biological resources for the Stockton site, which the DEIR ultimately determined would be less than significant. Downplaying the impacts, the DEIR states: “While the project may require additional lights at the storage facility, these lights would not introduce substantial light compared to the project vicinity . . . As such, any impacts to special-status wildlife species from additional activity . . . would be less than significant.”³⁷³ Contradicting this, the DEIR later goes on to admit that “[c]onstruction and operation of the proposed Port site, in combination with other similar projects in the region, could contribute to significant cumulative impacts to special-status species.”³⁷⁴ The DEIR can’t have it both ways.

³⁶⁷ DEIR 3.3-108, 109.

³⁶⁸ DEIR 3.3-130.

³⁶⁹ DEIR 3.3-130.

³⁷⁰ DEIR 3.3-92.

³⁷¹ DEIR 3.3-91.

³⁷² DEIR 3.3-113.

³⁷³ DEIR 3.3-92.

³⁷⁴ DEIR 3.3-113.

Inconsistent information also plagues the analysis riparian features and wetlands. Within the Stockton site there are approximately 1.39 acres of riparian vegetation.³⁷⁵ The DEIR concludes that “[g]iven the very small quantity and disturbed nature of the riparian vegetation on site and the availability of existing riparian habitat,” impacts to this habitat type “are considered less than significant.”³⁷⁶ But elsewhere the DEIR explains that within the Port site “there are three ditches, one seasonal wetland, and two patches of riparian woodland (CDFW jurisdiction only).”³⁷⁷ Construction may “result in the direct removal or fill of these resources, . . . resulting in the loss of wetland habitat and function.”³⁷⁸ As a result the DEIR recommends compensatory mitigation in MM-BIO-4. This internal inconsistency obscures from the public and decisionmakers the significance of impacts to resources like riparian habitats and wetlands.

4. Cross-cutting biological resources issues

a. Mitigations for wetlands losses are insufficient

There are several issues with the DEIR’s analysis of wetlands. As an initial matter for the Lassen site, the DEIR and Appendix C2 cite different acreage numbers for jurisdictional wetlands present on the property, with the DEIR claiming 42.8 acres, and Appendix C2 claiming 45 acres.³⁷⁹ This discrepancy must be corrected.

Second, avoidance of wetlands loss should be feasible and mandatory³⁸⁰ but instead the DEIR opts for compensatory mitigation.³⁸¹ Activities at the Lassen site will cause the permanent loss of around 40 acres of wetlands.³⁸² Of the approximately 10.5 acres wetlands at the Tuolumne site,³⁸³ Project activities will eliminate approximately 2.5 acres.³⁸⁴ The Stockton site suggests that around 2 acres of wetlands may be removed.³⁸⁵ The DEIR does not examine whether alternative designs for these sites could avoid wetlands and these permanent losses. If compensatory mitigation must occur, there should be a mandatory, enforceable timeline for that to occur.

Further, the DEIR ignores Dudek’s recommendation that where direct impacts to wetlands *can* be avoided, the Project should install exclusion fencing to prevent harms to what

³⁷⁵ DEIR 3.3-99.

³⁷⁶ DEIR 3.3-99.

³⁷⁷ DEIR 3.3-103.

³⁷⁸ DEIR 3.3-103.

³⁷⁹ Compare DEIR 3.3-20 with DEIR Appen. C2 at 15.

³⁸⁰ See generally CEQA Guidelines, § 15370; *V Lions Farming, LLC v. County of Kern* (2024) 100 Cal.App.5th 412, 430–431 (discussing federal wetlands mitigation regulations, which require all feasible measures to avoid and minimize impacts prior to consideration of compensatory mitigation).

³⁸¹ See MM-BIO-7, MM-BIO-4.

³⁸² DEIR 3.3-101.

³⁸³ DEIR Appen. C5 at 20.

³⁸⁴ DEIR 3.3-101.

³⁸⁵ DEIR 3.3-103.

wetlands remain.³⁸⁶ The DEIR does not mention exclusion fencing, nor does it explain why it ignored Dudek’s recommendation. Given that, as proposed, between 2.8-5 acres of wetlands will remain on the Lassen property and around 8 acres on the Tuolumne site (see above), the DEIR should require exclusion fencing.

b. The DEIR ignores the CDFW recommendation to remediate Project sites

CDFW commented during the Project’s original and revised scoping periods. For the Lassen and Tuolumne sites, CDFW advised that the Project should “consider future decommission of the facilities/staging areas associated with the Project and describe remedial efforts to restore habitat known to be present prior to Project initiation.”³⁸⁷ The DEIR ignores this expert recommendation and fails to mention remedial efforts. The DEIR should incorporate this recommendation or else explain why it is ignoring this expert agency input.

c. The DEIR improperly defers creation of the worker environmental awareness programs

Mitigation Measures MM-BIO-5 (Lassen), MM-BIO-8 (Tuolumne), and MM-BIO-17 (Stockton) create Worker Environmental Awareness Programs (WEAP). While these programs are a good start, they currently fall short of CEQA’s legal requirements and for some Project sites, appear to be unevenly applied.

First, the DEIR defers development of all three Project sites’ programs.³⁸⁸ The Project should instead create the WEAP content now and make it available for public and expert input. Under the CEQA rule against improper deferred mitigation, an EIR may not outline a mitigation measure in overly general terms, leaving the details to be decided at a later time, without setting performance standards or showing how the impact can be mitigated as described in the EIR.³⁸⁹ A worker educational program is not the type of mitigation the requires further data or inputs from operations to prescribe measures, nor is it impractical or infeasible to devise the specifics of such a program now.³⁹⁰

³⁸⁶ DEIR Appen. C2 at 9; DEIR Appen. C5 at 20.

³⁸⁷ CDFW Comment (Dec. 20, 2022) at 6, found in Appen. A at 93.

³⁸⁸ See, e.g., MM-BIO-5 at DEIR 3.3-121 (“The training will include the identification, relevant life history information, and avoidance of pertinent special- status species; identification and avoidance of sensitive natural communities and habitats present or with the potential to occur in the work area; impact minimization procedures; and reporting requirements.”).

³⁸⁹ CEQA Guidelines, §15126.4(a)(1)(B); *Preserve Wild Santee v City of Santee* (2012) 210 Cal.App.4th 260, 280 (rejected measure calling for management of species without specifying performance standards or other guidelines for that management); *San Joaquin Raptor Rescue Ctr. v County of Merced* (2007) 149 Cal.App.4th 645, 669 (measure specifying that future surveys for special status species be completed and undefined habitat management plan be developed in response to surveys found legally inadequate).

³⁹⁰ See, e.g., *Preserve Wild Santee, supra*, at p. 281; CEQA Guidelines, § 15126.4(a)(1)(B).

Specific to the Tuolumne WEAP, the mitigation measure language is broad and fails to note which species will be covered in the program. For example, MM-BIO-8 provides only that training will cover “pertinent special-status” species.³⁹¹ It’s unclear why the modifier “pertinent” is included, what this means, and who is making the call of what is “pertinent” or not. Confusingly, other Tuolumne mitigations then explicitly say that a particular species *will* be covered in the WEAP, while other species-specific mitigations do not mention inclusion in the WEAP. For example, MM-BIO-12 says that the tricolored blackbird will be included in the WEAP,³⁹² but elsewhere there is no indication that other species known to occur at the Tuolumne site, such as the Stanislaus monkeyflower. This omission occurs despite Dudek explicitly recommending that the Stanislaus monkeyflower “be included in the [WEAP].”³⁹³ Similarly, Dudek recommended including native bats in the WEAP for the Tuolumne site,³⁹⁴ but MM-BIO-14 (the bat-specific mitigation) does not mention bats being part of the WEAP. To remedy these inconsistencies and confusing misalignments, the WEAP for each Project location should be drafted and offered for public comment and review.

5. Feedstock acquisition activities

a. Forest management and thinning activities often damage forest ecosystems

Forest “treatment,” “management,” and “thinning,” is often promoted as helping protect forests from wildfire, but this misrepresents the important role of wildfire—including high-intensity fire—in California’s forest ecosystems. Fire of all intensities, called “mixed-severity” fire, is a natural and necessary part of California’s forests.³⁹⁵ Forests are adapted to mixed-severity fire and need fire to rejuvenate. In fact, patches of high-severity fire create some of the most diverse wildlife habitat of any forest type.³⁹⁶ And numerous studies show that there is currently less fire of all severities now than there was prior to modern fire suppression,³⁹⁷

³⁹¹ DEIR 3.3-123.

³⁹² DEIR 3.3-126.

³⁹³ DEIR Appen. C5 at 15.

³⁹⁴ DEIR Appen. C5 at 20 (“[n]ative bats, including pallid bat and Townsend’s big-eared bat shall be included in the worker environmental awareness program, which will educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.”).

³⁹⁵ Odion, D.C. et al., Examining historical and current mixed-severity fire regimes in Ponderosa pine and mixed-conifer forests of western North America, 9 Plos One e87852 (2014).

³⁹⁶ Swanson, M.E. et al., The forgotten stage of forest succession: early-successional ecosystems on forested sites, 9 Frontiers in Ecology and Environment 117 (2011); DellaSala, D.A. et al., Complex early seral forests of the Sierra Nevada: what are they and how can they be managed for ecological integrity? 34 Natural Areas Journal 310 (2014).

³⁹⁷ Mouillot, F. & C. Field, Fire history and the global carbon budget: a 1° x 1° fire history reconstruction for the 20th century, 11 Global Change Biology 398 (2005); Stephens, S.L. et al., Prehistoric fire area and emissions from California’s forests, woodlands, shrublands (footnote continued on next page)

depriving forests of the ecological benefits produced by intense fires, such as habitat creation and nutrient cycling.

At the same time, forest degradation from logging is considered the greatest threat facing forest-dependent species, other than forest clearance (i.e., deforestation).³⁹⁸ Many species are sensitive to logging and studies show that impacts increase with higher logging intensity and frequency. Compared to intact forests, forests degraded by logging have been found to have lower numbers of forest-dependent species; reduced ecosystem function such as lower seed dispersal and pollination services; lower functional diversity of species; reduced within-species genetic diversity which decreases the potential for adapting to changing climate and environmental conditions; and lower ability to disperse and find refugia.³⁹⁹

Notably, the DEIR claims logging/thinning proposed by this Project will target high-density forests and early seral forests (also called “snag forests”) created by high-severity fire—harming two important habitat types. Dense forest habitat, especially dense mature forest habitat, provides critical habitat for rare species like the California spotted owl, Pacific fisher, and black-backed woodpecker.⁴⁰⁰ Complex early seral forests created by high-severity fire support some of the highest levels of native biodiversity found in temperate conifer forests.⁴⁰¹ The post-fire salvage logging that this Project would conduct—characterized by clearcutting of snag forest habitat, followed by spraying of herbicides to eliminate native shrubs and creation of tree plantations—is harmful to biodiversity and wildlife habitat, as well as to carbon storage, soil integrity, hydrology, natural regeneration, and slope stability.⁴⁰²

and grasslands, 251 *Forest Ecology and Management* 205 (2007); Marlon, J.R., Long-term perspective on wildfires in the western USA, 109 *PNAS* E535 (2012); Odion, D.C. et al., Examining historical and current mixed-severity fire regimes in Ponderosa pine and mixed-conifer forests of western North America, 9 *Plos One* e87852 (2014); Parks, S.A., et al., Wildland fire deficit and surplus in the western United States, 1984-2012, 6 *Ecosphere* 275 (2015).

³⁹⁸ Watson, J.E.M. et al., The exceptional value of intact forest ecosystems, 2 *Nat. Ecol. Evol.* 599 (2018), doi: 10.1038/s41559-018-0490-x.

³⁹⁹ *Id.*

⁴⁰⁰ Zielinski, W.J. et al., Using forest inventory data to assess fisher resting habitat suitability in California, 16 *Ecological Applications* 1010 (2006); Purcell, K.L. et al., Resting structures and resting habitats of fishers in the southern Sierra Nevada, California, 258 *Forest Ecology and Management* 2696 (2009); Underwood, E.C. et al., Using topography to meet wildlife and fuels treatment objectives in fire-suppressed landscapes, 46 *Environmental Management* 809 (2010).

⁴⁰¹ Swanson, M.E. et al., The forgotten stage of forest succession: early-successional ecosystems on forested sites, 9 *Frontiers in Ecology and Environment* 117 (2011); DellaSala, D.A. et al., Complex early seral forests of the Sierra Nevada: what are they and how can they be managed for ecological integrity? 34 *Natural Areas Journal* 310 (2014); Hutto, R.L. et al., Toward a more ecologically informed view of severe forest fires, 7 *Ecosphere* e01255 (2016).

⁴⁰² Law, Beverly E. et al., Creating strategic reserves to protect forest carbon and reduce biodiversity losses in the United States, 11 *Land* 721 (2022), <https://doi.org/10.3390/land11050721>.

In contrast, allowing natural regeneration in forests, rather than post-fire salvage logging and re-planting, supports biodiversity and forest ecosystems. Natural forest regeneration promotes forest resilience in the face of climate change since the trees that survive and the trees that grow back after wildfire and other disturbance processes are likely to be the best adapted to changing climate conditions.⁴⁰³ As summarized by a recent study: “Natural disturbances, unlike mechanical treatments, select survivors that are more likely to be genetically adapted to survive future disturbances and climate change, while perpetuating ecosystem services.”⁴⁰⁴ Importantly, studies have documented substantial natural regeneration following high-severity fire in mixed-conifer and yellow pine forests in California (including regeneration deep into interior spaces of large high-severity fire patches), showing that post-fire logging and re-planting is unnecessary.⁴⁰⁵

Ultimately, rather than improve forest ecosystems and prevent wildfires, this Project will worsen both. The DEIR must discuss the literature cited in this section and, as a result, be revised with a new impacts analysis and mitigation measures to address the harms the Project’s feedstock acquisition activities will produce.

b. The feedstock program description is vague and lacks sufficient information

An accurate description of a proposed program is “the heart of the EIR process” and necessary for an intelligent evaluation of the project’s environmental effects.⁴⁰⁶ While extensive detail is not necessary, the law mandates that EIRs should describe proposed projects with sufficient detail and accuracy to permit informed decision-making.⁴⁰⁷

Here, the scale of the program is staggering: “The Working Area consists of forested land within roughly 100 miles of the pellet processing sites (Lassen Facility and Tuolumne

⁴⁰³ Rogers, Brendan M. et al., Using ecosystem integrity to maximize climate mitigation and minimize risk in international forest policy, 5 *Frontiers in Forests and Global Change* 929281 (2022), <https://doi.org/10.3389/ffgc.2022.929281>.

⁴⁰⁴ Baker, William et al., Harnessing natural disturbances: a nature-based solution for restoring and adapting dry forests in the Western US to climate change, 6 *Fire* 428 (2023), <https://doi.org/10.3390/fire6110428>.

⁴⁰⁵ Baker, William L., Transitioning western U.S. dry forests to limited committed warming with bet-hedging and natural disturbances, 9 *Ecosphere* e02288 (2018), <https://doi.org/10.1002/ecs2.2288>; Hanson, Chad T., Landscape heterogeneity following high-severity fire in California’s forests, 42 *Wildlife Society Bulletin* 264 (2018), <https://doi.org/10.1002/wsb.871>; Hanson, Chad T. & Tonja Y. Chi, Impacts of postfire management are unjustified in spotted owl habitat, *Frontiers in Ecology and Evolution* (2021), <https://doi.org/10.3389/fevo.2021.596282>.

⁴⁰⁶ *Sacramento Old City Assn. v. City Council of Sacramento*, 229 Cal.App.3d 1011, 1023 (1991); see *Rio Vista Farm Bureau v. Cnty. of Solano*, (1992) 5 Cal.App.4th 351, 369-370 (project description is the “sine qua non” of an informative and legally sufficient EIR) (citations omitted).

⁴⁰⁷ See CEQA Guidelines, § 15124 (requirements of an EIR).

Facility), excluding areas limited by environmental factors, roadway access, or lack of adequate forest land” and “includes parts of California, southern Oregon, and western Nevada.”⁴⁰⁸ Therefore, feedstock projects can take place in any forest area within approximately 62,800 mi² of “Working Area.”⁴⁰⁹ This is an area larger than 20 of the 50 U.S. states.⁴¹⁰ Yet while the scale is staggering, the DEIR fails to provide sufficient details to inform the public, decisionmakers, and mitigations.

For one, it is not possible to discern from the DEIR the exact boundaries of, and biological resources within, the Working Area. The maps of the Working Area⁴¹¹ are in too broad a scale to depict this information. CEQA requires an EIR to include the “precise location and boundaries of a proposed project to be shown on a detailed map.”⁴¹² There is no reason why the maps could not have been printed with a more detailed scale on multiple pages. Because the DEIR fails to include this fundamental information, there can be no meaningful evaluation of the Project’s environmental impacts.

Second, despite CDFW’s suggestion in its Scoping Comments that the DEIR include a “detailed vegetation map” “preferable overlaid on an aerial photograph,”⁴¹³ the maps of the dominant forest types and “Modified Treatable Area”⁴¹⁴ are similarly broad. None of these maps are serious tools of measurement to identify treatment locations even though treatment projects can occur anywhere within national, state, or private forests or timberlands within the Working Area. The DEIR also offers no explanation for why it ignored CDFW’s suggestion for how to depict biological resources for the feedstock acquisition activities.

Further, the failure to include a sufficiently detailed map contravenes the DEIR’s purpose as an informational document that engenders public participation.⁴¹⁵ Without more detail, localized and cumulative impacts cannot be sufficiently analyzed, and landowners cannot determine whether they or neighboring properties are susceptible to treatment projects. This is especially important because this DEIR is the only opportunity for the public to understand and weigh in on the big-picture questions that will determine the magnitude of

⁴⁰⁸ DEIR 3.3-1.

⁴⁰⁹ Although the Working Area is not a perfect circle around each site, the lack of detailed information in the DEIR has forced readers to make an estimation of the total area: (100 miles radius² from each site)(π). The DEIR does not provide information on exactly how many miles within this area consist of forest and treatment areas that are subject to future treatment projects. Combining Tables 1 and 2 in Appendix B8 suggests that 5,664,849 acres are 80 percent of the potential treatment areas, which further suggests that the total treatable area is 7,081,061 acres. This should be explained in the DEIR, however.

⁴¹⁰ States by Size in Square Miles, https://statesymbolsusa.org/symbol-official-item/national-us/uncategorized/states-size#google_vignette.

⁴¹¹ DEIR Figures 2-1, 2-2.

⁴¹² CEQA Guidelines, § 15124(a).

⁴¹³ CDFW, Dec. 20, 2022 Scoping Comments at p. 5.

⁴¹⁴ DEIR Appen. B8, Figures 1 and 2.

⁴¹⁵ See, e.g., *In re Bay-Delta Programmatic Env’t Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1162.

ecological and biological impacts that would accompany the broad implementation of this Project.

In addition to heeding the CDFW's recommendation, the DEIR should provide a map of, and analyze impacts to biological resources by, ecoregions. The DEIR already describes the various regions.⁴¹⁶ In addition, the DEIR should provide more detailed information on *all* affected forest types, ownerships, and management regimes. Yet, for instance, Table 1 in Appendix B8 describes only the 80 percent of the forests that are the “dominant forest types.”⁴¹⁷ There is no information on the remaining 20 percent.

Finally, the feedstock acquisition program description is deficient not only because it too broad and imprecise to be meaningful, but because it fails to explain that the pellet mills will create a massive, long-term demand for feedstock and therefore incentive new thinning and harvesting projects.⁴¹⁸ The Project could create an ongoing demand for logging to produce up to one million tons of wood pellets for export every year.⁴¹⁹ Yet the project description fails to note that this project *creates* this long-term, ongoing demand for feedstock, and thus create ongoing impacts to biological resources.

c. The DEIR improperly defers—and piecemeals—biological impacts analysis, significance determinations, and mitigation measures from feedstocks to future assessments without committing to project-level EIRs

While the DEIR offers project-level information and analyses for the production and shipping facilities (Lassen, Tuolumne, and Stockton), it inexplicably offers only a program-level DEIR for feedstock acquisition activities. This is arbitrary, deprives the public of important information, and improperly piecemeals environmental analysis and mitigations. In so doing, for GSNR thinning or “treatment” projects, the DEIR relies on vague, generic, and unenforceable Project Design Features and mitigation measures (see *supra*, section V) even though it's not clear whether any future project-level environmental reviews for individual “treatment” projects will happen, or, if they do, that biological impacts will be identified or mitigated.

i. The DEIR does not guarantee analysis and review of thinning projects

It is especially concerning that the Project defers and delegates determinations as to whether biological impacts will be significant to future assessments performed by GSFA and

⁴¹⁶ See DEIR Table 3.3-3 and subsequent descriptions.

⁴¹⁷ DEIR Appen. B8, at p. X-2 and Figures 1 and 2.

⁴¹⁸ Shute, Mihaly & Weinberger, Dec. 17, 2022 Scoping Comments, pp. 8-9, citing October Board Packet at 10 (describing “pellet production ramp-up”).

⁴¹⁹ Shute, Mihaly & Weinberger, June 29, 2023 Scoping Comments, p. 4, citing a “Wood Produces Infrastructure Assistance” grant application GSNR submitted to the US Forest Service for fiscal year 2022.

individual contractors⁴²⁰— without any guarantee that these determinations will be subject to review by the public or other wildlife experts. For example, for GSNR projects, the DEIR states:

GSFA shall prepare a Project Specific Analysis (PSA) for each GSNR Biomass Only Thinning Project. The purpose of the PSA is to evaluate the proposed project site and treatment activities to determine whether the environmental effects of these activities are addressed within the scope of this program EIR, consistent with Section 15168 of the CEQA Guidelines. The PSA shall also determine that all applicable PDFs and mitigation measures identified in this EIR have been incorporated into the project, is within the scope of this EIR, then no additional CEQA documentation would be required for GSFA's approval (i.e., additional EIR, negative declaration, or MND).⁴²¹

Thus, a subsequent project need only be included in the scope of the Program EIR to escape further (and more comprehensive) environmental review. Due to the excessively broad scope of the feedstock Working Area, it is almost impossible to imagine GSFA—which has an interest in speeding through projects to feed the pellet mills as quickly as possible—determining that a subsequent activity is outside the scope of this EIR. The process is effectively designed so that such analysis will never occur. There is no assurance that the PSA process would result in meaningful project-level environmental review pursuant to CEQA, NEPA, or otherwise.

The sheer number of forest treatment projects that are envisioned to occur on a yearly basis and the geographic scope of these projects alone would suggest that determining each subsequent activity's environmental impacts would not be subject to a sufficient level of scrutiny. The DEIR contemplates potentially *hundreds* (or even thousands) of GSNR-only projects per year—not including harvest residuals projects. That this process is already time consuming and costly does not bode well for future project-level environmental review.⁴²² Yet, due to the excessively broad scope of the Working Area, it is almost impossible to imagine a determination that a subsequent activity is outside the scope of the Program EIR.

⁴²⁰ The DEIR itself also finds that impacts to biological resources will be “less than significant” with PDFs and mitigation. This assumption is dangerous and unsubstantiated because projects could occur anywhere within a vast Working Area, and no project-level analyses or mitigation measures have yet been conducted or implemented.

⁴²¹ DEIR 2-12 to 2-13.

⁴²² Each project contains a multi-step implementation process—of which the determination of environmental impacts is only part. For each project, GSFA would have to: 1) coordinate with multiple stakeholders to identify potential projects; 2) work with foresters to design the project; 3) conduct data review and reconnaissance-level surveys one year prior to preparing a PSA; 4) prepare a PSA which will determine whether further environmental review is required; 5) submit the PSA to the Executive Director who would then file a Notice of Determination if no further review is required. DEIR 2-11 to 2-19.)

It is particularly disconcerting that the PSA review, determination, and mitigation would happen behind closed doors.⁴²³ The public’s right to participate in the environmental review process under CEQA is mandated in the statute itself and is vigilantly protected by the California courts that interpret and enforce CEQA.⁴²⁴ Put simply, the public participation process is a critical tool to ensure that the public has an opportunity to hold agencies accountable for their actions.

- ii. *GSFA has no forest management expertise and should not determine whether additional environmental review and mitigations are triggered*

Under the arrangement envisioned in the DEIR, as noted above, GSFA will determine whether additional environmental analysis and mitigations are required based on the impacts of specific forest thinning projects. This is absurd. GSFA itself has no experience in forest management or management of listed species; therefore, the Executive Director of GSFA should not be the final word on whether further environmental review is required. Proper environmental review requires experts covering the range of impact categories of which CEQA requires analysis. There is no indication that a GSFA and its consultant biologist or forester would have the necessary expertise to evaluate all of the forest treatment projects’ potential ecological and biological consequences—much less to do so at the rate envisioned by the GSFA.

Relatedly, mitigations—if they do occur for thinning projects—are improperly deferred.⁴²⁵ Under CEQA, in the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the EIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan.⁴²⁶ Here, the DEIR leaves too much discretion for mitigation measures to be considered, analyzed, and possibly incorporated at the project level by a biologist or Registered Professional Forester (RPF) in order to minimize impacts to special-status species due to treatment activities.

⁴²³ The DEIR says this is a “public process,” but the steps described in the process do not include any opportunity for public participation. DEIR 2-11 to 2-13.)

⁴²⁴ Pub. Resources Code, § 21091.

⁴²⁵ For instance, the RPF or biologist has the power here to determine whether to contact wildlife agencies if suitable habitat is present and adverse effects cannot be avoided (DEIR 2-19 [PDF-Bio-1]); when it is “necessary” to conduct focused or protocol-level surveys (DEIR 2-20 [PDF-Bio-1]); delineate no-disturbance buffer distances (DEIR 2-22 [PDF-Bio-6]); whether a species is actually likely to benefit from “treatment in the occupied habitat, even if some individual(s) may be lost during treatment activities” (DEIR 2-22 [PDF-Bio-6]); whether following an established protocol is required if suitable habitat for special-status species is present and cannot be avoided (DEIR 2-22 [PDF-Bio-7]); design treatments to minimize or avoid the loss or degradation of the demarcated habitat features (DEIR 2-25 [PDF-Bio-10]); and so on.

⁴²⁶ See *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736–737.

Because the DEIR provides no assurance that the biological impacts from the GSNR's subsequent treatment activities will be adequately evaluated or mitigated, the document is grossly deficient. The GSNR must be redesigned and the DEIR revised to commit to a program that ensures that each subsequent activity will receive full environmental review pursuant to CEQA *with full public participation*. As part of this program redesign, the revised DEIR must demonstrate, with substantial evidence, that the program has sufficient staffing to provide comprehensive environmental review for all of the subsequent feedstock acquisition activities.

d. The DEIR ignores key recommendations from CDFW

With respect to biological impacts, the feedstock acquisition “treatment” projects are likely to require authorization under the California Endangered Species Act, which can be granted only if the impacts are minimized and fully mitigated and only if the issuance of the take permit would not jeopardize the continued existence of the species.⁴²⁷ CDFW must make this determination based on the best scientific and other information that is reasonably available.⁴²⁸ CDFW relies on the CEQA document to make these determinations; therefore, it is imperative that a lead agency consider CDFW's recommendations instead of deferring them until the individual project review, approval, and permitting stages.

CDFW did not offer suggestions on feedstock acquisition activities because these proposals did not appear in the scoping period. This means that GSFA must make sure to obtain CDFW's recommendations on the DEIR. That aside, CDFW submitted comments on other biological resources issues during the scoping period that must be heeded, but so far are not. For instance, CDFW advised that all necessary biological surveys be conducted in advance of the DEIR circulation and not be deferred until after Project approval.⁴²⁹ Yet the DEIR defers biological surveys on feedstock acquisition activities until either the project design or review and approval phases.⁴³⁰ The DEIR also defers other CDFW recommendations to future assessments with uncertain environmental review, such as:

- “Focused species-specific surveys, conducted at the appropriate time of year and time of day when the species are active or otherwise identifiable,” developed in consultation with CDFW and USFWS”;

⁴²⁷ Fish and Game Code, § 2081.

⁴²⁸ Fish and Game Code, § 2081(c).

⁴²⁹ CDFW, Dec. 20, 2022 Scoping Comments at p. 5.

⁴³⁰ It is not clear when exactly when biological surveys will begin other than that the data “review and surveys will be conducted no more than one year prior to the preparation of the Project-Specific Analysis (PSA), and no more than one year between completion of the PSA and implementation of each treatment project.” DEIR 2-19. The PSA is prepared during the Project Review and Approval stage, which happens after Project Design. DEIR 2-12. CDFW recommends consultation to “occur well in advance of any ground-disturbing activities.” CDFW, Dec. 20, 2022 Scoping Comments at p. 8.

- Assessing impact significance to populations of species of special concern by considering “population-level effects, proportion of the taxon’s range affected by a project, regional effects, and impacts to habitat features”;
- Cumulative impacts analysis “for species and habitats potentially affected by the Project”;
- “[Q]uantify and describe the direct and indirect potential impacts to CEQA-listed habitat”;
- Specific mitigation measures including an analysis of the feasibility of on-site habitat restoration or enhancement, and plans for restoration and revegetation;⁴³¹
- Evaluate “impacts to native tree species with a diameter at breast height (DBH) of great than 4 inches”⁴³²

As “CDFW relies on the CEQA document prepared by the Lead Agency to make a finding and decide whether to issue a permit or agreement,”⁴³³ the DEIR should be revised to include a more detailed analysis of and mitigation measures, for, feedstock acquisition activities. As the Court of Appeal explained in *Stanislaus Natural Heritage Project v. County of Stanislaus*, CEQA requires that this environmental review take place before project approval.⁴³⁴ Full site-specific environmental review is critical because the “location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface acreage may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them.”⁴³⁵

e. The PDFs and mitigation measures are inadequate to minimize impacts, including cumulative impacts, from feedstock acquisition on listed species

i. The DEIR fails to protect listed species from GSNR treatments

The Supreme Court has unequivocally stated that the Endangered Species Act’s (ESA) “language, history, and structure” made clear “beyond doubt” that “Congress intended endangered species to be afforded the highest of priorities” and endangered species should be given “priority over the ‘primary missions’ of federal agencies” especially during such

⁴³¹ All bullets above from CDFW, Dec. 20, 2022 Scoping Comments.

⁴³² CDFW, June 29, 2023 Scoping Comments at p. 3.

⁴³³ CDFW, Dec. 20, 2022 Scoping Comments at p. 2.

⁴³⁴ *Stanislaus Natural Heritage Project*, *supra*, at p. 196. In *Stanislaus*, the court rejected the argument that a programmatic EIR for a specific plan and general plan amendment could ignore site-specific environmental review because future phases of the development project would include environmental review, stating that tiering “is not a device for deferring the identification of significant environmental impacts that the adoption of a specific plan can be expected to cause.” *Id.* at p. 199.

⁴³⁵ *New Mexico ex rel. Richardson* (10th Cir. 2009) 565 F.3d 683, 706 (in the context of NEPA). See also *Southeast Alaska Conservation Council v. U.S. Forest Serv.* (D. Alaska 2020) 443 F.Supp.3d 995, 1010.

consultations.⁴³⁶ Even with a global threat to biodiversity such as climate change, “the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, *whatever the cost*.”⁴³⁷

The DEIR notes that there are a whopping 643 special-status species, including 200 special-status wildlife species, that may occur in the Working Area.⁴³⁸ The DEIR recognizes thinning projects could result in harm to these species from a myriad of actions, including: physical breakage, trampling, uprooting, installation of new roads, installation of temporary stream crossings, dust that affects photosynthesis, and introduction of invasive species, among other impacts.⁴³⁹ Some of these could result in harm to or take of listed species. Table 3.3-14 provides a list of the special-status wildlife species most likely to be affected by treatment projects because they occur in National Forests or other timberlands.

Despite this acknowledgment, GSFA improperly defers specific mitigation and consultation with wildlife agencies on best practices to avoid or mitigate impacts to the Project Design or Review and Approval stage or mitigation stage of future treatment projects. GSNR projects will receive federal funding and will be conducted pursuant to an agreement with the U.S. Forest Service,⁴⁴⁰ will occur in national forests, and may affect federally listed species. The USFS and/or GSNR must therefore comply with the consultation requirements of Section 7 of the ESA and conduct consultation now.

The “heart of the ESA” is the interagency consultation requirements of Section 7 of the ESA.⁴⁴¹ At the first step of the consultation process, an action agency must determine if its action either “may affect” listed species or will have “no effect” on listed species within the action area. Under the ESA, “action” is broadly defined to include “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas” and include, but are not limited to “(a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.”⁴⁴² Similarly, the “action area” is equally broadly defined as “all areas to be affected directly *or indirectly* by the Federal action and not merely the immediate area involved in the action.”⁴⁴³

The “may affect” standard broadly includes “[a]ny possible effect, whether beneficial, benign, adverse or of an undetermined character.” “[A]ctions that have any chance of affecting

⁴³⁶ *Tenn. Valley Auth. v. Hill* (1978) 437 U.S. 153, 174, 185.

⁴³⁷ *Id.* at p. 184 (emphasis added).

⁴³⁸ DEIR 3.3-65.

⁴³⁹ DEIR 3.3-65 to 3.3-66.

⁴⁴⁰ MSA, <https://goldenstatenaturalresources.com/wp-content/uploads/2024/02/GSFA-USDAForestSvc-Final-Executed-MSA-2019.pdf>

⁴⁴¹ *W. Watersheds Project v. Kraayenbrink* (9th Cir. 2011) 632 F.3d 472, 495; 16 U.S.C. § 1536.

⁴⁴² 50 C.F.R. § 402.02.

⁴⁴³ 50 C.F.R. § 402.02 (emphasis added).

listed species or critical habitat—even if it is later determined that the actions are ‘not likely’ to do so—require at least some consultation under the ESA.”⁴⁴⁴ The only way for an agency to avoid ESA Section 7 consultation is if the agency determines that its action will have “no effect” on threatened or endangered species or critical habitat⁴⁴⁵ – or if, the agency conducts an informal consultation/biological assessment and obtains “written concurrence” from the Services “that the proposed action is not likely to adversely affect any listed species or critical habitat.”⁴⁴⁶ In essence, as the Joint Consultation Handbook explains, a “no effect” finding means exactly what it says, and is only properly made “when the action agency determines its proposed action will not affect a listed species or designated critical habitat.”⁴⁴⁷

Under Section 7, an “agency shall . . . request” from the U.S. Fish and Wildlife Service (USFWS) information regarding whether any listed species “may be present” in a proposed action area, and if so, the “agency shall conduct a biological assessment” to identify species likely to be affected. The agency must then initiate formal consultation with the Services if a proposed action may affect any of those listed species. Formal consultation under Section 7(a)(2) results in the preparation of a biological opinion by the Services that determines if the proposed action is likely to jeopardize the continued existence of a listed species or adversely modify the species’ critical habitat.⁴⁴⁸ If so, the opinion may specify reasonable and prudent alternatives (RPAs) that avoid such jeopardy.⁴⁴⁹ If the USFWS concludes that the action or the RPAs will not cause jeopardy, but will nonetheless result in the take of a listed species, USFWS will issue an incidental take statement (ITS) as part of the biological opinion that specifies “the impact, i.e., the amount or extent, of . . . incidental taking” that may occur, and any measures necessary or appropriate to minimize such impact on the listed species.⁴⁵⁰

The DEIR already explains that feedstock projects “may affect” listed species in the Working Area. Consultation should therefore happen now. Such consultation would provide measures to avoid harming listed species – potentially also suggesting areas to avoid – and could therefore aid in determining where and how feedstock projects should take place. Waiting until a thinning project area has been identified and planning begun makes avoiding harm or take more difficult and prevents analysis by the agencies of cumulative impacts of multiple treatment projects on listed species.

At the specific feedstock project level, it is unclear when exactly consultation might occur. According to the Project description, it appears that GSNR will identify and design a

⁴⁴⁴ *Karuk Tribe v. Cal. v. U.S. Forest Serv.* (9th Cir. 2012) 681 F.3d 1006, 1027.

⁴⁴⁵ *Nat’l Parks Conservation Ass’n v. Jewell* (D.C. 2014) 62 F. Supp. 3d 7, 12 (citing *Ctr. for Biological Diversity v. U.S. Dep’t of Interior* (D.C. Cir. 2009) 563 F.3d 466, 475.

⁴⁴⁶ 50 C.F.R. §§ 402.14(b)(1), 402.13(c); 402.12(k)(1).

⁴⁴⁷ U.S. Forest Service and National Marine Fisheries Service, *Endangered Species Consultation Handbook*, at xvi. However, the agencies are still encouraged to obtain written concurrence from the Services. *See id.* definitions of “Formal consultation” and “Informal consultation” at xiv, xv.

⁴⁴⁸ 16 U.S.C. § 1536(b).

⁴⁴⁹ 16 U.S.C. § 1536(b); 50 C.F.R. 402.14(h)(3).

⁴⁵⁰ 50 C.F.R. § 402.14(h)(3), (i).

project prior to even beginning data review or reconnaissance-level surveys for suitable habitat special-status, including listed, species.⁴⁵¹ Notably, the Project Description does not include the ESA requirement to request from USFWS information regarding whether any listed species “may be present” in the area or to conduct a biological assessment to identify species likely to be affected.⁴⁵² Rather, a “qualified RPF or biologist” will conduct the initial surveys. This requirement must be added early in the process to allow for formal consultation if necessary.

The PDFs and mitigation measures further seem to muddy the ESA consultation requirements, making it unclear, at best, as to how they will be implemented. For instance, if the initial high-level surveys find suitable habitat present but adverse effects can be avoided, the project will go ahead, ostensibly avoiding impacts. Pursuant to PDF-Bio-1, if habitat is present and adverse effects cannot clearly be avoided, the RPF or biologist will conduct further review, which *may* include contacting USFWS, NOAA Fisheries, CDFW, or local resource agencies. PDF-Bio-5 and -7 then require the biologist or RPF to conduct protocol-level surveys. The ESA *requires* Section 7 consultation, however, for every discretionary agency action that “may affect listed species or critical habitat”—including “beneficial” and “benign” impacts or impacts of “undetermined character.”⁴⁵³ Here, PDF-Bio-1, -5, and -7 do not require a biological assessment or informal or formal consultation with the wildlife agencies. Nor does the project process require a “no effect” determination before moving forward with the project. The Project Design Features’ focus solely on “adverse effects,” discretionary language, and failure to require consultation, violate the broad “may affect” language of the ESA.

PDF-Bio-9 addresses the protocols if surveys show state or federal fully protected species are actually present in the area. At this late stage—well beyond the point when the project “may affect” listed species—GSNR will try to ensure that “Project activities will not be implemented within habitat occupied by California Fully Protected Species or species listed under ESA or CESA.”⁴⁵⁴ Project activities can apparently occur, however, as long as the RPF or biologist, using “the most current and commonly-accepted science and considering published agency guidance,” determines the activity is “a sufficient distance from the occupied habitat” or “outside the sensitive period of the species’ life history.”⁴⁵⁵ Again, these determinations are far too late and must be conducted in consultation with the wildlife agencies. Furthermore, the ESA requires the use of the “best scientific and commercial data available,”⁴⁵⁶ not simply “commonly-accepted science.” This PDF is again in violation of the ESA.

The only instances when GSNR *must* consult with the wildlife agencies, according to the DEIR, is if species are present or if the RPF or biologist is trying to determine whether a species would “benefit from treatment activities in the occupied habitat, even if some

⁴⁵¹ DEIR 2-11 to 2-13.

⁴⁵² 16 U.S.C. § 1536(c).

⁴⁵³ See *Nat’l Ass’n of Home Builders v. Defs. of Wildlife* (2007) 551 U.S. 644; 50 C.F.R. § 402.14(a); 51 Fed. Reg. 19,926 (Jun. 3, 1986).

⁴⁵⁴ DEIR 2-24.

⁴⁵⁵ DEIR 2-4.

⁴⁵⁶ 16 U.S.C. § 1533(b)(1)(A).

individual(s) may be killed, injured, or disturbed during treatment activities.”⁴⁵⁷ Alternatively, it is possible that consultation is not required at all unless as a mitigation measure because avoidance of take is not possible, though that is not clear from the DEIR. MM-Bio-1 states that if avoidance of take of a listed species is not possible, “GSNR will sufficiently compensate for such impacts. GSNR will initiate consultation with USFWS, CDFW, and/or USFS, as appropriate based on the identified species.” It then describes in generic terms the Section 7 and Section 9 ESA requirements. But it does not specify how it will implement these requirements.⁴⁵⁸ In any case, these requirements are far too late and, as above, ignore the broad “may affect” requirements for consultation whereby even a “beneficial” effect requires consultation. That the RPF or biologist can determine whether a project will benefit a species – only with technical support from CDFW and/or USFWS – is not protective enough.

Consultation must occur if there is any chance a project may affect species or critical habitat. And it must occur early enough to allow for the preparation of a biological assessment and, if necessary, a biological opinion. “In no uncertain terms, the [ESA] mandates that [Agencies] shall engage in consultation before taking any action that could jeopardize the continued existence of any endangered species or threatened species.”⁴⁵⁹ Having a biologist or RPF make critical decisions that may affect special-status species without mandatory consultation early on in the process violates the ESA and is likely to result in illegal take of CESA or ESA listed or state fully protected species. This glaring error *must* be corrected before the project moves forward.

ii. *The DEIR fails to adequately evaluate and mitigate cumulative biological impacts of feedstock acquisition*

Because the DEIR defers environmental review and meaningful biological assessments to the feedstock acquisition project-level stage, it fails to adequately analyze and mitigate the biological impacts of the Project’s feedstock acquisition activities as a whole, including cumulative impacts. The DEIR must address cumulative impacts of thinning and other Project related forest activities in the context of other past, present, and reasonably foreseeable impacts. As suggested in the scoping comments, “[a] large proportion of the ‘woodshed’ for the pellet facilities has been managed intensively for industrial timber production for many decades, with significant cumulative degradation to watersheds throughout the region. Cumulative impacts should be assessed with locational specificity at geographically meaningful scales (i.e., at the planning watershed and subwatershed level).”⁴⁶⁰

Instead of conducting this analysis, the DEIR simply concludes, without evidence, that cumulative impacts will *not* be considerable:

The geographic context for feedstock acquisition (Sustainable Forest Management Project) is on private and public forested land and other timberlands within the Working Area (shown as “Forest Management

⁴⁵⁷ See, e.g., PDF-Bio-9; PDF-Bio-10; MM-Bio-1; MM-Bio-2.

⁴⁵⁸ DEIR 3.3-116.

⁴⁵⁹ *Center for Biological Diversity v. EPA* (D.C. Cir. 2017) 861 F.3d 174, 188 at fn. 10.

⁴⁶⁰ Shute, Mihaly & Weinberger, Dec. 17, 2022 Scoping Comments, p. 10.

Area” on Figures 2-1 and 2-2). . . . The project’s contribution to significant cumulative impacts to special-status plant and wildlife species would not be cumulatively considerable. . . . [I]mplementation of PDFs and mitigation measures would reduce the proposed project’s contribution to this impact. PDFs require pre-field desk reviews and as-needed focused/protocol surveys prior to commencement of biomass only thinning projects to identify special-status species and implementation of measures to avoid these species and their habitat. If avoidance is not feasible, MM-BIO-1 through MM-BIO-4 require the project proponents to fully compensate for such species and/or habitat impacts. Thus, with implementation of PDFs and mitigation measures, the proposed project would mitigate any project-level impacts to less than significant. Therefore, the project’s contribution would not be cumulative considerable.⁴⁶¹

In other words, the DEIR simply assumes—without evidence or analysis—that any cumulative impacts will be effectively addressed by the PDFs and mitigation measures. There is no support for this conclusion, as explained earlier in this section.

CEQA mandates the DEIR provide in-depth analysis of a large-scale project, looking at effects “as specifically and comprehensively as possible.”⁴⁶² The agencies and the public must have opportunity to consider cumulative impacts that might be slighted in a case-by-case analysis.⁴⁶³ That so much of the analysis is improperly deferred and piecemealed to future project-level assessments—that may or may not include environmental review under the appropriate statute (see *supra*, section III)—only underscores the need for a full cumulative impacts analysis of biological impacts at the programmatic level now.

Due to the enormous scale and geography of the Working Area, there is a risk of significantly increased magnitude of habitat alteration and destruction for listed and special-status species compared with baseline logging and thinning projects. The DEIR notes that a “total of 643 special-status plant species have potential to occur in the Working Area” and “200 special-status wildlife species [are] known or [have] potential to occur in the Working Area.”⁴⁶⁴ The DEIR must evaluate the impacts of all of the feedstock acquisition projects—GSNR and harvest residuals—together on these species, as well as sensitive natural communities and ecosystems and critical habitats.

For example, Table 3.3-5 of the DEIR lists the designated critical habitat for federally listed species in the Working Area. For several of these species, more than 50 percent of their critical habitat is within the Working Area.⁴⁶⁵

⁴⁶¹ DEIR 3.3-112.

⁴⁶² CEQA Guidelines, § 15168(a), (c)(5).

⁴⁶³ CEQA Guidelines, § 15168(b).

⁴⁶⁴ DEIR 3.3-65, 3.3-68.

⁴⁶⁵ Critical habitat data from the U.S. Fish and Wildlife Service, <https://ecos.fws.gov/ecp/report/critical-habitat>

Species Name	Species total CH (acres)	CH within project (acres)	% within project area
Fleshy owl's-clover	278,569.6	175,746.1	63.1
Hairy orcutt grass	126,413.5	79,557.1	62.9
Greene's tuctoria	231,388.1	145,052.1	62.7
Sacramento orcutt grass	54,229.3	33,277.0	61.4
Butte County meadowfoam	28,127.1	16,644.1	59.2
Valley elderberry			
longhorn beetle	844.1	490.5	58.1
Colusa grass	242,222.7	138,060.2	57.0
San Joaquin orcutt grass	214,888.3	121,486.5	56.5
Slender orcutt grass	163,382.2	90,497.9	55.4
Shortnose Sucker	226,142.7	123,652.5	54.7
Lost River sucker	215,676.7	117,908.9	54.7
Species Name	Species total CH (miles of stream)	CH within project (miles of stream)	% within project area
Shortnose sucker	281.1	208.0	74.0
Lost River sucker	190.7	140.9	73.9

The DEIR must answer critical questions such as: How many GSNR and harvest residual projects will be in these species' critical habitat? How might hundreds or thousands of projects per year affect their already limited range? How might the cumulative impacts of the treatment projects over the 20-year period of the Master Stewardship Agreement (MSA) with the U.S. Forest Service affect species and their habitat?

The DEIR notes that there are numerous sensitive natural communities that “may be of special importance to federal and state agencies and local conservation organizations for a variety of reasons, including their rarity or regionally declining status, or because they provide important habitat to common and special-status plant and wildlife species” within the Working Area in California, Oregon, and Nevada. Would the thousands of acres “treated” each year affect the contiguity of these communities?⁴⁶⁶ Additionally, “the Working Area intersects tens of thousands of linear miles of streams, rivers, canals, and ditches, as well as freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine habitat,” as well as hundreds of watersheds within the Working Area.⁴⁶⁷ How might past, present, and future projects cumulatively affect these resources, which intersect with each other and provide critical resources for ecosystems?

⁴⁶⁶ DEIR 3.3-96 to 3.3-97.

⁴⁶⁷ DEIR 3.3-99; Appen. C1, Table 1.

f. The DEIR fails to adequately analyze and mitigate other biological impacts from feedstock acquisition

There are several other biological impacts from feedstock acquisition that the DEIR fails to adequately analyze and mitigate.

i. The DEIR fails to adequately analyze and mitigate inclusion of large-diameter roundwood in feedstock

The Project also allows for the harvest of whole trees of up to 30 inches DBH, and even up to 40 inches DBH under a range of circumstances.⁴⁶⁸ As explained earlier in this section, many species are sensitive to logging and studies show that impacts increase with higher logging intensity and frequency. Larger trees can have fire-resistant “plated” bark structure and tall canopies, snags with nesting cavities and broken tops valuable to wildlife, as well as vertical and horizontal structural diversity within stands. Recruitment of large trees, snags and large woody debris will become more limiting over time as climate change imposes chronic drought, reduced tree growth rates, and more widespread tree mortality.⁴⁶⁹

In forests with a variety of species and disturbance regimes, large tree removal reduces forest canopy and diminishes recruitment of large snags and downed logs, which in turn affects long-term forest dynamics, stand development and wildlife habitat suitability.⁴⁷⁰ The Project’s targeting of large trees will make it highly unlikely that the project will maintain habitat for threatened and sensitive wildlife species associated with closed-canopy forest.⁴⁷¹

⁴⁶⁸ See, e.g., DEIR 2-7 (harvest residuals may include “roundwood”), 2-15, 2-37, 2-44.

⁴⁶⁹ Diggins, C., P.Z. Fulé, J.P. Kaye and W.W. Covington. 2010. Future climate affects management strategies for maintaining forest restoration treatments. *International Journal of Wildland Fire* 19: 903-13; Savage, M. P.M. Brown, and J. Feddema. 1996. The role of climate in a pine forest regeneration pulse in the southwestern United States. *Ecoscience* 3: 310-18; Seager, R., M. Ting, Y. Kushnir, J. Lu, G. Vecchi, H. Huang, N. Harnik, A. Leetmaa, N. Lau, C. Li, J. Velez and N. Naik. 2007. Model projections of an imminent transition to a more arid climate in southwestern North America. *Science* 316: 1181-84; Van Mantgem, P.J., N.L. Stephenson, J.C. Byrne, L.D. Daniels, J.F. Franklin, P.Z. Fulé, M.E. Harmon, A.J. Larson, J.M. Smith, A.H. Taylor and T.T. Veblen. 2009. Widespread increase of tree mortality rates in the western United States. *Science* 323: 521-24; Williams, A.P., C.D. Allen, C.I. Millar, T.W. Swetnam, J. Michaelsen, C.J. Still and S.W. Leavitt. 2010. Forest responses to increasing aridity and warmth in the southwestern United States. *PNAS* 107: 21289-94.

⁴⁷⁰ Quigley, T.M., R.W. Haynes and R.T. Graham. 1996. *Disturbance and Forest Health in Oregon and Washington*. USDA For. Serv. Pac. Nor. Res. Sta. Gen. Tech. Rep. PNW-GTR-382; Spies, T.A. 2004. Ecological concepts and diversity of old-growth forests. *Journal of Forestry* 102: 14-20; van Mantgem, P.J., N.L. Stephenson, J.C. Byrne, L.D. Daniels, J.F. Franklin, P.Z. Fulé, M.E. Harmon, A.J. Larson, J.M. Smith, A.H. Taylor and T.T. Veblen. 2009. Widespread increase of tree mortality rates in the western United States. *Science* 323: 521-24.

⁴⁷¹ Beier, P., and J. Maschinski. 2003. Threatened, endangered, and sensitive species. Pp. 206-327 in: P. Friederici (ed.). *Ecological Restoration of Southwestern Ponderosa Pine* (footnote continued on next page)

CDFW recommended in its Scoping Comments that the DEIR “evaluate impacts to native tree species with a diameter at breast height (DBH) of greater than 4 inches.”⁴⁷² In addition, CDFW recommends that “if native trees are required to be removed, the DEIR should include a mitigation plan with a mitigation ratio and a specific proposal for tree replacement.”⁴⁷³ This DEIR did neither, instead improperly deferring any analysis to future theoretical assessments.

ii. *The DEIR fails to require GSNR to comply with the same requirements as CalFIRE for similar feedstock projects*

The DEIR states that GSNR Only Thinning Projects “shall not involve any activities where forest management does not contribute to the maintenance, conservation or enhancement of biodiversity on landscape, ecosystem, species or genetic levels.”⁴⁷⁴ It is not clear, however, how GSNR intends to ensure that it only carries projects that are good for biodiversity and ecosystems, other than to defer to a single RPF or biologist.

GSNR should be required to comply with Senate Bill 85, passed in the 2019-20 session, which provides that CalFIRE must collaborate with CDFW and the California Water Board “when selecting a fuel reduction project” in order to “ensure the design of the fuel reduction project protects water resources and wildlife habitat while addressing fire behavior and public safety.”⁴⁷⁵ There is no indication in the DEIR that such consultation is required here. It makes no sense that CalFIRE should be required to adhere to stricter requirements to protect biodiversity and ecosystems than GSNR for the same projects. The DEIR should be revised to require GSNR to consult with these three agencies on thinning projects.

iii. *The DEIR fails to adequately analyze and mitigate impacts to sensitive natural communities, including oak woodlands and riparian habitats, due to feedstock projects*

The DEIR also fails to appropriately assess and adequately mitigate the impacts of treatment activities on sensitive natural communities, including oak woodlands and riparian habitats. California has lost over a million acres of oak woodlands since 1950.⁴⁷⁶ Oak woodlands and other wooded areas, such as pine forests and riparian woodlands, provide

Forests. Island Press; Keyes, C.R. and K.L. O’Hara. 2002. Quantifying stand targets for silvicultural prevention of crown fires. *Western Journal of Applied Forestry* 17: 101-09.

⁴⁷² CDFW, June 29, 2023 Scoping Comments, at p. 3.

⁴⁷³ CDFW, June 29, 2023 Scoping Comments, at p. 3.

⁴⁷⁴ DEIR 2-14.

⁴⁷⁵ Pub. Resources Code, § 4123.

⁴⁷⁶ Bolsinger, Charles L., The hardwoods of California's timberlands, woodlands, and savannas, U.S. Forest Service Pacific Northwest Research Station, Resource Bulletin PNW-RB-148 (1988).

valuable habitat and connectivity for a wide variety of species.⁴⁷⁷ They also play a critical role in maintaining important water resources (*i.e.*, for drinking water and agriculture). Reduced forest and woodland cover has been shown to result in increased runoff (*i.e.*, pollutants such as pesticides and fertilizers flowing into groundwater and surface waterways), erosion, sedimentation, and water temperatures; changes in channel morphology; decreased soil retention and fertility; and decreased terrestrial and aquatic biodiversity.⁴⁷⁸ In addition, forests and woodlands are important carbon sinks that can help moderate the impacts of climate change,⁴⁷⁹ and some researchers argue that at a global scale, trees are linked to increased precipitation and water availability.⁴⁸⁰

⁴⁷⁷ Bernhardt, Elizabeth & Tedmund Swiecki, Ecological importance of California oak woodlands, in *Restoring Oak Woodlands in California: Theory and Practice* (2001), <http://phytosphere.com/restoringoakwoodlands/oakrestoration.htm>; Jedlicka, Julie A. et al., Vineyard and riparian habitat, not nest box presence, alter avian community composition, 126 *The Wilson Journal of Ornithology* 1:60 (2014); Lawrence, Justin E. et al., Effects of vineyard coverage and extent on benthic macroinvertebrates in streams of Northern California, 47 *Ann. Limnol. - Int. J. Lim.* 347 (2011); Napa County, Biological Resources, Ch. 4 in *Napa County Baseline Data Report Version 1* (November 30, 2005); Tietje, William D. et al., Bat activity at remnant oak trees in California central coast vineyards, USDA Forest Service General Technical Report PSW-GTR-251 (2015).

⁴⁷⁸ Brown, George W. & James T. Krygier, Effects of clear-cutting on stream temperature, 6 *Water Resources Research* 4 (1970); Pess, George R. et al., Landscape characteristics, land use, and coho salmon (*Onchorhynchus kisutch*) abundance, Snohomish River, Wash., U.S.A., 59 *Can. J. fish. Aquat. Sci.* 613 (2002); Dahlgren, Randy A. et al., Blue oak enhance soil quality in California oak woodlands, 57 *California Agriculture* 2 (2003); Houlahan, Jeff E. & C. Scott Findlay, Estimating the 'critical' distance at which adjacent land-use degrades wetland water and sediment quality, 19 *Landscape Ecology* 677 (2004); Opperman, Jeffrey J. et al., Influence of land use on fine sediment in salmonid spawning gravels within the Russian River Basin, California, 62 *Can. J. Fish. Aquat. Sci.* 2740 (2005); Lohse, Kathleen A. et al., Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning, 18 *Ecological Applications* 2: 467 (2008); Elliot, William J., Effects of forest biomass use on watershed processes in the Western United States, 25 *West. J. Appl. For.* 1 (2010); Lawrence, Justin E. et al., Effects of vineyard coverage and extent on benthic macroinvertebrates in streams of Northern California, 47 *Ann. Limnol. - Int. J. Lim.* 347 (2011); Moyle, Peter B. et al., Rapid decline of California's native inland fishes: A status assessment, 144 *Biological Conservation* 2414 (2011); Zhang, H. & K.M. Hiscock, Modelling the effect of forest cover in mitigating nitrate contamination of groundwater: A case study of the Sherwood Sandstone aquifer in the East Midlands, UK, 399 *J. of Hyrdology* 212 (2011); Jedlicka, Julie A. et al., Vineyard and riparian habitat, not nest box presence, alter avian community composition, 126 *The Wilson Journal of Ornithology* 1:60 (2014).

⁴⁷⁹ Padilla, Francisco, M. et al., Land-use changes and carbon sequestration through the twentieth century in a Mediterranean mountain ecosystem: Implications for land management, 91 *J. of Environ. Mgmt.* 2688 (2010); Pan, Yude et al., A large and persistent carbon sink in the world's forests, 333 *Science* 988 (2011).

⁴⁸⁰ Ellison, David et al., On the forest cover-water yield debate: from demand-to-supply-side thinking, 18 *Global Change Biology* 806 (2012).

Similarly, it is estimated that 90-95% of historic riparian habitat in the state has been lost; Southern California and the Central Valley have already lost over 97% and 95% of their historic riparian systems, respectively.⁴⁸¹ Using 2002 land cover data from CalFIRE, the Riparian Habitat Joint Venture estimated that riparian vegetation makes up less than 0.5% of California's total land area at about 360,000 acres.⁴⁸² Yet, these habitats perform a number of biological and physical functions that benefit wildlife, plants, and humans, and loss of what little is left will have severe, harmful impacts on special-status species, overall biodiversity, and ecosystem function.

Riparian habitats are transitional areas between terrestrial and aquatic habitats, and they support numerous special-status flora and fauna and maintain a high level of biodiversity. In fact, 60% of amphibian species, 16% of reptiles, 34% of birds and 12% of mammals in the Pacific Coast ecoregion depend on riparian-stream systems for survival.⁴⁸³ Many species, including mountain lions and bobcats, often use riparian areas and natural ridgelines as migration corridors or foraging habitat.⁴⁸⁴ Given the potentially threatened status of mountain lions in Southern California and along the Central Coast,⁴⁸⁵ impacts to migration corridors like riparian areas should be more closely considered. Additionally, fish rely on healthy upland areas to influence suitable spawning habitat,⁴⁸⁶ and over-aggressive removal of riparian areas

⁴⁸¹ Bowler, Dr. Peter A., Riparian Woodland: An endangered habitat in Southern California, Proceedings of the 15th Annual Symposium Southern California Botanists, Allan A. Schoenherr, editor, Special Publication No. 3 (1989); Griggs, F. Thomas, Ph.D., California riparian habitat restoration handbook 2d ed., Riparian Habitat Joint Venture (July 2009).

⁴⁸² Ballard, Grant et al., The riparian bird conservation plan: A strategy for reversing the decline of riparian associated birds in California, Riparian Habitat Joint Venture and California Partners in Flight (2004).

⁴⁸³ Kelsey, K.A. & S.D. West, Riparian wildlife, *in* River Ecology and Management, R.J. Naiman and R.E. Bilby, eds. (1998).

⁴⁸⁴ Dickson, Brett et al., Influence of vegetation, topography, and roads on cougar movement in Southern California, 69 J. of Wildlife Mgmt 1: 264 (2005); Hilty, Jodi A. & Adina M. Merenlender, Use of riparian corridors and vineyards by mammalian predators in Northern California, 18 Conservation Biology 1: 126 (2004); Jennings, Megan & Rebecca Lewison, Planning for connectivity under climate change: Using bobcat movement to assess landscape connectivity across San Diego County's open spaces, San Diego State University (2013); Jennings, Megan & Katherine Zeller, Comprehensive multi-species connectivity assessment and planning for the Highway 67 region of San Diego County, California, San Diego State University (2017).

⁴⁸⁵ Yap, Tiffany et al., A petition to list the Southern California / Central Coast evolutionarily significant unit (ESU) of mountain lions as threatened under the California Endangered Species Act (CESA), Center for Biological Diversity and the Mountain Lion Foundation (June 25, 2019).

⁴⁸⁶ Lohse, Kathleen A. et al., Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning, 18 Ecological Applications 2: 467 (2008).

have been identified as a major driver of declines in freshwater and anadromous fish.⁴⁸⁷ Loss of biodiversity due to lack of habitat contributes to ecosystem degradation, which will diminish a multitude of ecosystem functions and services in the long-term.

Reduced forest and woodland cover, including in riparian areas, has been shown to result in increased runoff (*i.e.*, pollutants such as pesticides and fertilizers flowing into groundwater and surface waterways), erosion, sedimentation, and water temperatures; changes in channel morphology; decreased soil retention and fertility; and decreased terrestrial and aquatic biodiversity.⁴⁸⁸ In addition, forests and woodlands are important carbon sinks that can help moderate the impacts of climate change,⁴⁸⁹ and some researchers argue that at a global scale, trees are linked to increased precipitation and water availability.⁴⁹⁰ Thus, to preserve the state's valuable biodiversity in these habitats as well as water quality, it is important to preserve existing riparian areas as well as develop and implement effective buffer widths from streams and wetlands informed by the best available science.

Despite the importance of oak woodlands and riparian habitats in supporting the state's unique biodiversity, maintaining overall ecosystem health and function, and combatting climate change, the DEIR fails to adequately assess and mitigate impacts due to treatment activities. There is no PDF specific to avoiding or minimizing impacts to oak woodlands or riparian habitats. (The closest are PDF-Bio-12 and -13.) As mentioned previously, the DEIR does not require an RPF or biologist to collaborate with CDFW, USFWS, and the California Water Board pursuant to SB 85 (other than to obtain permits under MM-Bio-4). It only requires the RPF or biologist to conduct data reviews and reconnaissance-level surveys prior to

⁴⁸⁷ E.g., Stillwater Sciences and Professor William Dietrich, Napa River Basin limiting factors analysis, Final Technical Report prepared for SFBWQCB and CSCC (2002); Lohse et al. 2008; Moyle et al. 2011

⁴⁸⁸ Brown and Krygier 1970; Pess et al. 2002; Dahlgren et al. 2003; Houlahan and Findlay 2004; Opperman et al. 2005; Lohse, Kathleen A. et al., Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning, 18 Ecological Applications 2: 467 (2008); Elliot, William J., Effects of forest biomass use on watershed processes in the Western United States, 25 West. J. Appl. For. 1 (2010); Lawrence, Justin E. et al., Effects of vineyard coverage and extent on benthic macroinvertebrates in streams of Northern California, 47 Ann. Limnol. - Int. J. Lim. 347 (2011); Moyle, Peter B. et al., Rapid decline of California's native inland fishes: A status assessment, 144 Biological Conservation 2414 (2011); Zhang, H. & K.M. Hiscock, Modelling the effect of forest cover in mitigating nitrate contamination of groundwater: A case study of the Sherwood Sandstone aquifer in the East Midlands, UK, 399 J. of Hyrdology 212 (2011); Jedlicka, Julie A. et al., Vineyard and riparian habitat, not nest box presence, alter avian community composition, 126 The Wilson Journal of Ornithology 1:60 (2014).

⁴⁸⁹ Padilla, Francisco, M. et al., Land-use changes and carbon sequestration through the twentieth century in a Mediterranean mountain ecosystem: Implications for land management, 91 J. of Environ. Mgmt. 2688 (2010); Pan, Yude et al., A large and persistent carbon sink in the world's forests, 333 Science 988 (2011).

⁴⁹⁰ Ellison, David et al., On the forest cover-water yield debate: from demand-to-supply-side thinking, 18 Global Change Biology 806 (2012).

treatment, and if suitable habitat for sensitive natural communities or other sensitive habitat may be present, to perform a protocol-level survey. (DEIR 2-26.) The project proponent should be required to coordinate with CDFW and the Water Board, and they should also be required to consult with other appropriate federal, state, and local agencies, including but not limited to USFWS, NOAA Fisheries, and CNPS, when oak woodlands are present or potentially present in the project area.

In addition, mitigation measures for impacts to oak woodlands and riparian habitat due to treatment activities are vague, inadequate, not based on the best available science, and improperly deferred. In MM BIO-3, the DEIR again fails to require coordination with USFWS, CDFW, NOAA, or other federal, state, or local agencies, to prepare a mitigation plan. It also states that areas temporarily impacted by Project activities “will be restored with appropriate native vegetation,” but then says “[f]easibility of native revegetation is primarily based on suitable soils, slopes, and aspect as well as the presence of similar native vegetation adjacent to the proposed mitigation areas.”⁴⁹¹ Does this mean there are scenarios where native vegetation will not be restored?

Furthermore, enhanced or restored habitats require higher mitigation ratios coupled with extended years of effective monitoring and adaptive management strategies are needed to improve chances of establishing equivalent ecological function as the lost habitat.⁴⁹² The DEIR states that “[p]ropagation and planting will occur at a minimum 1:1 bases to ensure no net loss of the sensitive natural community or oak woodland.” (DEIR, 3.3-120.) Given the importance of oak woodlands and riparian habitats to numerous species and ecosystem function, mitigation ratios should be, at a minimum, 3:1 for preserved oak woodlands and riparian habitats and 5:1 for restored/enhanced oak woodlands and riparian habitats. Santa Barbara County’s Deciduous Oak Tree Protection and Regeneration Ordinance requires a 15:1 mitigation ratio (via replacement planting or protection of naturally occurring oaks between six inches and six feet tall) for removed oak trees.⁴⁹³ With one third of America’s plant and animal species vulnerable to impacts from human activity and one fifth at risk of extinction,⁴⁹⁴ it is crucial that strategies to prevent further degradation and loss of biodiversity are explicit and scientifically sound. The compensatory mitigation described in the MM BIO-3 is vague and severely inadequate. MM BIO-3 states that the project proponent *will prepare* a mitigation plan, which amounts to improperly deferred mitigation. As mentioned previously, mitigation measures for treatment activities must be considered in the DEIR in order for the proper environmental analysis to take

⁴⁹¹ DEIR, 2.2-120.

⁴⁹² Sudol, Mark F. & Richard F. Ambrose, The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA, 30 Environmental Management 5: 727 (2002); Matthew, Jeffrey W. & Anton G. Endress, Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands, 41 Environmental Mgt 130 (2008); Stein, Bruce A. et al., Reversing America's wildlife crisis: Securing the future of our fish and wildlife, National Wildlife Federation (2018).

⁴⁹³ County of Santa Barbara, Deciduous oak tree protection and regeneration, Article IX of Chapter 35 Santa Barbara County Code (June 2003).

⁴⁹⁴ Stein, Bruce A. et al., Reversing America's wildlife crisis: Securing the future of our fish and wildlife, National Wildlife Federation (2018).

place.⁴⁹⁵ Therefore, compensatory habitat mitigation and monitoring plans need to be included in the DEIR to enable the public and decisionmakers to evaluate the effectiveness of the plans in avoiding, minimizing and mitigating the impacts from treatment activities. The DEIR fails to provide specific performance criteria and adequate mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. The mitigation plan should be required to include adaptive management strategies, especially for habitats that are enhanced or restored, as it can take many years before enhanced/restored mitigation sites become as ecologically functional as the lost habitat.⁴⁹⁶ The success of mitigation sites relies on the appropriate assessment of measurable performance standards based on habitat functions and adaptive management strategies.⁴⁹⁷ The DEIR's mitigation measures should implement acquisition in perpetuity, long-term monitoring, and adaptive management strategies to minimize adverse impacts to oak woodlands and associated biological resources. By not readily providing compensatory management plans or a list of adequate, concrete mitigation measures to be considered, the DEIR violates CEQA.

California cannot afford to lose more of its valuable oak woodlands or riparian habitat. Removing or degrading important habitats like these without applying the best available science to minimize adverse impacts will lead to more erosion, sedimentation, reduced water quality, and degraded habitats while ramping up climate change by releasing more carbon into the atmosphere. The DEIR's finding that significant impacts to oak woodlands, riparian habitats, and other sensitive communities will be mitigated to less than significant is not supported by substantial evidence, relies on deferred, vague mitigation measures, and fails to meet CEQA's requirements.

iv. The DEIR fails to adequately analyze and mitigate impacts to wetlands from feedstock projects

Similarly, the DEIR fails to appropriately assess and adequately mitigate impacts to wetlands and any special-status animals and plants in and adjacent to wetlands from feedstock acquisition activities. According to the DEIR, hundreds of thousands of acres of wetlands are located within the Working Area.⁴⁹⁸ This calculation does not account for wetlands that may

⁴⁹⁵ See *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1396 (it is improper for the EIR to require the “applicant to comply with any recommendations of a report that had yet to be performed”); *Sundstrom v. Co. of Mendocino* (1988) 202 Cal.App.3d 296.

⁴⁹⁶ Sudol, Mark F. & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA*, 30 *Environmental Management* 5: 727 (2002); Ambrose, Richard et al., *An evaluation of compensatory mitigation projects permitted under Clean Water Act Section 401 by the California State Water Quality Control Board, 1991-2002*, Report prepared by California State Water Resources Control Board (2006); Bronner, Colleen E. et al., *An assessment of U.S. stream compensatory mitigation policy: Necessary changes to protect ecosystem functions and services*, 49 *J. of the American Water Resources Assoc.* 2 (2013).

⁴⁹⁷ Matthew, Jeffrey W. & Anton G. Endress, *Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands*, 41 *Environmental Mgt* 130 (2008).

⁴⁹⁸ DEIR Appen. C1, Table 1.

only be identified with site-specific analyses or on the ground surveys. Therefore, this calculation is a bare minimum, and the acreage of wetlands could be much greater.

The minimum wetland buffer of 25 feet provided in PDF-Bio-13 is severely inadequate to preserve the ecological function and biodiversity of wetlands and fails to consider the best available science. The DEIR states that the buffer will be larger than 25 feet “if necessary”⁴⁹⁹ but does not adequately define under what circumstances larger buffers would be “necessary,” nor does it explain how the type of wetland, timing of treatment, and whether any special-status species may occupy the wetland, would impact buffer size and shape. The DEIR fails to provide specifics and lacks the best available science to support the assertion that impacts to wetlands, special-status species that use the wetlands as habitat, and water resources would be less than significant.

A literature review found that recommended buffers for wildlife often far exceeded 100 meters (~325 feet), well beyond the largest buffers implemented in practice.⁵⁰⁰ For example, Kilgo et al. recommend more than 1,600 feet of riparian buffer to sustain bird diversity.⁵⁰¹ In addition, amphibians, which are considered environmental health indicators, have been found to migrate long distances between aquatic and terrestrial habitats through multiple life stages.⁵⁰² For example, it has been estimated that the federally and state threatened California tiger salamander (*Ambystoma californiense*) can travel over 500 feet from wetland breeding sites.⁵⁰³ Other sensitive species, such as western pond turtles (*Actinemys marmorata*, a candidate species under the Endangered Species Act) and California newts (*Taricha torosa*), have been found to migrate over 1,300 feet and 10,000 feet respectively from breeding ponds and streams.⁵⁰⁴

⁴⁹⁹ DEIR 2-27.

⁵⁰⁰ Robins, James D., Memo to Charles Wilson, Director, Napa Co Conservation Development & Planning Department re: Stream Setback Technical Memo (October 18, 2002).

⁵⁰¹ Kilgo, John C. et al., Effect of stand width and adjacent habitat on breeding bird communities in bottomland hardwoods, 62 J. of Wildlife Management 1:72 (1998).

⁵⁰² Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 Conservation Biology 5 (2003); Trenham, Peter C. & H. Bradley Shaffer, Amphibian upland habitat use and its consequences for population viability, 15 Ecological Applications 4: 1158 (2005); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 Biological Conservation 231 (2006); Fellers, Gary M. & Patrick M. Kleeman, California Red-Legged Frog (*Rana draytonii*) movement and habitat use: Implications for conservation, 41 J. of Herpetology 2: 276 (2007).

⁵⁰³ Trenham, Peter C., Terrestrial habitat use by adult California tiger salamanders, 35 J. of Herpetology 2: 343 (2001).

⁵⁰⁴ Trenham, Peter C., Demography, migration, and metapopulation structure of pond breeding salamanders, Ph.D. Dissertation, University of California Davis (1998); Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 Conservation Biology 5 (2003).

Accommodating the more long-range dispersers is vital for continued survival of species populations and/or recolonization following a local extinction.⁵⁰⁵ In addition, more extensive buffers provide resiliency in the face of climate change-driven alterations to these habitats, which will cause shifts in species ranges and distributions.⁵⁰⁶ This emphasizes the need for sizeable upland buffers around streams and wetlands, as well as connectivity corridors between heterogeneous habitats.

With climate change affecting California's water supply, there is renewed interest in protecting and maximizing the state's water supplies. Larger buffer zones along jurisdictional streams and wetlands would provide more stream bank stabilization, water quality protection, groundwater recharge, and flood control both locally and throughout the watershed.⁵⁰⁷ They would also protect communities from impacts due to climate change by buffering them from storms, minimizing impacts of floods, and providing water storage during drought.⁵⁰⁸ Thus, the DEIR should implement larger setbacks from jurisdictional streams and wetlands based on the best available science, especially if these habitats are located within designated critical habitat, support or have the potential to support special-status and/or sensitive species, or if they provide important habitat connectivity or linkages.

MM BIO-4 is further insufficient because it is vague and does not require consultation with USFWS, USACE, CDFW, or other appropriate federal, state, or local agencies to delineate wetland boundaries, determine the potential presence of special status species, or identify avoidance and mitigation measures to minimize impacts due to treatment activities. It simply states that GSNR will comply with existing law by coordinating with appropriate agencies to obtain the legally required permits. That is not mitigation; that is simply following

⁵⁰⁵ Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 Conservation Biology 5 (2003); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 Biological Conservation 231 (2006).

⁵⁰⁶ Cushman, Samuel A. et al., Biological corridors and connectivity, in Key Topics in Conservation Biology 2, First ed. (David W. Macdonald & Katherine J. Willis eds. 2013); Heller, Nicole E. & Erika S. Zavaleta, Biodiversity management in the face of climate change: A review of 22 years of recommendations, 142 Biological Conservation 14 (2009); Warren, Rachel et al., Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise, 106 Climatic Change 141 (2011), DOI 10.1007/s10584-010-9923-5.

⁵⁰⁷ Nieswand, George H. et al., Buffer strips to protect water supply reservoirs: A model and recommendations, 26 Water Resources Bulletin 6 (1990); Norris, Vol, The use of buffer zones to protect water quality: A review, 7 Water Resources Management 257 (1993); Whipple Jr., William, Buffer zones around water-supply reservoirs, 119 J. Water Resour. Plann. Manage. 4:495 (1993); Sabater, Francesc et al., Effects of riparian vegetation removal on nutrient retention in a Mediterranean stream, 19 J.N. Am. Benthos. Soc. 4:609 (2000); Lovell, Sarah Taylor & William C. Sullivan, Environmental benefits of conservation buffers in the United States: Evidence, promise, and open questions, 112 Agriculture, Ecosystems and Environment 249 (2006).

⁵⁰⁸ Environmental Law Institute, Planner's guide to wetland buffers for local governments (2008).

the law.⁵⁰⁹ Furthermore, as with oak woodlands and other riparian areas, given the ecological importance of wetlands, final mitigation ratios and credits should be higher than 1:1; ⁵¹⁰they should be at a least 3:1 for preserved wetlands and 5:1 for restored/enhanced wetlands.

As with oak woodlands and riparian habitats, a mitigation plan should also be prepared now and included in the DEIR instead of improperly deferring the preparation until “applicant-sponsored mitigation [is] implemented”⁵¹¹ in order to enable the public and decisionmakers to evaluate the effectiveness of the plan in avoiding, minimizing and mitigating the impacts from treatment activities. As with oak woodlands and other riparian habitats, the DEIR fails to provide specific performance criteria and adequate mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. The mitigation plan should be required to include adaptive management strategies, especially for habitats that are enhanced or restored, as it can take many years before enhanced/restored mitigation sites become as ecologically functional as the lost habitat.⁵¹² The success of mitigation sites relies on the appropriate assessment of measurable performance standards based on habitat functions and adaptive management strategies.⁵¹³ The DEIR’s mitigation measures should implement acquisition in perpetuity, long-term monitoring, and adaptive management strategies to minimize adverse impacts to oak woodlands and associated biological resources. By not readily providing compensatory management plans or a list of adequate, concrete mitigation measures to be considered, the DEIR violates CEQA.

v. *The DEIR fails to adequately analyze and mitigate impacts to habitat connectivity and wildlife corridors from feedstock projects*

The CEQA Guidelines identify wildlife corridors as a category of impact related to biological resources.⁵¹⁴ The DEIR estimates that there are 70 designated wildlife movement corridors (natural landscape blocks) partially located with forested land where feedstock activities could occur.⁵¹⁵ The DEIR fails, however, to adequately assess potential impacts to

⁵⁰⁹ DEIR 3.3-121.

⁵¹⁰ DEIR 3.3-121.

⁵¹¹ DEIR 3.3-121.

⁵¹² Sudol, Mark F. & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA*, 30 *Environmental Management* 5: 727 (2002); Ambrose, Richard et al., *An evaluation of compensatory mitigation projects permitted under Clean Water Act Section 401 by the California State Water Quality Control Board, 1991-2002*, Report prepared by California State Water Resources Control Board (2006); Bronner, Colleen E. et al., *An assessment of U.S. stream compensatory mitigation policy: Necessary changes to protect ecosystem functions and services*, 49 *J. of the American Water Resources Assoc.* 2 (2013).

⁵¹³ Matthew, Jeffrey W. & Anton G. Endress, *Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands*, 41 *Environmental Mgt* 130 (2008).

⁵¹⁴ Appendix G of CEQA Guidelines at (IV)(d).

⁵¹⁵ DEIR 3.3-17.

habitat connectivity and wildlife movement and include measures to minimize impacts at the local and regional scale.

Habitat connectivity is vital for wildlife movement and biodiversity conservation.⁵¹⁶ Blockages to movement and dispersal can negatively affect animals' behavior, movement patterns, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, and landscapes.⁵¹⁷ Individuals can die off, populations can become isolated, sensitive species can become locally extinct, and important ecological processes like plant pollination and nutrient cycling can be lost. In addition, connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range shifts and species migrations as climate changes.⁵¹⁸ Loss of wildlife connectivity decreases biodiversity and degrades ecosystems. Local connectivity that links aquatic and terrestrial habitats is important to allow various sensitive species to persist.⁵¹⁹ Wildlife corridors are linear features that connect natural open space and provide avenues for the migration and movement of animals.⁵²⁰ In the Working Area, these corridors are particularly important for species such as mountain lions (*Puma concolor*).⁵²¹

⁵¹⁶ CADFW, "Science: Habitat Connectivity," <https://wildlife.ca.gov/Science-Institute/Habitat-Connectivity> ("A functional network of connected habitats is essential to the continued existence of California's diverse species and natural communities").

⁵¹⁷ Ceia-Hasse, Ana et al., Population persistence in landscapes fragmented by roads: Disentangling isolation, mortality, and the effect of dispersal, 375 Ecological Modelling 45 (2018); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 Biological Conservation 231 (2006); Haddad, Nick M. et al., Habitat fragmentation and its lasting impact on Earth's ecosystems, Sci. Adv. 1:31500052 (March 20, 2015); Trombulak, Stephen C. & Christopher A. Frissell, Review of ecological effects of roads on terrestrial and aquatic communities, 14 Conservation Biology 1:18 (2000); van der Ree, Rodney et al., Effects of roads and traffic on wildlife populations and landscape function: Road ecology is moving toward larger scales, 16 Ecology and Society 1:48 (2011), <http://www.ecologyandsociety.org/vol16/iss1/art48/>.

⁵¹⁸ Heller, Nicole E. & Erika S. Zavaleta, Biodiversity management in the face of climate change: A review of 22 years of recommendations (142 Biological Conservation 14 (2009); Cushman, Samuel A. et al., Biological corridors and connectivity, in Key Topics in Conservation Biology 2, First ed. (David W. Macdonald & Katherine J. Willis eds. 2013); Krosby, Meade et al., Identifying riparian climate corridors to inform climate adaptation planning, 13 PLoS ONE 11:e205156 (2018), <https://doi.org/10.1371/journal.pone.0205156>.

⁵¹⁹ Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 Conservation Biology 5 (2003); Trenham, Peter C. & H. Bradley Shaffer, Amphibian upland habitat use and its consequences for population viability, 15 Ecological Applications 4: 1158 (2005); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 Biological Conservation 231 (2006);

⁵²⁰ DEIR 3.3-17.

⁵²¹ See DEIR Appen. C1 at C1-66.

The DEIR addresses impacts of forest thinning projects to “wildlife movement” only in the broadest of terms, owing to the DEIR’s general deficiency (as noted throughout this section) of failing to analyze any specific thinning project. Noting that thinning projects “would range in location and size (10 to 2,000 acres) such that each work site would vary” in its impacts to wildlife movement is simply not enough to inform the public or mitigation measures.⁵²² Similarly, the DEIR’s vague claim that “wildlife species with extensive home ranges . . . would be less susceptible to impact compared to species with much smaller ranges”⁵²³ is so broad and unsupported as to be meaningless. If GSFA proceeds with the premise that specific thinning projects will be reviewed to determine whether their impacts are covered in the scope of this EIR (see *supra*, section III), clearly wildlife connectivity issues are not covered and warrant further environmental review.

CDFW has expertise in California wildlife connectivity, and the DEIR should incorporate their data and comments into analysis of how forest thinning projects impact this issue. For example, CDFW issued guidance to analyze connectivity based on “landscape blocks,” which is a scale the DEIR does not offer.⁵²⁴ As of July 2019, CDFW had developed regional, species-specific linkage models for approximately 60% of the state.⁵²⁵ The DEIR must not ignore these resources in analyzing the impacts to habitat connectivity.⁵²⁶

The DEIR also claims that because “stream crossing construction and use[] would be localized and temporary” and not involve “any major barrier,” wildlife movement is unlikely to be impeded.⁵²⁷ This claim is contradicted not only by evidence cited earlier in this comment section, but also the DEIR itself.⁵²⁸ Wildlife movement and habitat connectivity is important not just to large animals but also smaller species, such as reptiles and invertebrates. The DEIR must take this into account when considering the impacts of thinning projects on waterways and aquatic habitat. At present it is not possible for the public to discern what those impacts

⁵²² DEIR 3.3-103; see also *id.* 3.3-103, 104 (“Whereas large treatment sites in remote areas may support movements of wildlife species that are sensitive to disturbance.”).

⁵²³ DEIR 3.3-104.

⁵²⁴ CDFW, Guidance Document for Fine-Scale Wildlife Connectivity Analysis (Dec. 2014), <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=93018&inline> at 4.

⁵²⁵ CDFW, “Science: Habitat Connectivity,” <https://wildlife.ca.gov/Science-Institute/Habitat-Connectivity> (noting that CDFW compiled regional linkage models together with the CEHC linkages and other state-of-the-art connectivity models published in recent years, resulting in a Statewide Terrestrial Connectivity Map available through the CDFW Areas of Conservation Emphasis (ACE) project. The map can be used to distinguish the connectivity attributes that have been identified in each area across multiple studies.).

⁵²⁶ See also CDFW, “Science: Habitat Connectivity,” <https://wildlife.ca.gov/Science-Institute/Habitat-Connectivity> (“Connectivity data developed by CDFW and partners are available in the Habitat Connectivity Viewer which is a part of the CDFW Biogeographic Information and Observation System (BIOS). Maps can be viewed in the online BIOS map viewer, and the GIS datasets can be downloaded.”).

⁵²⁷ DEIR 3.3-104.

⁵²⁸ DEIR 3.3-104 (noting that smaller mammals, invertebrates, and amphibians would be more susceptible to impacts to movement).

might be because the DEIR does not detail specific possible thinning projects, nor does it provide adequate maps and resources to understand riparian habitats, their species, and the important connections between those habitats. There is also no evidence in the DEIR that “localized and temporary” infrastructure or disruptions to streams and waterways isn’t harmful to wildlife movement. For example, anadromous fish, such as salmon, steelhead, and trout, require unimpeded movement to pass to the ocean for their adult years, and in order to reach upstream for egg laying.⁵²⁹ Since thinning projects may last “months,” the timing of thinning projects and impacts to anadromous fish must be considered. At the very least, the DEIR’s claim that “[s]tream crossings would be designed to not impede fish or other aquatic species passage”⁵³⁰ must be explained, and instituted as an enforceable mitigation measure.

It is also irrational for the DEIR to ignore that “barriers” to habitat connectivity are not limited to actual physical barriers; habitat destruction (such as logging and thinning) also hinders connected habitat. The DEIR’s statement that “[m]igratory nocturnal wildlife would be less susceptible to impacts as treatment activities would not create any temporary barriers outside of working hours”⁵³¹ ignores this fact. The DEIR’s conclusion that “treatment activities would not create a significant impediment to wildlife movement”⁵³² is therefore unsupported and arbitrary.

C. Greenhouse gas emissions

Wood pellet energy is notoriously polluting, producing substantial climate-heating greenhouse gas (GHG) emissions across its lifecycle, worsening the climate crisis.⁵³³ This Project will release polluting GHG emissions at every stage, beginning with road building, intensive forest cutting and tree removal at a massive scale, trucking cut trees long distances in hundreds of daily trips, chipping and drying wood, producing pellets, transporting pellets by rail hundreds of miles to ports, then shipping pellets thousands of miles overseas to Asia and Europe to be burned in coal-fired power plants to make dirty electricity.

The DEIR ultimately comes to the correct conclusion that the GHGs that will be emitted by the Project are “significant” and would conflict with California’s climate targets set

⁵²⁹ CDFW, “Science: Habitat Connectivity: Aquatic Connectivity & Fish Passage,” <https://wildlife.ca.gov/Science-Institute/Habitat-Connectivity>) (“Delays in downstream migration to the ocean can prevent fish from entering the ocean during optimal conditions, causing further stress to populations. Meanwhile, delays in upstream migration can hinder fish from reaching their spawning grounds in time and lead to spawning in less desirable habitat or no spawning at all. These obstacles have negatively impacted populations of anadromous fish and are a major factor in their decline, representing a continued threat to their survival.”).

⁵³⁰ DEIR 3.3-104.

⁵³¹ DEIR 3.3-104.

⁵³² DEIR 3.3-104.

⁵³³ Sterman, John et al., Does replacing coal with wood lower CO2 emissions? Dynamic lifecycle analysis of wood bioenergy, 13 Env’t Rsch. Letters 015007 (2018); Sterman, John et al., Does wood bioenergy help or harm the climate?, 78 Bulletin of the Atomic Scientists 128 (2022).

forth in the state Scoping Plan. However, the DEIR's GHG impact analysis is deeply flawed and insufficient on several grounds.

First, the GHG estimates provided in the impact analysis are riddled with major errors and omissions that result in significant under-estimates of the Project's emissions. Once the DEIR corrects these flaws, it is clear that the Project's GHG emissions will be even larger, more significant, and more damaging than the DEIR currently admits.

Second, the DEIR fails to clearly and intelligibly disclose even the most fundamental fact: whether the agency thinks the Project will harm or benefit the climate. Instead, the DEIR throws a plethora of numbers and analytical approaches at the reader and then makes contradictory claims, stating on the one hand "that the project would result in forest carbon benefits" while on the other that the Project will generate "substantial GHG emissions and initial loss of sequestered carbon."⁵³⁴ The DEIR then comes to the conclusion that the GHG impact is "potentially significant" because of "potential uncertainties," and ultimately that it is "significant and unavoidable."⁵³⁵

This equivocation is patently insufficient. There are scientifically vetted and validated tools for estimating GHG emissions across the lifecycle of wood pellet projects that would allow the DEIR to make reasonable estimates of the Project's GHG emissions impact. The DEIR can correct and use many of the analytical approaches currently employed in its *Impact Analysis* and add in additional analyses based on a lifecycle analysis (LCA) framework to fully and transparently account for and disclose biogenic and fossil fuel GHG emissions across the Project lifecycle with reasonable certainty.

1. The environmental setting should provide a description of the GHG emissions from existing forest management operations

The DEIR's environmental setting description does not provide an evaluation of GHG emissions from existing forest management operations in the Project area as a baseline for its GHG analysis. The DEIR does not provide an understandable explanation of why it failed to describe the baseline setting for forest management.⁵³⁶ However, the DEIR elsewhere provides estimates of acreage of federal and state forest management programs in California summarized in Table 3.1, which indicates 165,400 acres were treated in 2018 across different management types. Commercial timber harvest on public and private lands was the largest management category at 65,500 acres and prescribed burning the second largest at 59,850 acres.⁵³⁷ Therefore, this Project's intensive thinning of an *additional* 85,779 acres per year from GSNR Biomass Thinning Only projects, in addition to the collection of harvest residues from another ~105,000 acres per year, represents an enormous increase in tree cutting, forest biomass removal, and associated emissions.

⁵³⁴ DEIR 3.7-60.

⁵³⁵ DEIR 3.7-60.

⁵³⁶ DEIR 3.7-1.

⁵³⁷ DEIR Table 3.1.

2. The DEIR makes major errors in its evaluation of the GHG emissions that will come from the Project, resulting in substantial under-estimates of the Project's GHG emissions

The DEIR must correct its erroneous and incomplete estimate of the GHG emissions associated with the Project. The DEIR's impact analysis states that it evaluates the GHG emissions associated with each of three primary phases of the project: feedstock acquisition, wood pellet production, and transport to market. The DEIR concludes that total annual GHG emissions from the Project will be 95,445 MT CO₂e per year:

Overall, estimated GHG emissions associated with the project are associated with various emission sources including amortized construction emissions, stationary sources, energy sources (electricity), mobile (passenger rail), ship transport (marine vessels), water and wastewater, solid waste, refrigerants, and off-road equipment usage. In total, annual GHG emissions across the state is anticipated to be approximately 95,445 MT CO₂e per year.⁵³⁸

However, this estimate omits significant GHG emissions sources across all stages of the Project, reflects major calculation errors, and is a substantial under-estimate of Project GHGs emissions, as detailed below.

Most problematically, while the DEIR quantifies and then omits the GHG emissions that will result from the Project's intensive tree removal to produce the pellets (the "total removed biomass"), it then omits this figure from the final tally of GHG emissions. This is by far the largest source of GHG emissions from the Project and these emissions are certain. The DEIR estimates that the GHG emissions from the "removed biomass" at 3.4 million metric tons CO₂e per year (and 68 million metric tons over a 20-year Project lifespan)⁵³⁹ which is 36 times larger than the 95,445 metric tons CO₂e per year estimated for other parts of the project. The DEIR must include its own calculation of "total removed biomass" into its GHG emissions estimate for the Project, as well as a corrected estimate for forest carbon change as a whole.

a. The DEIR's feedstock acquisition GHG estimates are unclear, are based on unfounded assumptions, and omit important emissions sources, resulting in significant under-estimates.

The DEIR's estimates for GHG emissions for feedstock acquisition include emissions from harvest operations and transport but fail to include the largest source of emissions from tree removal ("total removed biomass").⁵⁴⁰ The issues related to forest carbon change are discussed in detail in section VII.C.2.d below.

Regarding GHG emissions from harvest operations and transport emissions, the DEIR fails to show how these emissions summarized in Tables 3.7-5 and 3.7-6 are calculated.

⁵³⁸ DEIR 3.7-53.

⁵³⁹ DEIR Table 3.7-15.

⁵⁴⁰ DEIR 3.7-45.

Although the DEIR refers to the AQ analyses in Section 3.2.4.1.1, Table 3.2-8, Table 3.2-9, and Appendix B1, it remains unclear how harvest operation and transport emissions are calculated.

As discussed in depth for the air quality analysis, the DEIR uses an unsupported 50 mile one-way distance to evaluate emissions from the diesel trucks that haul feedstock to the pellet mills. There is no basis for this figure in the record. This error yields truck GHG emissions numbers that are one-third to one-half of what they would be in reality.

The DEIR also leaves out several important emissions sources. Notably, the DEIR does not appear to factor in GHG emissions from the road construction that will occur to access GSNR Biomass Only Thinning project sites, which include construction of up to one mile of unpaved roads up to 14 feet wide per site.⁵⁴¹ Such road construction represents relatively permanent land-use change and as such, should be counted as representing the destruction of all aboveground and belowground carbon stocks in the areas affected, with limited possibility of forest regrowth. The DEIR also does not appear to factor in all GHG emissions related to “Reforestation Site Preparation” where thinning would typically be followed by chemical and fertilizer applications and replanting.⁵⁴²

b. The DEIR’s wood pellet production GHG estimates are unclear and omit important emissions sources, resulting in significant under-estimates

The DEIR’s estimates for GHG emissions from wood pellet production are unclear and omit substantial methane emissions that will come from the Project’s massive wood chip piles and wood pellet piles. Methane can develop under anaerobic conditions in wood chip piles and pellet stockpiles. These emissions should be evaluated as part of the potential GHG emissions associated with this Project. Notably, the DEIR dismisses methane emissions from pellet storage piles by claiming that pellets will be low moisture and not stored very long (DEIR 3.7-48, 3.7-50). However, studies suggest finished wood pellets can be important sources of methane even at relatively low moisture contents. One lab study that assessed methane accumulation from wood pellets in sealed containers found methane could accumulate very rapidly as temperatures increased, and concluded that chemical decomposition, not biological process, is the dominant mechanism for off-gassing of methane.⁵⁴³ Data that study compiled on the concentration of methane in sealed ship holds transporting pellets indicates concentrations ranged from 80-956 ppm, well above safety threshold values. Another study examining CO₂, CO, and CH₄ (methane) accumulation from pellets found that the highest accumulation occurred at 9% moisture content rather than higher or lower moisture contents.⁵⁴⁴ This is close to the moisture content of the finished pellets (7%), according to the DEIR.

⁵⁴¹ DEIR 3.3-60.

⁵⁴² DEIR 2-5, 2-10.

⁵⁴³ Kuang, X. et al., Characterization and Kinetics Study of Off-Gas Emissions from Stored Wood Pellets, 52 *Annals of Occupational Hygiene* 675 (2008).

⁵⁴⁴ Yazdanpanah, F. et al., Measurement of Off-Gases in Wood Pellet Storage. In X. Guo (Ed.), *Advances in Gas Chromatography* (pp. Ch. 08). Rijeka: InTech (2014), <https://www.intechopen.com/chapters/46210>

Most importantly, despite acknowledging that methane emissions from finished pellets could be a consideration under some circumstances (“[h]igher temperatures, longer storage periods, and higher moisture contents would result in more degradation and methane released” from finished pellets: DEIR 3.7-48), and that methane emissions may occur when “wood waste is routed to the State’s landfills” (DEIR 4.0-8), the DEIR ignores altogether the substantial methane emissions that are likely to be produced by higher-moisture wood chip piles.⁵⁴⁵ Research indicates that methane emissions from wood chip piles at biomass facilities can be large enough to significantly add to the overall GHG impact of bioenergy production. For example, Whittaker et al (2016) state that a review of other studies found dry matter losses of over 20% in chip piles after just three months of storage, which itself affects GHG balance of the lifecycle chain, even if only a small fraction of this carbon loss is evolved as methane.⁵⁴⁶ Their lifecycle analysis concluded that if just 1% of the carbon within a wood chip pile undergoes anaerobic decomposition leading to methane evolution, calculated GHG emissions for the final product are tripled. Wihersaari (2005) reported that wood chip piles can cause “remarkable” methane emissions as well as nitrous oxide (N₂O) emissions, that “greenhouse gas emissions from storage [in wood chip piles] can, in some cases, be much greater than emissions from the rest of the biofuel production and transportation chain,” and thus that forest residue should be used “without delay, if possible within 1 week.”⁵⁴⁷ As the wood chip piles at the two facilities would be massive, with an 84 foot high pile at the Lassen plant and a 69-foot high pile at the Tuolumne plant,⁵⁴⁸ the potential for methane emissions is substantial. Anaerobiosis can also be linked to spontaneous combustion, as discussed below.

c. The DEIR’s transport to market GHG estimates omit major emissions sources, resulting in significant under-estimates

The DEIR omits several important GHG emissions sources in its transport to market estimate. First, the DEIR fails to disclose and analyze emissions from the “optional” trucking of pellets to Stockton. Second, it is unclear whether the DEIR accounted for emissions when the transport ships are at the dock at Port of Stockton. Third, the DEIR’s estimate for transport to market emissions also omits the substantial GHG emissions from cargo ships outside of

⁵⁴⁵ Mirjam Roder et al., How certain are greenhouse gas reductions from bioenergy? Life cycle assessment and uncertainty analysis of wood pellet to electricity supply chains from forest residue, 79 Biomass and Bioenergy 50 (2015); Whittaker, C. et al., Dry matter losses and methane emissions during wood chip storage: the impacts on full life cycle greenhouse gas savings of short rotation coppice willow for heat, 9 Bioenergy Research 820 (2016); Vantellingen, J. & S.C. Thomas, Log landings are methane emissions hotspots in managed forests, 51 Canadian Journal of Forest Research 1916 (2021); Wihersaari, M., Evaluation of greenhouse gas emission risks from storage of wood residue, 28 Biomass and Bioenergy 444 (2005).

⁵⁴⁶ Whittaker, C. et al., Dry matter losses and methane emissions during wood chip storage: the impacts on full life cycle greenhouse gas savings of short rotation coppice willow for heat, 9 Bioenergy Research 820 (2016).

⁵⁴⁷ Wihersaari, M., Evaluation of greenhouse gas emission risks from storage of wood residue, 28 Biomass and Bioenergy 444 (2005).

⁵⁴⁸ DEIR 3.1-19; DEIR 3.1-20.

California waters.⁵⁴⁹ These shipping emissions total 178,397 MT CO₂e per year as revealed in the DEIR's "Additional GHG Considerations" (DEIR Section 3.7.5) and Appendix B. They are certain and foreseeable and must be included in the GHG impacts analysis.

d. The DEIR must correct its highly flawed calculations for forest carbon change and include GHG emissions from total removed carbon in its estimate of total Project emissions

In its forest carbon change analysis, the DEIR conducts an assessment "to quantify changes in forest carbon and GHG emissions resulting from GSNR's biomass thinning projects" since "[b]y removing forest materials, the project impacts forest carbon and GHG in several ways."⁵⁵⁰ Specifically, the DEIR sets forth a quantitative approach to assesses the emissions from four categories of forest carbon change related to GSNR Biomass Only Thinning projects: total removed biomass, forest carbon sequestration and storage, GHG emissions during wildfire, and tree mortality from wildfire.⁵⁵¹ The DEIR conducts a series of analyses to estimate the emissions from each of these four categories (DEIR 3.7-53 to 59, Appendix B8) and summarizes the results in Table 3.7-19.

As detailed below, the DEIR's calculations have major errors—for example, the calculation of carbon sequestration over 60 years instead of the 20 year lifespan of the project—all of which have the effect of under-estimating the GHG emissions from the Project. Nonetheless, even with these errors, the DEIR's own analysis shows that a no-Project scenario (no thinning) would result in fewer greenhouse gases being emitted than the Project.⁵⁵² Once the errors in the analysis are corrected, the DEIR is likely to conclude that the net GHG impact of the Project is even greater than currently calculated. The DEIR must correct these errors and include its own estimate of "total removed biomass" and a corrected estimate for forest carbon change as a whole into its GHG emissions estimate for the Project.

i. The DEIR fails to include the forest carbon change that would result from the use of Harvest Residuals and therefore significantly underestimates forest carbon loss

GSNR feedstock acquisition is grouped into three sources: Harvest Residuals, GSNR Biomass Only Thinning Projects, and Mill Residuals. DEIR subsections 3.7.4 (Impact Analysis) and 3.7.5 (Additional GHG Considerations) purport to compute forest emissions associated with feedstock acquisition. However, the DEIR evaluates only the forest carbon change resulting from GSNR Biomass Only Thinning Projects, which "would not occur without GSNR's proposed project" (DEIR ES-1). The DEIR estimates large carbon losses from logging and thinning.⁵⁵³ However, the DEIR does not include forest carbon change from

⁵⁴⁹ DEIR Table 3.7-14.

⁵⁵⁰ DEIR 3.7-38.

⁵⁵¹ DEIR 3.7-38.

⁵⁵² DEIR 4.0-14, Table 4-1

⁵⁵³ See, e.g., DEIR Table 3.7-15

Harvest Residuals projects,⁵⁵⁴ which the DEIR states are “timber harvest, vegetation management, and forest management operations undertaken by third-parties unaffiliated with GSNR and which would occur regardless of GSNR’s proposed project.”⁵⁵⁵ This omission is particularly significant because the Project also fails to count the GHG emissions released by the combustion of wood pellets made from Harvest Residuals in power plants abroad.

Though it is not stated explicitly, the DEIR appears to assume that Harvest Residuals feedstock acquisition will have no impact on forest carbon loss because the harvest residuals “would occur regardless of GSNR’s proposed project.”⁵⁵⁶ However, this is not consistent with forest inventory and carbon reporting protocols under which California reports to the U.S. Environmental Protection Agency (EPA) and the EPA reports to the U.N. Framework Convention on Climate Change (UNFCCC). International GHG reporting protocols consider downed wood is counted in forest inventories as representing stored carbon.⁵⁵⁷ Unless all the harvest residuals were slated to be burned in the year that they are generated, there will be a difference in the carbon stored on the landscape between a scenario where residues are left *in situ*, and a scenario where they are collected for pellet feedstock or for fuel to run the dryer at the wood pellet manufacturing plant. That difference represents emissions from this project that would not otherwise have occurred. It should be noted, as well, that another possible outcome for these residues is that they are typically collected as fuel for existing biomass power facilities.

If this Project reduces the amount of fuel available to existing facilities, this may lead to additional harvesting to meet expanded need for feedstock. (See *supra*, section VI.B.) This indirect effect should be modeled and assessed, but in any case, all the various fates for residues have GHG consequences, and all should be factored into the overall GHG accounting. Regarding the potential for the project to drive additional harvesting above and beyond that envisioned as “GSNR Biomass Only Thinning,” research on the wood pellet industry in the US Southeast indicates that the industry’s commodification and commercialization of forest feedstocks to make and sell pellets incentivizes a substantial increase in tree harvesting above what would otherwise occur and has led to a net loss of forested area.⁵⁵⁸ It is important to note that the “harvest residuals” classification includes not only tops and branches, but considerable roundwood as well, meaning additional trees could be felled and counted as “residuals” to meet

⁵⁵⁴ The DEIR similarly fails to include forest carbon change from Mill Residual projects, but this is a less consequential omissions given mill residues will provide an estimated 1% of feedstocks compared with 45% for GSNR Biomass Only Thinning projects.

⁵⁵⁵ DEIR ES-1; DEIR 2-3.

⁵⁵⁶ DEIR 2-3.

⁵⁵⁷ 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 4: Agriculture, Forestry and Other Land Use; Chapter 4, Forest Land. Published: IGES, Japan. https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_04_Ch4_Forest_Land.pdf

⁵⁵⁸ Williams, Christopher A., Forest Clearing Rates in the Sourcing Region for Enviva Pellet Mills in Virginia and North Carolina, U.S.A., Clark University, Worcester, MA (2021); Southern Environmental Law Center, Satellite images show link between wood pellet demand and increased hardwood forest harvesting (2022), <https://www.southernenvironment.org/wp-content/uploads/2022/03/Biomass-White-Page.pdf>

expanding feedstock demand. This evidence indicates that a substantial portion of forest carbon loss resulting from harvest residuals projects will be additional and should be evaluated and counted.

ii. The total removed carbon calculations leave out important emissions sources

The estimated carbon emissions resulting from thinning (“total removed carbon”) by the GSNR Biomass Only Thinning portion of the project are significant: 3.4 million metric tons of CO₂e per year and 68 million metric tons of CO₂e over the 20 years of the project as estimated by the DEIR (DEIR 3.7-53). Notably, the DEIR’s calculations leave out important emissions sources from forest thinning projects: belowground biomass carbon loss and soil carbon loss. These should be estimated and included, as described below.

Belowground biomass carbon loss: Thinning removes most of the aboveground biomass of a tree, but generally leaves the stump and roots in place. This biomass decomposes and emits CO₂ over time, and should be taken into account as a GHG emission from the project, since, as USFS inventory data from California indicate,⁵⁵⁹ belowground biomass (not including stumps) can represent another 20 to 25% of carbon loss on top of aboveground carbon loss from GSNR Biomass Only Thinning projects. The carbon is not emitted instantaneously, but it is emitted fast enough, as materials decompose, to constitute another significant source of GHGs over the 20-year duration of the project.

Soil carbon loss: Logging involves soil disturbance and removal of biomass that can result in loss of soil carbon (from accelerated soil microbial respiration, erosion, or leaching) and a reduction in the influx of new soil carbon (when aboveground biomass inputs to soils are reduced, as when forestry residues are taken offsite). The DEIR states that loss of soil carbon is a possibility: “As stated in Section 3.7.1.4, the specific effects of forest fuels treatments on soil carbon will depend on factors such as treatment intensity, frequency, and site characteristics” (DEIR 3.7-57). Nonetheless, the DEIR concludes that “The project is unlikely to result in substantial changes to soil carbon levels” (DEIR 3.7-57), and the calculations of GHG emissions do not include potential losses of soil carbon.

The DEIR reasons that the Project is unlikely to affect soil carbon because “[s]tandard forest harvests have been found to have little effect on soil organic carbon levels, whereas aggressive harvest methods resulted in carbon losses across all layers of forest soil (Achat et al. 2015). Fuels treatments have been found to have little to no effect on forest soil carbon stocks (Boerner et al. 2008, North et al. 2009, Dore et al. 2016, Stephens et al 2012b). In fact, fuel treatments may reduce future soil carbon losses by preventing soil erosion following high intensity wildfires. Based on research on different fuel treatment methods, it was found that there were no notable disparities in soil carbon levels between thinned and untreated forest stands (Moghaddas and Stephens 2007)” (DEIR 3.7-56).

⁵⁵⁹ Richard Harris, Carbon and California Forests: Forest Inventory and Analysis Results, <https://ucanr.edu/sites/forestry/files/212927.pdf>

Arguably, however, the Project's impacts are most analogous to the “aggressive harvested methods” examined in the Achat et al. (2015) meta-analysis,⁵⁶⁰ which compared conventional harvests with biomass harvests that extracted forestry residues, rather than the papers that simply compared soil carbon in thinned and un-thinned forests. None of the other papers cited (Boerner et al. 2008, North et al. 2009, Dore et al. 2016, Stephens et al 2012b, and Moghaddas and Stephens 2007) examined the specific impacts of intensified harvesting for biomass as the Achat et al review did. Indeed, the Moghaddas and Stephens (2007) paper, which is cited as supporting the conclusion that soil carbon does not differ in thinned and un-thinned stands, involved mastication of vegetation, which according to that paper *adds* a “debris bed” of material to the soil, the opposite of biomass harvesting techniques that specifically remove logging residues and can deplete soil carbon, including important reservoirs of carbon in mineral soil horizons.⁵⁶¹ The Project intends to utilize just these types of residues, if not for pellet feedstock, then for fuelwood for the pellet dryer.

The Achat et al. (2015) review was quite comprehensive and clear in its conclusions, and thus deserves to be quoted at length concerning how biomass harvests can deplete soil carbon:

We quantified the effects on SOC [soil organic carbon] of the three main strategies in terms of carbon management: i) *carbon sequestration in forests*, based on unharvested forests, ii) *conventional harvests* of tree stems, used in most managed forests, and iii) *intensive harvests*, based on the collection of tree stems and logging residues (stumps, branches, foliage, and sometimes forest floor racking) to produce fuelwood. Collection of trees –both in conventional and intensive harvests–can be incomplete or total. Thus, we additionally took into account if conventional, or intensive, harvests were carried out during a thinning (the felling and logging of a proportion of trees to promote the growth of the residual trees) or a clear-cutting (the felling and logging of all trees, followed by seedling planting, sowing, or natural forest regeneration). Because in practice most intensive harvests were done at clear-cutting, we studied possible differences between thinning and clear-cutting for conventional harvests only.

Using a meta-analysis approach, we showed that conventional biomass harvests preserved the SOC of forests, unlike intensive harvests where logging residues were harvested to produce fuelwood. Conventional harvests caused a decrease in carbon storage in the forest floor, but when the whole soil profile was taken into account, we found that this loss in the forest floor was compensated by an accumulation of SOC in deeper soil layers. Conversely, we found that intensive harvests led to SOC losses in all layers of forest soils. We assessed the potential

⁵⁶⁰ Achat, David et al., Forest soil carbon is threatened by intensive biomass harvesting, 5 Scientific Reports 15991 (2015). <https://doi.org/10.1038/srep15991>

⁵⁶¹ Hamburg, S. P., et al. Losses of mineral soil carbon largely offset biomass accumulation 15 years after whole-tree harvest in a northern hardwood forest. Biogeochemistry, 144(1), 1-14. (2019). doi:10.1007/s10533-019-00568-3

impact of intensive harvests on the carbon budget, focusing on managed European forests. Estimated carbon losses from forest soils suggested that intensive biomass harvests could constitute an important source of carbon transfer from forests to the atmosphere (142–497 Tg-C), partly neutralizing the role of a carbon sink played by forest soils.

Other studies not included in the Achat et al. (2015) meta-analysis also point to the potential depletion of soil carbon with logging.⁵⁶²

It is important to note that removal of small-diameter material not only reduces carbon inputs to soils, but can also reduce bio-available nutrients that are essential for forest regeneration, meaning that forest regrowth and associated future carbon storage may be inhibited. Several studies, including another meta-analysis by Achat et al. (2015),⁵⁶³ have pointed out that nutrient loss may impede forest regeneration. Another source of damage can be heavy machinery, which can compact and damage forest soils.⁵⁶⁴ These harms to soils can reduce the capacity of forest ecosystems to sequester and store carbon.⁵⁶⁵ Regarding the particularly important issue of nutrient depletion impacts on forest regeneration, it is worth quoting the second Achat et al. (2015) meta-analysis for its clear explanation:

Our study showed that, compared with conventional stem-only harvest, removing the stem plus the harvesting residues generally increases nutrient outputs thereby leading to reduced amounts of total and available nutrients in soils and soil acidification, particularly when foliage is harvested along with the branches. Losses of available nutrients in soils could also be explained by reduced microbial activity and mineralization fluxes, which in turn, may be affected by changes in organic matter quality and environmental conditions (soil compaction, temperature and moisture). Soil fertility losses were shown to have consequences for the subsequent forest ecosystem: tree growth was reduced by 3–7% in the short or medium term (up to 33 years after harvest) in the most intensive harvests (e.g. when branches are exported with foliage). Combining all the results showed that, overall, whole-tree harvesting has negative impacts on

⁵⁶² Nave, L.E. et al., Harvest impacts on soil carbon storage in temperate forests, 259 *Forest Ecology and Management* 857 (2010); Buchholz, Thomas et al., Mineral soil carbon fluxes in forests and implications for carbon balance assessments, 6 *GCB Bioenergy* 305 (2014).

⁵⁶³ Walmsley, J.D. et al., Whole tree harvesting can reduce second rotation forest productivity, 257 *Forest Ecology and Management* 1104 (2009); Achat, David et al., Quantifying consequences of removing harvesting residues on forest soils and tree growth – A meta-analysis, 348 *Forest Ecology and Management* (2015).

⁵⁶⁴ Elliot, William J. et al., The Effects of Forest Management on Erosion and Soil Productivity, Symposium on Soil Quality and Erosion Interaction, Keystone, CO, July 7, 1996.

⁵⁶⁵ *Id.*; see also Hanson, C.T., and T.Y. Chi, Impacts of postfire management are unjustified in spotted owl habitat, 9 *Frontiers in Ecology and Evolution* Article 596282 (2021) (34% of previously forested areas rendered deforested for decades due to impacts of logging, including logging roads, skid trails, and landings).

soil properties and trees that may have an impact on the functioning of forest ecosystems.

Given that the Project intends to massively increase the amount of forest logged in California each year, it is improper for the analysis to ignore potential effects on soil carbon losses and impaired regeneration. Understanding that it is not possible to precisely quantify these impacts, it is feasible to use estimates available in the scientific literature to develop best-case and worse-case scenarios that “bracket” the potential GHG contribution of soil carbon loss (and, if possible, regeneration impacts) to the overall carbon footprint of the Project.

iii. The forest carbon sequestration calculations have major errors

The DEIR makes the invalid assumption that forests will re-grow after logging/thinning and that the GSFA can claim the future carbon sequestration by forest re-growth to offset the lost carbon storage caused by thinning. However, as explained above in section VI.A, GSFA cannot control or be certain of the future fate of thinned forests since GSFA is not managing these forest areas over time. Future carbon sequestration in thinned forests is highly speculative and should not be included as a carbon benefit from the Project.

Furthermore, even if carbon sequestration were to be included, the DEIR’s calculations of forest carbon sequestration have multiple errors that inflate the estimates of carbon sequestration in “treated” (i.e., thinned) stands. Most problematically, the DEIR calculates the rates of carbon sequestration in thinned and un-thinned stands over a 60- year time period (DEIR 3.7-54), instead of over the 20-year lifespan of the Project. This forest regrowth is considered to “offset” the carbon loss occurring from harvesting, thus reducing the net carbon emissions attributed to the project. The DEIR provides no rational basis for using 60 years rather than 20 years, which is the timeframe used in the DEIR for other carbon calculations. It is critical that the DEIR corrects this error, since carbon sequestration in thinned stands will almost certainly be lower in un-thinned stands over a 20-year timeframe than a 60-year timeframe, based on studies showing reduced carbon sequestration for decades in thinned stands.⁵⁶⁶

The DEIR’s carbon sequestration estimates also appear to assume that forests are thinned once and then not re-entered until regrowth is complete. This modeling approach thus ignores the fact that stands would be likely be thinned multiple times over a 60-year period, given the DEIR’s acknowledgment that the “effective period for fuels reduction” from thinning is only 10 years (DEIR Appendix B8 X-4). The DEIR’s carbon sequestration estimates must incorporate the likelihood of repeated thinning and should calculate net carbon emissions from the project for repeated intervals, ideally over five-year periods, to provide a comprehensive

⁵⁶⁶ Depro, B.M. et al., Public land, timber harvests, and climate mitigation: Quantifying carbon sequestration potential on U.S. public timberlands, 255 *Forest Ecology and Management* 1122 (2008); Mitchell, S.R. et al., Carbon debt and carbon sequestration parity in forest bioenergy production, 4 *Global Change Biology Bioenergy* 818 (2012); Moomaw, William R. et al, Intact forests in the United States: proforestation mitigates climate change and serves the greatest good, 2 *Frontiers in Forests and Global Change*, Article 27 (2019).

overview of the trajectory of net emissions over time, and incorporate the potential for reentry of stands for repeated thinning over periodic intervals.

The modeling also appears to assume that the *entire* project area is treated in the first year of the project (2024) and that forests then initiate regrowth, which is assumed to occur for 60 years over every acre treated. In reality, only a small portion of the project area would be treated in the first year,⁵⁶⁷ and more in the second year, and so forth. The assumption that every acre cut then regrows for 60 years over-inflates the estimates of carbon sequestration in treated stands since in reality post-thinning carbon sequestration will occur for substantially fewer than 60 years across the project area.

iv. The DEIR's description of forest carbon storage following thinning is misleading

According to the DEIR's own analysis comparing the trajectory of carbon storage on treated and un-thinned stands, un-thinned forest stands will store significantly more carbon per acre than treated stands after 60 years across the mixed conifer and ponderosa pine forests that comprise ~94% of the project area, regardless of stand density or whether the stand subsequently experiences fire (DEIR Appendix B8 Table 6), with just two exceptions.⁵⁶⁸ To determine this, we multiplied the Table 6 carbon-per-acre values for 2084 by the total number of acres for each stand-density type, then summed these derived values by treatment type (treated-fire; treated no-fire; untreated-fire; untreated no-fire). We then calculated the difference between the treatments by subtracting the treated values from the untreated values. The results are as follows (rounded):

1. Untreated (with fire) minus Treated (with fire): 53.6 million tonnes (meaning 53.6 million tonnes more carbon is stored in untreated forests than treated forests, even when wildfire affects the entire Project Area)
2. Untreated (no fire) minus Treated (no fire): 54.4 million tonnes
3. Untreated (**with** fire) minus Treated (**no** fire): 52.4 million tonnes

According to the DEIR's numbers, if the entire Project Area were thinned in Year 1, the Project Area would store ~54 million tons less carbon after 60 years than if Project Area was never thinned over those 60 years, even when wildfire occurs across the Project Area. Further, as scenario 3 shows, even if thinning worked to completely stop treated acres from burning, and all untreated acres burned, the Project would *still* result in less carbon stored in forests by 2084 than if forests were left un-thinned. Again, however, it is important to note that since the modeling appears to assume that all acres are treated in Year 1, this approach does not reflect what the modeling would conclude if the treatments were rolled out on a yearly basis as would occur in reality. We simply include these results to demonstrate that even using the DEIR's own numbers, the Project will not deliver a carbon benefit.

⁵⁶⁷ The 85,779 acres that would be treated each year by GSNR Biomass Only Thinning Projects represent only 1.5% of the Project area.

⁵⁶⁸ The DEIR estimates that forest carbon storage will be slightly higher in thinned low and high-density white fir forests (comprising 6% of the Project area) after 60 years compared with un-thinned stands (DEIR Appen. B8 Table 6).

v. *The emissions from wildfire calculations have major errors*

The DEIR's calculations of emissions from wildfire are not adequately explained and appear to incorporate several major errors. First, the DEIR appears to simulate wildfire in 2029 at 5 years after the first treatment year 2024,⁵⁶⁹ rather than using the DEIR's estimated probability that 1.2% of the project area will experience wildfire each year of the 20- year project lifespan.⁵⁷⁰ The DEIR is unclear on how much of the project area is simulated to experience wildfire each year. The DEIR also appears to commit a major error in simulating only high-severity fire when wildfire occurs, when currently only ~35% of California mixed conifer and Ponderosa pine forests burn at high severity during wildfire.⁵⁷¹ This error likely inflates the estimates of PM_{2.5} coming from wildfire, due to differences in flaming versus smoldering combustion, and thus in turn overestimates the CO₂ emissions, as wildfire CO₂ emissions are derived from PM_{2.5} estimates. The DEIR's method of estimating CO₂ and CH₄ wildfire emission using the Fire Order Fire Effects Model (FOFEM) based on the Forest Vegetation Simulator (FVS) *Potential Smoke* outputs and CO₂/PM_{2.5} and CH₄/PM_{2.5} ratios appears to be flawed. Research shows that models such as FOFEM and LANDFIRE substantially over-estimate wildfire emissions by using unrealistic biomass combustion factors and under-representing the biomass stored in standing dead trees after fire.⁵⁷² For example, Stenzel et al. (2019) found that these models overestimate the wildfire emissions from California's forests by *three-to-four times* that of actual field-based values. Stenzel et al. (2019) warned against making land management decisions intended to mitigate climate change based on incorrect over-estimates of wildfire emissions:

Contemporary CO₂ emissions to the atmosphere from fire are often significantly exaggerated because of public and policymaker misconceptions that forests commonly “burn to the ground” during fire and that mortality equals emissions. The reality is instead negligible stem combustion of live, mature trees (i.e., <5%), followed by gradual decomposition over years to centuries. Modeled estimates of fire emissions reinforce public misconceptions, as tree mortality is often mistranslated into 30%–80% of tree carbon emitted immediately and is in conflict with observations. It is important to rectify overestimates because governments are currently using mortality and emissions estimates from fire to inform land management decisions intended to mitigate climate change (California, Executive Department, 2018; ...).⁵⁷³

⁵⁶⁹ DEIR Appen. B8 X-4.

⁵⁷⁰ DEIR 3.7-53.

⁵⁷¹ Williams, J.N. et al., High-severity burned area and proportion exceed historic conditions in Sierra Nevada, California, and adjacent ranges, 14 *Ecosphere* e4397 (2023).

⁵⁷² Stenzel, Jeffrey E. et al., Fixing a snag in carbon emissions estimates from wildfires, 25 *Global Change Biology* 3985 (2019); see also Cruz, M.G, and M.E. Alexander, Assessing crown fire potential in coniferous forests of western North America: A critique of current approaches and recent simulation studies, 19 *Int. J. Wildland Fire* 377 (2010); French, Nancy H.F. et al., Model comparisons for estimating carbon emissions from North American wildland fire, 116 *Journal of Geophysical Research* G00K05 (2011)

⁵⁷³ Stenzel et al. (2019) at 1-2.

Furthermore, numerous studies have demonstrated that broad-scale thinning for wildfire management can lead to more carbon emissions than it prevents from being released in a wildfire, and can result in a net increase of carbon emissions to the atmosphere and net decrease in forest carbon storage.⁵⁷⁴ This is primarily because the carbon loss from forest thinning followed by wildfire is greater than the carbon loss from wildfire in un-thinned stands, when cumulative tree mortality is accounted for. In other words, thinning kills more trees than it prevents from being killed in wildfires. In contrast, wildfire consumes a small percentage of forest carbon while improving availability of key nutrients and stimulating rapid forest regeneration. Research from California shows that even very severe fires combust less than 2% of living tree biomass on average.⁵⁷⁵ The DEIR does not reference or discuss any of this important body of evidence. Given that the main objective of the Project is to reduce wildfire impacts and deliver climate benefits, the failure to include this discussion is a serious omission.

- vi. *The mortality from wildfire calculation should not be included in forest carbon change estimate and has major errors*

First, the carbon changes associated with tree mortality from wildfire should not be included in the forest carbon change estimate because these carbon fluxes are already represented in the DEIR's calculations of carbon sequestration following wildfire and carbon emissions from wildfire. Therefore, including carbon changes due to wildfire mortality would be double-counting.

Further, the DEIR's calculations of tree mortality from wildfire are erroneous, containing major errors that result in substantial over-estimates of tree mortality from wildfire and under-estimates of tree mortality in thinned stands. As with the estimates of wildfire emissions, the DEIR incorrectly simulates wildfire in 2029 at 5 years after the first treatment year 2024 (DEIR Appendix B8 X-4) rather than using the DEIR's estimated probability that 1.2% of the project area will experience wildfire each year of the 20-year project lifespan (DEIR 3.7-53). The DEIR commits a major error in simulating only high-severity fire when wildfire occurs, which doesn't reflect the reality that currently only ~35% of California mixed conifer and Ponderosa pine forests burn at high severity during wildfire.⁵⁷⁶ Because high-severity fire by definition results in high tree mortality (>80% overstory tree mortality),

⁵⁷⁴ Mitchell, S.R. et al., Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems, 19 *Ecological Applications* 643 (2009); Campbell, J.L. et al., Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? 10 *Frontiers in Ecology and Environment* 83 (2012); Bartowitz, Kristina J. et al., Forest carbon emission sources are not equal: putting fire, harvest, and fossil fuel emissions in context, 5 *Frontiers in Forests and Global Change* 867112 (2022), <https://doi.org/10.3389/ffgc.2022.867112>; Law, Beverly E. et al., Creating strategic reserves to protect forest carbon and reduce biodiversity losses in the United States, 11 *Land* 721 (2022), <https://doi.org/10.3390/land11050721>.

⁵⁷⁵ Harmon, M.E. et al., Combustion of aboveground wood from live trees in mega-fires, CA, USA, 13 *Forests* 391 (2022).

⁵⁷⁶ Williams, J.N. et al., High-severity burned area and proportion exceed historic conditions in Sierra Nevada, California, and adjacent ranges, 14 *Ecosphere* e4397 (2023).

simulating only high severity fire acts to vastly inflate the DEIR's estimates of mortality from wildfire.

Further, the DEIR makes a major error in failing to account for *cumulative mortality* from wildfire and thinning in its calculations. The DEIR incorrectly uses the *percent* of total basal area subject to mortality from wildfire to compare treated and untreated stands, instead of the *absolute amount* of total basal area subject to mortality.⁵⁷⁷ Using the percent of total basal area is incorrect because this fails to account for the reduced amount of basal area (due to trees removed by thinning) in thinned stands. In short, wildfire will act on a greater number of trees in un-thinned stands than in thinned stands where many trees have previously been removed. For example, in low-density ponderosa pine forest, the DEIR estimates that thinning treatments would reduce tree carbon by 15.81 tons per acre or 30.3%.⁵⁷⁸ Further, the DEIR estimates that wildfire would subject an estimated 52.25% of the tree basal area to mortality in un-thinned stands, and 32.80% of tree basal area to mortality in thinned stands where there is much lower remaining basal area.⁵⁷⁹ If we use carbon per acre as a proxy for basal area per acre⁵⁸⁰ in this example, then wildfire would subject 27.23 tons of tree carbon to mortality in un-thinned stands while wildfire and thinning would subject 27.72 tons of tree carbon to mortality in thinned stands. This example indicates that there is essentially no difference in mortality (approximated using tree carbon) between thinned and un-thinned stands when cumulative mortality from both wildfire and thinning are properly taken into account. Therefore, the DEIR's conclusions about reduced mortality are not borne out by its own estimates.⁵⁸¹

Moreover, recent studies of cumulative tree mortality from thinning and wildfire in California forests have found that thinning kills more trees than it prevents from being killed in wildfire. Research on the 2021 Antelope Fire and Caldor Fire reported that commercial thinning resulted in higher overall tree mortality levels than in un-thinned areas—meaning that more trees were killed by thinning plus wildfire compared with wildfire alone.⁵⁸²

- vii. *The DEIR must include its own calculation for “total removed biomass” into its GHG emissions estimate for the Project, as well as a corrected estimate for forest carbon change as a whole*

The DEIR's forest carbon change summary erroneously concludes that “[t]he potential exists for long-term, cumulative forest carbon benefits” based on a long series of major errors and omissions (3.6-59). The DEIR must correct its estimate of forest carbon change, as detailed

⁵⁷⁷ DEIR Appen. B8 X-12.

⁵⁷⁸ DEIR Appen. B8 Table 7.

⁵⁷⁹ DEIR Appen. B8 Table 13.

⁵⁸⁰ Basal area per acre is not provided by the DEIR.

⁵⁸¹ DEIR Table 3.7-18.

⁵⁸² Hanson, Chad, Cumulative severity of thinned and unthinned forests in a large California wildfire, 11 Land 373 (2022); Baker, B.C. and C.T. Hanson, Cumulative tree mortality from commercial thinning and a large wildfire in the Sierra Nevada, California, 11 Land 995 (2022).

above, which will show that Project's GHG emissions will be even larger, more significant, and more damaging than the DEIR currently admits.

Critically, the DEIR must account for and include the GHG emissions that will result from the Project's intensive tree removal to produce the pellets, the "total removed biomass." These emissions must be included to be consistent with forest inventory and carbon reporting protocols under which California reports to the U.S. Environmental Protection Agency (EPA) and the EPA reports to the U.N. Framework Convention on Climate Change (UNFCCC). Although actual combustion of the fuel by the end-user will likely occur in Europe or Asia, under the Intergovernmental Panel on Climate Change (IPCC)'s international GHG reporting guidance, the U.S. States where wood harvesting occurs are responsible for all biogenic CO₂ emissions associated with harvesting, manufacturing, and burning wood pellets. While there are inevitably errors in forest inventories that could cause them to either over- or under-represent the changes in forest carbon stocks associated with the Project, in theory at least, forest inventories should reflect not only the loss of forest carbon associated with thinning projects, but also carbon loss from the collection of forestry residues. The state-level inventories feed into the compilation of the national forest inventory, and that in turn is used to develop estimates of land sector carbon flux that feed into the annual GHG report that the EPA submits to the UNFCCC.

Importantly, the DEIR previews the enormity of the Project's GHG emissions when forest carbon change emissions are included in the supplemental Section 3.7.5 Additional GHG Considerations that presents lifecycle GHG analyses for the project. The DEIR provides two "complete conventional lifecycle calculations" of the GHG emissions from the GSNR Biomass Only Thinning portion of the Project, although the DEIR dismisses these estimates stating that these are for "disclosure" purposes.⁵⁸³ In the DEIR's first analysis, the GHG emissions from the initial carbon loss from cutting trees for pellets ("total removed biomass") are included. Using this approach, the DEIR estimates that just the GSNR Biomass Only Thinning portion of the Project would result in a net increase in GHG emissions of 3,181,586 metric tons CO₂e per year during the 20 year lifespan of the project.⁵⁸⁴ In the DEIR's second analysis, combustion emissions from burning the pellets are counted instead of initial carbon loss from forests (instead of "total removed biomass"), yielding a net increase of 1,381,417 metric tons CO₂e per year over the 20 years of the project.⁵⁸⁵ These GHG emissions are 33 times and 15 times higher, respectively, than the 95,445 metric ton CO₂e per year claimed by the DEIR in its Impacts Analysis conclusion.⁵⁸⁶

e. The DEIR should utilize a lifecycle analysis framework to analyze GHG emissions from the Project

The DEIR analysis must transparently account for all changes in both biogenic and fossil fuel GHG emissions across the Project lifecycle. The Project GHG emissions should be

⁵⁸³ DEIR 3.7-73.

⁵⁸⁴ DEIR 3.7-79.

⁵⁸⁵ DEIR 3.7-81.

⁵⁸⁶ DEIR 3.7-53.

analyzed utilizing a lifecycle analysis (LCA) framework to accurately assess the Project's impact on the climate.

At present, the Subsection 3.7.4 *Impact Analysis* fails to comprehensively account for GHG emission changes caused by the project, as detailed above. Instead, LCA is relegated to the dismissively titled subsection 3.7.5 *Additional GHG Considerations* where the word "lifecycle" is presented in scare quotes, the technical discussion is preceded by nearly two pages of legal disclaimers, and the cited guidance documents overlook the primary international standards governing LCA practice (i.e., ISO 14040:2006, ISO 14044:2006, ISO 14067:2018). This gives the public the impression (quite deliberately it seems) that LCA is not legitimate, when in fact it is the professional pursuit of a well-established community of academics, engineers, and analysts. After this dismissive introduction the authors proceed with multiple LCA-like calculations, first a "conventional lifecycle calculation" that may or may not "include initial carbon loss," and then an "alternative biomass lifecycle analysis." The outcome is that even a professional LCA practitioner, let alone a lay reader, cannot make heads or tails of what to conclude about the Project's net impact to global warming.

The existing analyses in Subsection 3.7.4 *Impact Analysis*, and the corrections that we explain above, must be incorporated in a single LCA framework that simultaneously makes the analysis understandable, unambiguous, and scientifically relevant in the context of global warming.

Specifically, the global change in GHGs should be computed by subtracting an inventory of baseline GHG emissions from an inventory of Project GHG emissions. For the baseline case, the DEIR should use reasonable scenarios for the power source that the wood pellets would be replacing. Replacing coal would be the best-case scenario. However, the pellets could in fact be burned in existing biomass power plants and compete with other renewables for subsidies and potentially displace other renewables.

The following structure provides an example for the baseline and project cases:

Baseline Emissions: All GHG emissions inside the system boundary if no action is taken, and where coal combustion is used as the baseline.

Baseline Emissions	Million Metric Tons CO ₂ e	DEIR source	Corrections Needed (Detailed in Comments)
B1. from forest			
(a) extant slash decay or burn	?	<i>not reported</i>	
(b) soil carbon	?	<i>not reported</i>	
(c) wildfire	?	Table 3.7-17	<i>corrections needed</i>
B2. coal extraction & prep	?	20x Table 3.7-22, "Coal Lifecycle -- Production"	<i>corrections needed</i>
B3. coal transport	1.20	20x Table 3.7-22, "Coal Lifecycle -- Transportation"	
B4. coal combustion	?	20x Table 3.7-23, "100% Replacement" + 20x Table 3.7-22, "Coal Lifecycle -- Heat Generation"	<i>corrections needed</i>

Project Emissions	Million Metric Tons CO ₂ e	DEIR Source	Corrections Needed (Detailed in Comments)
A0 stock difference	67.91	Table 3.7-15	<i>corrections needed</i>
A1. from forest			
(a) new slash decay or burn	--	<i>Included in stock difference</i>	
(b) soil carbon	?	<i>not reported</i>	
(c) wildfire	?	Table 3.7-17	<i>corrections needed</i>
(d) decay - belowground	?	<i>not reported</i>	
A2. project construction	0.01	Table 3.7-7 + Table 3.7-9 + Table 3.7-12	
A3. harvesting equipment	?	20x p.3.7-76 "e _{uc} "	<i>corrections needed</i>
A4. feedstock transport	}	20x Table 3.7-8 + 20x Table 3.7-10	<i>corrections needed</i>
A5. pellet plants			<i>corrections needed</i>
A6. rail transport to Stockton	0.10	20x Table 3.7-11	
A7. Port of Stockton facility	?	20x Table 3.7-13	<i>corrections needed</i>
A8. marine transport to market	3.57	20x p.3.7-77, see discussion of "e _u "	
A9. pellet combustion			
(a) from felled stock	--	<i>Included in stock difference</i>	
(b) from extant slash	?	<i>not reported</i>	

Note that line item A0 “stock difference” is not ISO-compliant for life-cycle emissions inventories, but we use it here for ease of comparison with the DEIR as well as for consistency with the Intergovernmental Panel on Climate Change methodologies required for national greenhouse gas inventories.

In the case where equivalent coal combustion is used as the baseline, it is important to note that at least two of the DEIR’s computations are in error. First, the coal production emissions published by the DEIR’s solitary source Wang *et al* 2016 are not consistent with other published literature. Wang *et al* 2016 report coal production emissions to be 40% the value of the coal’s combustion emissions, whereas estimates elsewhere in published literature rarely exceed 10% of combustion emissions.⁵⁸⁷

Second, Table 3.7-22 contains values for “heat generation” that are not defined in the body text. Wang et al does include tabular values for “heat generation” in their publication, but these values represent fuel combustion emissions and do not have a discernable relationship to DEIR Table 3.7-22. The Table 3.7-22 value for coal “heat generation” is less than 7% of Wang *et al.*’s similarly named value so it is entirely unclear what is meant with these table entries.

D. Hazards

1. The DEIR downplays the Project’s major fire risks by avoiding any actual discussion of potential fire risk from wood pellet storage

Wood pellet production and storage facilities regularly catch fire and explode. Large piles of woody biomass material suffer from a common problem: Heat accumulates in storage piles as volume increases, while heat removal improves as surface area increases. Crucially,

⁵⁸⁷ E.g. 6% according to Zoran J. N. Steinmann et al., A Methodology for Separating Uncertainty and Variability in the Life Cycle Greenhouse Gas Emissions of Coal-Fueled Power Generation in the USA, 19 The International Journal of Life Cycle Assessment 1146 (2014), <https://doi.org/10.1007/s11367-014-0717-2>.

the heat accumulation effect of volume growth *outpaces* the counteracting heat removal effect of surface area growth by a factor of three. Absent much larger increases in a pile's surface area, significant increases in pellet pile volume put the pile at greater and greater risk of combustion, with or without an external source of ignition.⁵⁸⁸ Put more simply, large wood chip and pellet piles can—and often do—spontaneously ignite unless these fire risks are mitigated.

In the United States and across the world, fires and explosions at these facilities have endangered workers, nearby residents, and physical structures. As one example, in April 2017, wood pellets inside a storage silo in Port Arthur, Texas caught fire, burned for over three months, sent nearby residents to the hospital, and threatened workers' safety.⁵⁸⁹ That same facility has experienced multiple fires since.⁵⁹⁰ A massive explosion and fire at a Georgia wood pellet warehouse required response from hundreds of first responders, and residents' access to gas service was cut off to reduce additional fire risk.⁵⁹¹

These examples are not out of the ordinary. Rather, they reflect typical explosion and fire hazards at wood pellet manufacturing and storage facilities. As a 2018 report stated:

Of the 15 new generation pellet mills [the report] surveyed, at least eight have had fires or explosions since 2010, including several resulting in injuries. A “flash fire” at the Hazlehurst pellet mill in Hazlehurst, Georgia—the facility's second fire since commencing operations in 2014—seriously injured four employees. The Westervelt wood pellet mill in Tuscaloosa, Alabama had an explosion in 2016 which injured an employee. Enviva has had news-worthy fires at its Florida facility (Enviva Cottondale near Panama City), two fires at its Virginia facilities (Enviva Southampton and its port storage facilities, both in or near Chesapeake), and a North Carolina facility (Enviva Ahoskie north of Greenville).

German Pellets Texas alone had fires or explosions in April 2014, April 2015, May 2015, and February 2017, culminating in a two-month long fire in 2017 at

⁵⁸⁸ Esa Alakosi et al., From wood pellets to wood chips, risks of degradation and emissions from the storage of woody biomass – A short review, 54 *Renewable and Sustainable Energy Reviews* 376, 381 (2016).

⁵⁸⁹ Cameron Langford, *Residents Go to Court Over Months-Long Texas Plant Fire*, Courthouse News (Oct. 27, 2017), accessible at <https://www.courthousenews.com/residents-go-court-months-long-texas-plant-fire/>.

⁵⁹⁰ See Steve W. Stewart, *German Pellets facility in PA shut down by Fire Marshal after Thursday blaze*, KJAS (Oct. 13, 2022), accessible at https://www.kjas.com/news/local_news/article_3cb3fe56-4b35-11ed-ae82-c7f85dc1708b.html; *Smoldering Fire Ignites In Silo Containing 10,000 Tons of Wood Pellets*, Dust Safety Science (Jan. 13, 2020), accessible at <https://dustsafetyscience.com/pellet-fire-port-arthur-texas/>.

⁵⁹¹ *Over 100 First Responders Called to Fight Fire at Wood Pellet Warehouse*, Dust Safety Science (May 2, 2021), accessible at <https://dustsafetyscience.com/wood-dust-fire-brunswick-georgia/>.

German Pellets storage's silo in Port Arthur, Texas. The silo ultimately collapsed, and smoke from the smoldering pellets caused dozens of Port Arthur residents to seek medical attention. The city of Port Arthur and residents have filed multiple lawsuits over the fire, and a court has ordered German Pellets to empty all of its silos and install proper fire-fighting technology. During the process of removing the pellets, a worker was killed when a pile of wood pellets collapsed.⁵⁹²

Despite several high-profile explosions and fires at wood pellet facilities, the DEIR offers virtually no analysis of the facilities' specific hazard risks. The DEIR's Tuolumne and Port of Stockton hazard sections point to its Lassen facility discussion, which simply states, "Wood pellets do not contain hazardous materials. However, improper handling and storage of wood pellets may result in the potential for fire risk. Wood dust during production can be a potential fire source. In addition, oxidation of stored pellets can lead to self-heating and combustion. Absent proper controls, the impact of a pellet fire would be potentially significant."⁵⁹³ The rest of its fire risk discussion is dedicated to describing steps the project plans to take to reduce fire risk. The public and relevant decision makers are therefore left with no project-specific discussion of fire and explosion risks and impacts.

The DEIR's fire risk discussion is wholly inadequate. The DEIR does not include any specific consideration of the kinds of risks posed by the Lassen and Tuolumne manufacturing facilities and the Port of Stockton storage facility, the methods that will be used to manufacture and store the pellets, or the potential risks to workers, surrounding residents, or physical structures located at the various facilities. These omissions are highly concerning given that the Lassen facility is located in a high-fire severity zone, the Tuolumne facility is located in a high-fire severity zone and near a very-high-fire severity zone, and the Port of Stockton sits just across from homes and neighborhoods.⁵⁹⁴

The DEIR here unlawfully glosses over any specific discussion of fire and explosion risks. The DEIR's discussion of fire and explosion impacts at the Lassen, Tuolumne, and Port of Stockton facilities is limited to three general sentences: "[I]mproper handling and storage of wood pellets may result in the potential for fire risk. Wood dust during production can be a potential fire source. In addition, oxidation of stored pellets can lead to self-heating and combustion."⁵⁹⁵ These generic sentences could be plucked from this DEIR and dropped in any wood pellet fire discussion without leaving a trace of the details of this project and its facilities, manufacturing and storage methods, and nearby risk amplifiers.

These cursory statements do not pass for analysis under CEQA. They suffer from the same flaw as the wildfire risk discussion in *People ex rel. Bonta*: summarily concluding,

⁵⁹² Patrick Anderson and Keri Powell, *Dirty Deception: How the Wood Biomass Industry Skirts the Clean Air Act*, Environmental Integrity Project (Apr. 26, 2018) at 30.

⁵⁹³ DEIR 3.8-22.

⁵⁹⁴ DEIR 3.8-2, 3.8-4, 2-48.

⁵⁹⁵ DEIR 3.8-22, 3.8-23.

without project-specific analysis, that the project will have a significant impact.⁵⁹⁶ The “EIR’s designation of a particular adverse environmental effect as ‘significant’ does not excuse the EIR’s failure to reasonably describe the nature and magnitude of the adverse effect.”⁵⁹⁷

The EIR must actually assess the fire and explosion risks present at each site in light of the specific fire and explosion risks associated with storing and transporting wood pellets, the volume and type of wood pellets stored at and transported to each facility, the intended manufacturing, storage, and transportation methods and their impact on fire and explosion risk, and the impact that a fire and explosion may have on the surrounding areas, workers, and physical structures, including the serious risk that explosions or fires at the Lassen and Tuolumne facilities could increase the risk of wildfire ignitions in very-high and high wildfire severity zones.

2. The DEIR’s fire hazard mitigation measure is vague and potentially unenforceable

As discussed above, mitigation measures must be clear and enforceable. The agency may only defer developing a measure’s details if it is infeasible to do so when adopting the EIR. In that case, the agency must commit itself to mitigation, adopt specific performance measures the mitigation will achieve, and identify actions that can feasibly achieve the standard.⁵⁹⁸ An EIR must also “provide that measures to mitigate or avoid significant effects on the environment are *fully* enforceable through permit conditions, agreements, or other measures.”⁵⁹⁹

The DEIR offers one fire hazard mitigation measure, MM-HAZ-2, which entails a Site Specific Fire Prevention Plan for each production and storage facility.⁶⁰⁰ The DEIR states that the Plans shall “incorporate . . . Inherently Safer Design features where applicable, at a minimum,” and lists several features, including maintenance and housekeeping measures, temperature, aeration, and fire suppression systems, and more.⁶⁰¹

The Plan has two major flaws. First, it is unclear how GSFA will ensure enforcement of several provisions of the Plan. The DEIR currently states that the plans will be reviewed and approved by the relevant fire authorities, but it does not specify how and whether fire authorities or the agency will verify (1) the company’s compliance with ongoing commitments it makes, like housekeeping measures, nor (2) the regular function of the critical systems the company commits to installing and maintaining. The DEIR must guarantee fire prevention plan measures are verified on an ongoing basis and agency must develop and state a realistic method of ensuring ongoing compliance with these measures.

⁵⁹⁶ *People ex rel. Bonta, supra*, at pp. 1231-36.

⁵⁹⁷ *Cleveland National Forest Foundation, supra*, 3 Cal.5th at p. 514.

⁵⁹⁸ CEQA Guidelines, § 15126.4(a)(1)(B).

⁵⁹⁹ Pub. Resources Code, § 21081.6(b) (emphasis added).

⁶⁰⁰ DEIR 3.8-30, 3.8-31.

⁶⁰¹ DEIR ES-57-58.

Second, the effectiveness of the DEIR's mitigation measures cannot be properly assessed without a specific discussion of fire and explosion risks and the manner in which the Prevention Plan provisions will reduce those risks. As discussed above, fires and explosions at wood pellet facilities reveal the specific risks posed by wood pellet production and transport. The DEIR does not discuss these risks in any detail. Consequently, the EIR does not "sufficiently discuss the project's potential adverse effect of human-cause[d] ignitions and analyze in some detail how the project's design (or mitigation measures) alleviates such risks."⁶⁰² The DEIR must revise its impacts analysis for decision makers and the public to effectively determine whether the proposed mitigation measures meet CEQA's standards for effectiveness.

These revisions should focus on "connect[ing] the dots between" fire risks and mitigation measures so that "the public [can] discern the analytic route . . . the agency traveled from evidence to action."⁶⁰³ Those connections include (1) the causes of other wood pellet fires and the mitigation measures proposed here, to assess whether GSFA has considered all potentially effective measures, and (2) the mitigation measures used at other wood pellet facilities as compared to the measures proposed here. The agency can comply with CEQA only by discussing site-specific fire and explosion risks and assessing mitigation measures that feasibly reduce those risks.

E. Noise

1. The DEIR lacks suitable thresholds of significance for evaluating the Project's significant environmental impacts

Determining whether or not a project may result in a significant adverse environmental effect is a key aspect of CEQA.⁶⁰⁴ CEQA specifically anticipates that agencies will use thresholds of significance as an analytical tool for judging the significance of a Project's impacts.⁶⁰⁵ Because the requirement to provide mitigation is triggered by the identification of a significant impact, the DEIR's failure to identify all of the Project's significant impacts also results in a failure to mitigate these impacts.

The first step in any discussion of an environmental impact is to select a threshold of significance. Here, quantitative thresholds of significance were established in the DEIR for construction noise at three facilities, construction vibration at three facilities, Project-attributed transportation noise at two of the three facilities, and stationary source noise (ongoing operational noise) at three facilities. However, no thresholds of significance were identified or established for the noise emissions generated by feedstock acquisition activities. Instead, as discussed below, the DEIR identifies the noise emissions to be generated by feedstock acquisition activities without identifying a threshold to measure the significance of the impact.

⁶⁰² *People ex rel. Bonta, supra*, at p. 1236.

⁶⁰³ *Id.* at p. 1234 (quoting *Laurel Heights, supra*, 47 Cal.3d at p. 404) (internal quotations omitted).

⁶⁰⁴ CEQA Guidelines, § 15064(a) (determination of significant effects "plays a critical role in the CEQA process").

⁶⁰⁵ CEQA Guidelines, § 15064.7.

The DEIR acknowledges that “no specific treatment locations have yet been identified in this program-level analysis, and thus the specific location of noise-sensitive receptors in relation to any particular treatment activities is unknown at this time...”⁶⁰⁶ The DEIR further states that “noise-sensitive receptors could be located in close proximity to vegetation treatments in undeveloped areas as well. It is further assumed that noise-sensitive receptors near treatment activity sites could experience elevated noise levels.”⁶⁰⁷

The DEIR cannot simply excuse itself from the task of establishing a threshold of significance. The California Supreme Court has made clear that “no authority exempts an agency from complying with the law, environmental or otherwise, merely because the agency’s task may be difficult.”⁶⁰⁸ Instead, the lead agency must “use its best efforts to find out and disclose all that it reasonably can.”⁶⁰⁹

Therefore, the DEIR must establish a threshold (or thresholds) of significance for the noise generated by feedstock acquisition activities and must determine if the Project exceeds this threshold.

2. The DEIR improperly defers mitigation and improperly concludes that the noise impacts of feedstock acquisition are not significant

The DEIR quantifies the noise levels from feedstock acquisition activities and cites an “equivalent continuous sound level” (L_{eq}) at 87 dB L_{eq} and a maximum sound level of 91 dB L_{max} for both mechanical and manual vegetation treatment at 50 feet. The DEIR then concludes that the noise impacts of feedstock acquisition activities would not result in the exposure of noise-sensitive receptors to a substantial temporary increase in ambient noise levels and that this impact would be less than significant.⁶¹⁰ The DEIR claims that “Vegetation treatment activities undertaken as to implement Sustainable Forest Management Projects would adhere to the PDFs that require consistency with local noise policies and ordinances to the extent the project is subject to them, limit vegetation treatment activities to daytime hours, ensure proper notification of nearby sensitive receptors, and locate treatment activities and staging areas away from sensitive receptors to minimize noise exposure (as further described in Section 2.4). Further, as noted, any increase in ambient noise levels exposure at nearby receptors would be temporary and periodic.”⁶¹¹

However, the DEIR may not avoid conducting a thorough analysis of the Project’s impacts under the assumption that such impacts would be temporary. CEQA requires analysis

⁶⁰⁶ See DEIR 3.11-30.

⁶⁰⁷ *Id.*

⁶⁰⁸ *Laurel Heights, supra*, 47 Cal.3d at p. 399; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1106–1112 (CEQA does not allow an analysis to be labeled too speculative based on lack of threshold).

⁶⁰⁹ *Citizens to Preserve the Ojai v. County of Ventura* (1985) 176 Cal.App.3d 421, 431 (citation omitted).

⁶¹⁰ See DEIR 3.11-31.

⁶¹¹ See DEIR 3.11-30.

of temporary or short-term impacts.⁶¹² CEQA defines a “significant effect on the environment” as “a substantial, or potentially substantial, adverse change in the environment.”⁶¹³ An effect on the environment need not be “momentous” or “important” to meet the CEQA test for significance.⁶¹⁴ An effect need not be either long term or permanent to be significant, but duration is a factor that may affect the significance of an environmental impact.⁶¹⁵

The DEIR’s failure to identify a noise threshold for feedstock acquisition activities does not mean that the Project will get a “pass” on identification of and compliance with reasonable noise limitations. The DEIR should determine here and now a reasonable threshold for exposure of noise-sensitive receptors to a substantial temporary increase in ambient noise levels. For future feedstock acquisition locations that do not have an established threshold, the threshold established in the DEIR would apply, and the DEIR would then identify specific measures to establish how noise impacts generated by mechanical and manual vegetation treatment will be mitigated to reduce impacts in an attempt to meet that threshold.

The DEIR also fails to properly analyze the noise generated by haul truck traffic related to feedstock acquisition activities. The DEIR states that feedstock acquisition haul truck trips would generate increased noise levels for noise-sensitive receptors during daytime hours, but not nighttime hours due to the fact that FA activities will be limited to the daytime. Without any analysis of the actual haul truck noise impacts created and without identification of any threshold of significance, the DEIR improperly concludes that increased off-site traffic noise exposure during sustainable forest management project treatment activities would be less than significant.⁶¹⁶ This conclusion short-cuts the steps CEQA requires, including documenting the noise generated by haul trucks and identifying a threshold to determine when that noise becomes significant and requires mitigation.

The absence of significance thresholds in the DEIR leads to a cascade of other failures: without a threshold, the DEIR cannot do its job. No meaningful analysis of the Project’s actual and foreseeable environmental impacts can be made, and no feasible mitigation measures can be formulated and considered by the public and the decision-makers. Because the DEIR here provides no standard or threshold on which to base its conclusion of the Project’s noise impacts from feedstock acquisition activities, the DEIR must be revised to supply that information, and recirculated for public review and comment.

3. The DEIR fails to demonstrate that the Project Design Features will effectively reduce noise

Notwithstanding the DEIR’s deficient noise impact analysis, the document nonetheless recognizes the need to mitigate for the Project’s significant noise impacts. However, the DEIR

⁶¹² CEQA Guidelines, § 15126.2(a) (agency must analyze both short- and long-term impacts).

⁶¹³ Pub. Resource Code, § 21068.

⁶¹⁴ See Kostka and Zischke, Practice Under the California Environmental Quality Act (Cont.Ed.Bar 2024) § 6.44 B.

⁶¹⁵ *Running Fence Corp. v. Superior Court* (1975) 51 Cal.App.3d 400, 416.

⁶¹⁶ See DEIR 3.11-31.

improperly relies on PDFs rather than mitigation measures to do so. As discussed elsewhere in these comments, the DEIR's reliance on PDFs violates CEQA. (See *supra*, section V.)

Moreover, the PDFs fail to meet CEQA's standards for mitigation. Many of the PDFs do not identify specific steps or actions to be taken, are not enforceable, and simply do not demonstrate that they can reduce to insignificance the Project's noise impacts. When a lead agency relies on mitigation measures to find that project impacts will be reduced to a level of insignificance, there must be substantial evidence in the record demonstrating that the measures are feasible and will be effective.⁶¹⁷ If these Project Design Features are serving the role of mitigation measures to reduce the severity of impacts created by the Project, they are failing.

The PDFs do not provide substantial evidence in the record that the noise impacts generated by this Project will be less than significant. The DEIR contains no detail on specific actions to be taken to reduce noise impacts from the levels identified above to below an unknown threshold that may or may not exist in a future feedstock acquisition location. For instance, PDF-NOI-1 states the following:

GSNR will require that operation of heavy equipment associated with treatment activities (heavy off-road equipment, tools, and delivery of equipment and materials) will occur during daytime hours if such noise would be audible to receptors (e.g., residential land uses, schools, hospitals, places of worship). Cities and counties in the treatable landscape typically restrict construction-noise (which would apply to vegetation treatment noise) to particular daytime hours. If treatment activity is subject to local noise ordinance, it will adhere to those to the extent the project is subject to them. If the applicable jurisdiction does not have a noise ordinance or policy restricting the time-of-day when noise-generating activity can occur noise-generating vegetation treatment activity will be limited to the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday and federal holidays. If the treatment activity is not subject to local ordinances, it will adhere to the restrictions stated above or may elect to adhere to the restrictions identified by the local ordinance encompassing the treatment area.⁶¹⁸

The DEIR identifies the noise levels from feedstock acquisition activities and cites an "equivalent continuous sound level" (L_{eq}) at 87 dB L_{eq} and a maximum sound level of 91 dB L_{max} for both mechanical and manual vegetation treatment at 50 feet. PDF-NOI-1 suggests that as long as feedstock acquisition activities are conducted during the daytime, this volume of noise impacts need not be constrained. This, however, is untrue. Once again, a proper threshold of significance must be determined for noise resulting from feedstock acquisition activities (see previous section on the need to establish a threshold). Moreover, the DEIR cannot defer mitigation on how noise impacts of feedstock acquisition activities will be addressed. The

⁶¹⁷ *Sacramento Old City Assn.*, *supra*, 229 Cal.App.3d at p. 1027; *Kings County Farm Bureau*, *supra*, 221 Cal.App.3d at pp. 726–729.

⁶¹⁸ See DEIR 2-33.

PDFs (or more appropriately, mitigation measures) must state the specific actions to be taken. The DEIR must state how the feedstock acquisition activities will be modified to comply with applicable noise ordinances of the local jurisdictions and must include a commitment to conduct follow-up measurements to ensure the noise mitigating measures have been successfully implemented. The measures need to be clear and enforceable, and they may not contain language such as “to the extent feasible,” (as PDF-NOI-4, related to staging areas, does), which fatally undermines the commitment to mitigation CEQA requires.

4. The DEIR indefensibly concludes that feedstock acquisition activities will not be cumulatively considerable

The DEIR compounds the errors discussed above in concluding that the feedstock acquisition activities will not be cumulatively considerable. The DEIR notes that the feedstock acquisition activities may increase the use of heavy-duty equipment and haul trucks, thereby increasing ambient noise levels in the vicinity of feedstock acquisition activities.⁶¹⁹ However, since the DEIR failed to identify thresholds of significance for noise generated by feedstock acquisition activities and failed to demonstrate specifically how the noise impacts of individual feedstock acquisition activities will be reduced to levels below appropriate thresholds, it cannot reasonably conclude that cumulatively considerable noise impacts will not exist.

5. The DEIR ignores relevant science showing that the pellet facilities would cause significant noise pollution

The DEIR claims that the noise impact at the Lassen and Tuolumne pellet facilities would be less than significant, and thus that no mitigation is necessary.⁶²⁰ The DEIR relies on modeling with specific assumptions regarding individual sources of noise, such as log chippers, hammer mills, and dryer systems.⁶²¹

Using those assumptions, the DEIR concludes that the Lassen facility would not exceed the County’s noise limits for day or nighttime, 60/65 dBA hourly L_{eq} and 55 dBA hourly L_{eq} respectively.⁶²² However, the model’s values are extremely close to those limits, with the highest being 59 dBA hourly L_{eq} during the daytime and 51.4 dBA hourly L_{eq} during the night.⁶²³ For the Tuolumne facility, the modeled values outright exceed the County limits of 50 and 45 dBA hourly L_{eq} during day and nighttime, respectively.⁶²⁴ With rail, the Project would create noise as high as 59.7 dBA hourly L_{eq} and 55.6 dBA hourly L_{eq} at day and night.⁶²⁵ Yet even though these levels are above the threshold of significance, the DEIR dismisses them because they are less than 60 dBA hourly L_{eq} .⁶²⁶ This is error.

⁶¹⁹ See DEIR 3.11-46.

⁶²⁰ DEIR 3.11-35, 3.11-39.

⁶²¹ DEIR 3.11-28.

⁶²² DEIR 3.11-35.

⁶²³ DEIR 3.11-34 to 3.11-35, Tables 3.11-22 through 3.11-24.

⁶²⁴ DEIR 3.11-39.

⁶²⁵ DEIR 3.11-38, to 3.11-39, Tables 3.11-28 through 3.11-30.

⁶²⁶ DEIR 3.11-39.

Furthermore, the DEIR sets a threshold that claims that cumulative noise impacts would be significant if the Project creates a greater than 5.0 dB increase when ambient noise levels are less than 60 dB.⁶²⁷ The DEIR fails to disclose what the attributable increase in noise would be for the Lassen facility, perhaps because the threshold draws from the Tuolumne County standards. The public is left wondering what the cumulative increase in noise will be from this aspect of the Project, an error that violates CEQA. As to the Tuolumne facility, the DEIR claims that the modeled maximum noise from the facility would be less than ambient noise in the area.⁶²⁸ But this does not answer the relevant question of whether the noise the Project would *add* to existing ambient noise would be cumulatively significant. The DEIR must either correct this error or explain why its analysis is accurate.

The DEIR's noise analysis should also be revised to include recent study on pellet mill noise. The researchers there "conducted a noise exposure assessment in Gloster, Mississippi, a community affected by pellet production, and compared it to Mendenhall, a nearby community without industrial activity."⁶²⁹ Their findings "demonstrate that noise pollution from wood pellet manufacturing significantly alters the soundscape of rural communities like Gloster, with consistently higher sound levels across multiple metrics . . ."⁶³⁰ On average across all sound metrics, the sound levels in Gloster were 2-6 dB higher than in similar towns without pellet mills.⁶³¹ "These findings suggest that wood pellet manufacturing can severely alter the soundscape of rural communities, raising environmental justice concerns."⁶³²

F. Visual effects

1. The DEIR does not assess any specific visual impacts across the feedstock acquisition working areas

CEQA establishes the State's policy to "[t]ake all action necessary to provide the people of this state with . . . enjoyment of aesthetic, natural, scenic, and historic environmental qualities."⁶³³ Consequently, "[a]ny substantial negative effect of a project on view and other features of beauty could constitute a significant environmental impact under CEQA."⁶³⁴ The CEQA Guidelines emphasize potential project impacts on scenic vistas, scenic resources, visual character, and public views, and CEQA requires that the agency mitigate significant impacts to these aesthetic features, where feasible.⁶³⁵

⁶²⁷ DEIR 3.11-21.

⁶²⁸ DEIR 3.11-39.

⁶²⁹ E.D. Walker et al., *Amplifying concerns: An exploration of community noise levels in rural communities impacted by wood pellet production*, Environmental Challenges Vol. 17 (Dec 2024), at 1.

⁶³⁰ *Id.* at 8.

⁶³¹ *Id.* at 4.

⁶³² *Id.* at 1.

⁶³³ Pub. Resources Code, § 21001(b).

⁶³⁴ *Ocean View Estates Homeowners Assn., Inc. v. Montecito Water Dist.* (2004) 116 Cal.App.4th 396, 401 (citing *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1604).

⁶³⁵ Pub. Resources Code, § 21060.5; CEQA Guidelines, Appendix G at 348.

Natural beauty cascades across the forests that the Project intends to harvest, manufacture, and sell. The feedstock acquisition areas could hardly span more pristine land; towering rust-color jeffrey and sugar pines grow from canyons in Tahoe National Forest, rising next to silvery white firs and lodgepole pines that slope and soften the mountains' peaks. These vistas give way to El Dorado National Forest's emerald mixed conifer canopies, before scaling up the central Sierra's stone crests, pinyon pine woodlands, fir and pine forests, and subalpine and alpine terrain.⁶³⁶ The Lassen sites are no different; green-boughed incense cedar and douglas fir dot across Lassen volcanic rock and Plumas woodlands.⁶³⁷ As the DEIR acknowledges, "[v]isual quality is typically high within federal and state forests," attracting hikers, campers, and tourists who visit the Working Areas to enjoy spectacular views, undisturbed flora, and the clear night sky.⁶³⁸

Despite this concession, the DEIR fails to assess any specific visual impacts at any feedstock acquisition sites. The DEIR states that "feedstock would originate from private, state, tribal, and federal timberlands located within the Working Area of the two wood pellet production facilities," with some exceptions.⁶³⁹ Nevertheless, the DEIR concludes that visual effects at these sites are less than significant by making vague, general statements about the typical visual quality of forestlands.⁶⁴⁰ The DEIR does not analyze a single specific visual impact at a single potential Feedstock Acquisition site before concluding that the Project's visual impacts are less than significant.

This less-than-significant finding is unsupported. First, the DEIR plainly ignores major project visual effects. For example, the DEIR does not account for the combined visual effects of the GSNR Biomass Only Thinning Projects, which represent a massive increase in thinning activity across tens of thousands of acres of California forestland. Indeed, the DEIR devotes

⁶³⁶ See DEIR Figure 2-2, Working Area (Tuolumne Site).

⁶³⁷ DEIR Figure 2-1, Working Area (Lassen Site).

⁶³⁸ DEIR 3.1-1.

⁶³⁹ DEIR 3.1-1, 3.1-15.

⁶⁴⁰ See DEIR 3.1-1 (stating that "[t]he visual landscape in these activity areas will vary. Generally, forest lands are characterized by lack of development and dense vegetation"), 3.1-15 (stating generally that "[p]ublic views may be affected by activities, such as the removal of dead or hazardous trees or brush, construction of shaded fuel breaks, and forest thinning operations, that would occur during active implementation of the Sustainable Forest Management Projects [but that [t]hese types of activities would not block any views, dominate a viewshed, or significantly disrupt views from a scenic vista"), 3.1-16 (stating generally that "[t]hese activities will occur primarily within federal and state forests, and private lands that are zoned for timberland production"), 3.1-18 (stating generally that "U.S. Forest Service Region 5 includes all of the 18 national forests located in California, where many of the feedstock activities are expected to occur. Feedstock acquisition activities would, by design, reduce vegetation within project sites. However, the intent of such projects is that significant vegetation would remain and that growth of mature trees would be improved by reducing overcrowding. Improvement of forest health and resiliency would have visual benefits").

only a single, conclusory paragraph to the Project’s cumulative aesthetic impacts.⁶⁴¹ It repeats this deficiency across the aesthetic impacts section.⁶⁴² Second, the DEIR often acknowledges that aesthetics *could* be affected, but then relies on Project Design Features to find impacts less than significant.⁶⁴³ As explained below, this reliance is improper. The DEIR thus indicates that aesthetic impacts will be significant in the absence of lawful, effective, enforceable mitigation.

The DEIR’s complete lack of specificity also violates CEQA. As the CEQA Guidelines state, “[d]rafting an EIR or preparing a negative declaration necessarily involves some degree of forecasting. While foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.”⁶⁴⁴ The agency can and should make reasonable forecasts about the visual effects of its feedstock acquisition projects.⁶⁴⁵ Mere conjecture and speculation that logging might someday improve the visual character of forests and that projects are not likely to occur in the same viewshed cannot support the DEIR’s conclusion that impacts will be less than significant. Absent a sufficient impacts analysis, the agency and the public cannot effectively assess the project’s visual impacts or determine whether GSFA’s proposed mitigation measures pass muster. The project’s encroachment into the state’s most spectacular forests renders these deficiencies particularly troublesome.

2. The DEIR unlawfully relies on Project Design Features—including one non-existent Project Design Feature—to support its improper aesthetic impacts conclusion

The EIR here relies on three measures that it calls Project Design Features rather than mitigation measures. The visual Project Design Features include (1) thinning viewshed-adjacent vegetation to “achieve a natural transitional appearance,” (2) storing treatment-related materials outside viewsheds, and (3) preserving “[s]ufficient vegetation” near treatment areas to screen public views “as reasonable or appropriate for vegetation conditions.”⁶⁴⁶ The DEIR relies on these Project Design Features to conclude aesthetic impacts are less than significant.⁶⁴⁷

None of these measures are properly considered “design features” of the Project. The project entails procuring forest material, producing wood pellets, and transporting those wood pellets to market. Feedstock acquisition—whether done through timber harvesting, commercial lumbermill purchases, or fuel reduction—can be performed with or without consideration for natural appearances, viewsheds, and public views. Just as a highway can be built without protecting redwood roots, forests can be thinned and harvested without protecting their beauty.⁶⁴⁸ The three visual Project Design Features are not an inherent part of feedstock

⁶⁴¹ DEIR 3.1-23.

⁶⁴² DEIR 3.1-1; 3.1-15; 3.1-18.

⁶⁴³ See DEIR 3.1-15 (discussing AES-1.)

⁶⁴⁴ CEQA Guidelines, § 15144.

⁶⁴⁵ See *San Francisco Ecology Ctr. v City & County of San Francisco* (1975) 48 Cal.App.3d 584, 595.

⁶⁴⁶ DEIR 2-16.

⁶⁴⁷ DEIR 3.1-15, 3.1-16, 3.1-18.

⁶⁴⁸ *Lotus, supra*, 223 Cal.App.4th at 655–656.

acquisition; rather, they are “plainly mitigation measures” designed to reduce the project’s visual impacts.⁶⁴⁹ They must be proposed, assessed, and if adopted, implemented as such.

Additionally, the DEIR twice bases its less-than-significant conclusions on “PDF-AES-4.”⁶⁵⁰ But there is no “PDF AES-4”; the DEIR includes only three Project Design Features related to visual effects.⁶⁵¹ The agency must correct this error and update its analysis to account for its previous reliance on a non-existent project design feature, which must be evaluated instead as a mitigation measure.

3. The visual Project Design Features do not meet CEQA mitigation standards

The visual Project Design Features must be evaluated as CEQA mitigation measures, but they do not meet CEQA’s standards for mitigation. The DEIR must set forth mitigation measures that minimize significant impacts on the environment.⁶⁵² Mitigation measures must be fully enforceable and the agency proposing them must be empowered to implement them.⁶⁵³ Vague measures are unlawful, and deferred measures are unlawful unless it is infeasible to fully formulate them when adopting the EIR. In that case, the agency must commit itself to mitigation, adopt specific performance measures the mitigation will achieve, and identify actions that can feasibly achieve the standard.⁶⁵⁴

CEQA requires a firm commitment to mitigation. An agency may not rely on “a generalized goal . . . and then set [] out a handful of cursorily described mitigation measures for future consideration.”⁶⁵⁵ For example, a requirement that an applicant “increase or maximize” a practice and “reduce or minimize” another practice “to the extent feasible . . . defers the formulation of the mitigation measures and lacks specific performance standards” because “the terms ‘increase’ and ‘decrease’—even though preceded by the mandatory term ‘shall’ and modified by the phrase ‘to the extent feasible’—are not specific performance standards.”⁶⁵⁶

All three visual Project Design features are legally inadequate because they are vague and unenforceable. PDF-AES-1 states that vegetation shall be thinned “as reasonable or appropriate for vegetation conditions.”⁶⁵⁷ PDF-AES-2 states that treatment-related materials

⁶⁴⁹ *Lotus, supra*, 223 Cal.App.4th at p. 656 fn.8.

⁶⁵⁰ DEIR 3.1-15, 3.1-16 (stating that “PDF-AES-4” addresses scenic vistas and views from state scenic highways).

⁶⁵¹ DEIR 2-16.

⁶⁵² Pub. Resources Code, § 21100(b)(3).

⁶⁵³ *Id.* § 21004; CEQA Guidelines, §§ 15040, 15126.4(a)(2); *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 937.

⁶⁵⁴ CEQA Guidelines, § 15126.4(a)(1)(B).

⁶⁵⁵ *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 857 (quoting *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 108).

⁶⁵⁶ *King & Gardiner Farms, supra*, 45 Cal.App.5th at 857–858.

⁶⁵⁷ DEIR 2-16.

will be placed outside public viewsheds “to the extent feasible.”⁶⁵⁸ PDF-AES-3 states that “[s]ufficient vegetation shall be preserved within, at the edge of, or adjacent to treatment areas to screen views from public trails, parks, recreation areas, and roadways as reasonable or appropriate for vegetation conditions.”⁶⁵⁹

These measures suffer the same defects identified in *King & Gardiner Farms* and its progenitors: CEQA prohibits deferred mitigation without clear, specific performance standards. The Project Design Features do not provide a performance measure against which the significance of the visual impacts of feedstock acquisition can be judged. Instead, the measures improperly leave it to GSNR to later decide, without any direction or criteria, what falls within the ambit of ambiguous phrases like “reasonable,” “appropriate,” or “to the extent feasible.” These proposals do not commit GSNR to any specific or enforceable action whatsoever. If adopted, these Project Design Features would not meet CEQA’s standards for mitigation measures.

G. Transportation

The DEIR estimates that there will be 548 daily haul truck trips in the Lassen feedstock area and 236 daily haul truck trips in the Tuolumne feedstock area.⁶⁶⁰ However, the DEIR excludes these trips in its vehicles miles traveled (VMT) calculations. Given that the majority of VMT from the Project is heavy truck traffic, not automobile traffic, this interpretation of the CEQA Guidelines is misleading. Notably, the DEIR includes this truck traffic as part of its GHG analysis;⁶⁶¹ it should do the same for its transportation analysis. The EIR must provide a more specific analysis of VMT for feedstock acquisition that includes heavy truck traffic. These more specific numbers must, in turn, inform the mitigation measures proposed for reducing VMT.

The DEIR should also more fully analyze the degradation and congestion impacts of these trucks on roads in the Project area. As the DEIR acknowledges with respect to the Lassen Facility, haul trucks could cause faster degradation of certain local roads, necessitating mitigation.⁶⁶² Although GSFA may not know the exact haul routes at this time, it has already provided a list of “expected” routes.⁶⁶³ The DEIR must carefully assess the potential for congestion and physical degradation of local roads in the entire Project area, and propose adequate mitigation measures—including mitigation for damage that occurs on roads beyond the “expected” routes already listed. For example, the DEIR flatly states that the Project would not conflict with the Tuolumne County General Plan, and that impacts would therefore be less than significant at the Tuolumne Facility.⁶⁶⁴ But that General Plan requires that “new development . . . provide mitigation for its fair share” of impacts to the County’s transportation

⁶⁵⁸ DEIR 2-16.

⁶⁵⁹ DEIR 2-16.

⁶⁶⁰ DEIR 3.2-53, 3.2-55.

⁶⁶¹ DEIR 3.14-20.

⁶⁶² DEIR ES-69–71, 3.14-26.

⁶⁶³ DEIR 3.14-2, 3.14-5 (listing the “expected” haul routes).

⁶⁶⁴ DEIR 3.14-27–28.

system.⁶⁶⁵ Given the number and length of haul trips, it is hard to imagine that these impacts would not be significant.

As to MM-TRF-4, which requires electric vehicle charging infrastructure at the Lassen Facility, Tuolumne Facility, and Port of Stockton,⁶⁶⁶ the EIR must specify that this infrastructure will be consistent with the version of the California Green Building Standards in place at the time the relevant permits are issued. The EIR should also clearly specify the amount of infrastructure that will be provided, not just the applicable Standards.

H. Energy

CEQA requires an agency to assess whether a project will cause unnecessary and inefficient consumption of energy.⁶⁶⁷ The renewable energy analysis serves two purposes: “First, when the EIR analyzes the project’s energy use to determine if it creates significant effects, it should discuss whether any renewable energy features could be incorporated into the project.”⁶⁶⁸ The EIR’s determination of whether the potential impact is significant is to be based on this discussion. Second, if the EIR concludes the project’s impact on energy resources is significant, it should consider mitigating the impact by requiring uses of alternate fuels, particularly renewable ones, if applicable.”⁶⁶⁹ The DEIR here fails to assess whether additional rooftop solar or battery storage could meet the energy demand created at the Lassen and Tuolumne facilities.

The project will increase energy demand. The DEIR states that the Lassen Facility and Tuolumne Facility will add 142,677,840 kWh/year and 94,807,680 kWh/year of electrical demand, respectively.⁶⁷⁰ The DEIR also states that the Port of Stockton project operation would add 12,060,000 kWh/year of electrical demand.⁶⁷¹ California law compels the Project to include a minimum amount of rooftop solar at the Lassen and Tuolumne Facilities, in accordance with Building Code requirements.⁶⁷²

The DEIR does not, however, calculate how much its required rooftop solar will ameliorate its electrical demand.⁶⁷³ It merely states that “[t]he project includes solar power as part of SDF-ENE-1, which would be provided by solar PV panels installed on the air-

⁶⁶⁵ DEIR 3.14-14, -15 (Policies 4.A.5 and 4.A.q).

⁶⁶⁶ DEIR ES-71–72.

⁶⁶⁷ Pub. Resources Code, § 21100(b)(3); CEQA Guidelines, § 15126.4(a)(1); DEIR Appen. B7.

⁶⁶⁸ *League to Save Lake Tahoe Mountain v. County of Placer* (2022) 75 Cal.App.5th 63, 167 (citing CEQA Guidelines, § 15126.2(b)).

⁶⁶⁹ *Id.* (citing CEQA Guidelines, Appendix F., II. D. 4.)

⁶⁷⁰ DEIR 3.5-34.

⁶⁷¹ DEIR 3.5-34.

⁶⁷² See DEIR 3.5-17 (stating that “GSNR shall provide rooftop photovoltaic (PV) solar panels on all air-conditioned office buildings to comply with the [Building Code requirements] in effect at the time of building permit application”).

⁶⁷³ See DEIR Appen. B7; 3.5-35-36.

conditioned office buildings as required by the current California Building Code.”⁶⁷⁴ The DEIR’s mention of its rooftop solar at the Lassen and Tuolumne Facilities simply repeats its regulatory obligations.

The DEIR then fails to assess whether voluntary deployment of additional rooftop solar or battery storage would help reduce the Project’s energy demand. Once the DEIR simply repeats its regulatory solar obligations, it states, “As solar power technology improves in the future and regulations require additional solar, it is reasonable to assume that additional solar power may be provided to the project site. The project would comply with the current energy code requirements regarding battery energy storage, which are based on solar PV requirements. In addition, the project does not preclude installation of additional battery storage.”⁶⁷⁵ The DEIR does not assess whether additional rooftop solar or battery storage would further reduce the project’s electrical demand and increase its reliance on renewable energy resources—it simply notes that the design of the Project does not preclude additional solar or storage.

In summary, the DEIR approaches the renewable energy analysis by (1) determining that the Project will increase energy demand, (2) stating that it will install the minimum amount of rooftop solar mandated by law, and (3) stating that it could add additional solar or storage sometime in the future. The DEIR’s approach is flatly unlawful.⁶⁷⁶ CEQA requires the agency to determine whether its energy impacts are significant by actually assessing the renewable energy features that the project could incorporate to reduce its electrical demand. In other words, the agency must actually determine (1) how much of the 249.55 GWh in electrical demand created by the project across the Lassen, Tuolumne, and Stockton facilities is reduced by mandatory rooftop solar requirements at each facility and (2) whether additional rooftop solar or battery storage could further reduce the project’s added energy demand.

Based on the DEIR, neither GSFA nor the public has any way of knowing whether adding battery storage or additional rooftop solar would reduce the Project’s electrical demands. Consequently, the DEIR has not adequately determined whether the project, as currently designed, entails “wasteful, inefficient, or unnecessary consumption of energy resources.”⁶⁷⁷

I. Hydrology

1. The DEIR’s reliance on hydrological Project Design Features produces an unlawful water quality impacts analysis

As discussed above, “incorporating the proposed mitigation measures into [the] description of the project and then concluding that any potential impacts from the project will

⁶⁷⁴ DEIR 3.5-35, 3.5-56.

⁶⁷⁵ DEIR 3.5-35, 3.5-56.

⁶⁷⁶ See *League to Save Lake Tahoe Mountain, supra*, 75 Cal.App.5th at p. 168 (deeming failure to provide an adequate renewable energy analysis a procedural and prejudicial error).

⁶⁷⁷ DEIR 3.5-22.

be less than significant . . . disregards the requirements of CEQA.”⁶⁷⁸ An EIR must not confuse design features inherent to the project with “mitigation measures designed to reduce or eliminate” a project’s impacts.⁶⁷⁹ Here, the DEIR assesses whether the Project will conflict with a water quality control plan or sustainable groundwater management plan.⁶⁸⁰ It concludes that the Project will not conflict with water quality objectives of the North Coast, Central Valley, and Lahontan RWQCB Basin Plans.⁶⁸¹

The DEIR reaches that conclusion by improperly relying on several Project Design Features to reduce soil erosion and hazardous spill impacts. As the DEIR states, “PDF-GEO-1 requires suspension of road use during wet winter weather, thus reducing the potential for soil erosion in saturated soils. PDF-GEO-2 requires implementation of erosion prevention and control measures in areas with slopes in excess of 50% (27 degrees). PDF-GEO-3 and PDF-GEO-4 require implementation of a SWPPP or equivalent document, which would reduce the potential for soil erosion. PDF-GEO-5 requires construction of drainage features in treatment areas, which will reduce erosion. And PDF-GEO-6 requires that a Registered Professional Forester or licensed geologist evaluate treatment areas with slopes greater than 50% for unstable soil areas (i.e., soil with moderate to high erosion potential).”⁶⁸²

None of these steps are an inherent or necessary part of the Project’s feedstock acquisition operations; they are “plainly mitigation measures” designed to reduce the project’s hydrological impacts.⁶⁸³ The DEIR must instead weigh whether hydrological impacts at feedstock acquisition sites are potentially significant without these mitigation measures before determining whether these proposals will adequately mitigate the Project’s impacts.

The DEIR must also ensure that these mitigation measures meet CEQA standards, including CEQA’s mandate that mitigation measures must be fully enforceable.⁶⁸⁴ The DEIR does not currently state how GSFA will guarantee implementation of these Project Design Features.⁶⁸⁵ The DEIR frequently states that mitigation measures will be enforced through contracts or conditions of approval, but does not make that same assurance for these Project Design Features. Once the DEIR properly assesses its proposed Project Design Features as mitigation measures, it must state how GSNR intends to enforce suspensions on road use during wet winter weather, implementation of erosion prevention and control measures in areas with slopes over 50%, and all other mitigation measures currently listed as Project Design Features.

⁶⁷⁸ *Lotus, supra*, 223 Cal.App.4th at p. 655–656.

⁶⁷⁹ *Id.* at 656.

⁶⁸⁰ DEIR 3.9-53.

⁶⁸¹ DEIR 3.9-54.

⁶⁸² DEIR 3.9-53, 3.9-54; see also DEIR 3.9-38 (finding that hazardous substance spills will be mitigated by project design features), 3.9-48 (finding that road construction runoff impacts will be mitigated by project design features).

⁶⁸³ *Lotus, supra*, 223 Cal.App.4th at p. 656 fn.8.

⁶⁸⁴ Pub. Resources Code, § 21081.6(b).

⁶⁸⁵ See DEIR 2-27-2-29; 3.9-53-3.9-54.

2. The DEIR fails to adequately assess hydrological impacts at the Port of Stockton

An EIR must contain facts *and* analysis, not just an agency's bare conclusions.⁶⁸⁶ An insufficiently detailed EIR undermines the informational purpose of the DEIR and prevents the agency from effectively weighing potential mitigation measures.⁶⁸⁷ Here, the DEIR's assessment of hydrological impacts at the Port of Stockton are supported by little to no analysis.

For example, the DEIR's entire analysis for water quality impacts at the Port of Stockton states, "Construction and operation related water quality impacts would be the same as that described above for the Lassen Facility. Shallow groundwater is similarly present beneath the Port facility. In the absence of proposed LID features, water quality impacts would be potentially significant."⁶⁸⁸ Other DEIR discussion of potential hydrological impacts at the Port of Stockton similarly relies on rote acknowledgement of the possibility of impacts, unaccompanied by site-specific analysis.⁶⁸⁹

The DEIR's bare conclusions are inadequate. In addition to undermining reasoned agency decision-making, the agency's approach renders its significance findings meaningless. The determination of significance "is critical, because once 'significant effects' have been identified in the EIR, an agency must explore implementing feasible mitigation measures or alternatives to avoid or reduce the effect."⁶⁹⁰ Without a significance determination supported by facts and analysis, the agency cannot meaningfully determine whether its proposed mitigation measures and alternatives avoid or reduce project impacts.

J. Cumulative impacts

GSFA erred by failing to analyze past and present cumulative projects likely to compound the impacts of all three facilities, as well as feedstock acquisition activities. CEQA requires lead agencies to disclose and analyze a project's "cumulative impacts," defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."⁶⁹¹ Cumulative impacts may result from a number of separate projects, and occur when "results from the incremental impact of the

⁶⁸⁶ *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 568.

⁶⁸⁷ CEQA Guidelines, §§ 15151, 15126.2(a); *Laurel Heights, supra*, 47 Cal.3d at p. 404.

⁶⁸⁸ DEIR 3.9-41.

⁶⁸⁹ See DEIR 3.9-56 (same language), 3.9-52 ("[a]n increase in stormwater runoff as a result of increased impervious surfaces on site could potentially result in excessive erosion or siltation of these downstream water bodies; off-site flooding; and exceedance of the capacity of adjacent or downstream drainage systems"), 3.9-59 ("during operations, the proposed project would include sources of stormwater pollution as a result of incidental spills of petroleum products and hazardous substances from the rail unloading system, two storage domes, and the ship loadout system, which in turn could result in adverse water quality impacts).

⁶⁹⁰ *Berkeley Keep Jets, supra*, 91 Cal.App.4th at p. 1373.

⁶⁹¹ CEQA Guidelines, § 15355.

project [are] added to other closely related past, present, and reasonably foreseeable probable future projects,” even if each project contributes only “individually minor” environmental effects.⁶⁹² A lead agency must prepare an EIR if a project’s possible impacts, though “individually limited,” prove “cumulatively considerable.”⁶⁹³ A proper cumulative impact analysis is “absolutely critical,”⁶⁹⁴ as it is a mechanism for controlling “the piecemeal approval of several projects that, taken together, could overwhelm the natural environment.”⁶⁹⁵

The CEQA Guidelines provide two acceptable methods for considering a project’s cumulative impacts: (1) the “list of projects” approach, where the agency analyzes cumulative impacts based on a “list of past, present, and probable future projects producing related or cumulative impacts,” and (2) the “summary of projections” approach, where the agency analyzes impacts based on a “summary of projections contained in an adopted local, regional or statewide plan, or related planning document.”⁶⁹⁶

CEQA requires cumulative impacts analysis because addressing projects’ individual impacts in isolation, without regard to the impacts of other projects, risks “overwhelm[ing] the natural environment and disastrously overburden[ing] the man-made infrastructure and vital community services.”⁶⁹⁷ A project’s impacts may be “individually minor,” yet “collectively significant” in combination with those of other projects over time.⁶⁹⁸ CEQA’s cumulative impacts requirements must be interpreted to “afford the fullest possible protection of the environment.”⁶⁹⁹

The DEIR opts for the list method, except with respect to feedstock acquisition, for which GSFA claims that “exact project lists are not feasible to identify.”⁷⁰⁰ GSFA compiled two lists, one for the Tuolumne facility, and one for the Port of Stockton.⁷⁰¹ The DEIR does not contain a list for the Lassen Facility, because GSFA determined that “[n]o cumulative projects were identified.”⁷⁰² The Stockton and Tuolumne lists each comprised five proposed projects

⁶⁹² CEQA Guidelines, § 15355(a)–(b).

⁶⁹³ Pub. Resource Code, § 21083(b); CEQA Guidelines, § 15064(i).

⁶⁹⁴ *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1217.

⁶⁹⁵ *Las Virgenes Homeowners Fed’n, Inc. v. County of Los Angeles* (1986) 177 Cal.App.3d 300, 306.

⁶⁹⁶ CEQA Guidelines, § 15130(b).

⁶⁹⁷ *Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467, 527 (quoting *Las Virgenes Homeowners Federation, Inc. v. County of L. A.* (1986) 177 Cal.App.3d 300, 306).

⁶⁹⁸ CEQA Guidelines, § 15130(b).

⁶⁹⁹ *Golden Door, supra*, 50 Cal.App.5th at 527 (quoting *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 868).

⁷⁰⁰ DEIR 3.0-3.

⁷⁰¹ DEIR 3.0-6–8.

⁷⁰² DEIR 3.0-6.

that are in development.⁷⁰³ Neither list identified any existing projects, nor any past projects that may continue to have an impact on the project area.

GSFA used an impermissibly narrow lens in building out these lists. The DEIR erred by failing to include any cumulative projects relating to the Lassen facility. GSFA defends this determination by noting that “[t]he County has no active development applications within Big Valley. No similar projects (such as biomass energy) are proposed within the County.”⁷⁰⁴ By narrowing their analysis to looking for proposed projects of a similar type, the Agency impermissibly subverted CEQA guidelines, which mandate analysis of all projects “past, present, and probable future” which may produce “related or cumulative impacts.”⁷⁰⁵ In other words, it is the *impacts* that must be similar, not the type of project. The Lassen project has many areas of potential impacts, ranging from impacts to wetlands and jurisdictional waters to greenhouse gas emissions. GSFA should thus have sought out facilities past and present with any such impacts—regardless of their connection to biomass, energy production, or wood products.

The failure to include past and existing projects extends to the Tuolumne and Stockton lists as well. This absence of present and past projects cannot be written off as a reflection of actual conditions. A review of Stockton area industrial facilities identified over twenty existing projects that were not in the DEIR’s cumulative impacts analysis, but which do have related impacts to air quality, transportation networks, greenhouse gas levels, among other considerations. Perhaps the most shocking omission is the DTE Stockton facility at 2526 W Washington Street, a biomass power plant that transports, stores, and burns 320,000 tons of woody biomass fuel annually.⁷⁰⁶ Other projects with potential cumulative impacts in the Port of Stockton area includes facilities operating under the names Arrow Infrastructure Holding IA LLC, Stockton RWCF, CalTrans Stockton Maintenance Station, Tesoro Logistics Operations, Cove Contractors, Nustar Terminals Ops Partnership, Best Express Foods Inc., Pacific Ethanol Stockton, Stockton Tri-Industries, W-1 Management LLC, Contract Coatings, Diamond Foods, LLC, Duraflame West, N.J. McCutchen Inc., Nevada Cement Company, Wilmar Oils and Fats, CalPortland, BWC Terminals, and Penny Newman Grain Co.⁷⁰⁷ Likewise, GSFA has failed to include existing cumulative projects near the proposed Tuolumne facility, including the Pacific Ultrapower Chinese Station cogeneration plant, which burns wood waste and chips, and is less than three miles from the proposed Tuolumne site as the crow flies.⁷⁰⁸

⁷⁰³ DEIR 3.0-6–8.

⁷⁰⁴ DEIR 3.0-6.

⁷⁰⁵ CEQA Guidelines, § 15130(b)(1).

⁷⁰⁶ DTE Energy, DTE Energy's Northern California biomass plant begins Operations (Mar., 2014), https://dtevantage.com/wp-content/uploads/2015/03/06-DTE-Energy-Services-Northern-California-biomass-plant-begins-operations-March-13-2014_Stockton.pdf.

⁷⁰⁷ <https://community.valleyair.org/media/mn3jvrqp/2023-stockton-ab-617-enforcement-report.pdf>

⁷⁰⁸ Power Technology, Power plant profile: Pacific Ultrapower Chinese Station (Oct., 2024), <https://www.power-technology.com/data-insights/power-plant-profile-pacific-ultrapower-chinese-station-us/?cf-view>

Even the list of future, similar projects is incomplete. South Stockton is in the midst of a warehouse development boom, with many large-scale projects presently in development. Notably, the monumentally large Mariposa Industrial Park Project—a proposed 3,616,870 square-foot warehouse complex—is predicted to have “(1) significant and unavoidable air quality impacts; (2) significant and unavoidable impacts from exposing nearby sensitive receptors to criteria pollutants harmful to human health and safety; (3) significant and unavoidable impacts to greenhouse gas (GHG) emissions; (4) significant and unavoidable impacts to noise levels on nearby residences; (5) significant and unavoidable impacts to vehicle miles travelled, or VMT.”⁷⁰⁹ The Mariposa Project’s impacts—and those of the other warehouse developments—overlap directly with the Project’s, and should be considered for their cumulative weight.

The DEIR’s discussion of cumulative impacts regarding vegetative management activities is likewise faulty. Here too, GSFA has taken too narrow a view of cumulative impacts, although in the opposite temporal direction. The DEIR failed to provide sufficient information in the cumulative impacts analysis about ongoing forest management activities, nor did it attempt to predict the scope of probable future projects. It only provided data for a narrow window of past activity, ending in 2021.⁷¹⁰ Notably, that window closed prior to Governor Newsom’s Wildfire and Forest Resilience Action Plan, which called for “an increase to the pace and scale” of wildfire treatments, making it even more likely to be out of step with present and future forest management.⁷¹¹ Because GSFA failed to include a sufficiently comprehensive list of potentially cumulative projects, the DEIR falls short of CEQA.

VIII. Conclusion

Under CEQA, the present DEIR cannot properly form the basis of a final EIR. Recirculation of a DEIR is required “when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review.”⁷¹² Here, GSFA will need to correct the DEIR in the ways described above. After doing so, GSFA must recirculate the DEIR if it chooses to continue with the Project.

However, for the reasons stated here, rather than continue with additional environmental review, GSFA should abandon the Project. The DEIR fails to show how the Project will achieve its primary goal of protecting communities from wildfire. Instead, it demonstrates that the Project will cause significant harm to communities, the climate, forests and wildlife—and is nothing more than another biomass boondoggle.

⁷⁰⁹ Attorney General Rob Bonta, letter to Nicole Moore, Senior Planner for City of Stockton, April 18, 2022.

⁷¹⁰ DEIR 3.0-4-6.

⁷¹¹ State of California, Wildfire and Forest Resilience Action Plan (2021) <https://wildfiretaskforce.org/wp-content/uploads/2022/04/californiawildfireandforestresilienceactionplan.pdf>.

⁷¹² CEQA Guidelines, § 15088.5.

Sincerely,

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