

**COUNTY OF PLACER**  
Community Development/Resource Agency

Michael J. Johnson, AICP  
Agency Director

**PLANNING  
SERVICES DIVISION**

Paul Thompson, Deputy Director

**MEMORANDUM**

**TO:** Honorable Board of Supervisors

**FROM:** Michael J. Johnson, AICP *MJ*  
Agency Director

**DATE:** May 7, 2013

**SUBJECT:** **CABIN CREEK BIOMASS FACILITY (PCPJ 20110376) - THIRD-PARTY APPEAL OF THE PLANNING COMMISSION'S CERTIFICATION OF A FINAL ENVIRONMENTAL IMPACT REPORT AND APPROVAL OF A CONDITIONAL USE PERMIT**

**ACTION REQUESTED**

1. Conduct a public hearing to consider a third-party appeal filed by Kevin Bundy on behalf of the Center for Biological Diversity.
2. Deny the third-party appeal filed by Kevin Bundy on Behalf of the Center for Biological Diversity.
3. Certify the Final Environmental Impact Report including the Addendum for the Cabin Creek Biomass Facility project, adopt the Statement of Findings and adopt the Mitigation Monitoring and Reporting Plan.
4. Approve the Conditional Use Permit to allow for the construction and operation of the Cabin Creek Biomass Facility project, based on the findings set forth in the staff report and subject to the modified Conditions of Approval in Attachment 4.

There is no net County cost associated with these actions.

**BACKGROUND**

The Cabin Creek Biomass Facility project is a proposal to construct and operate a two-megawatt (MW) electric power generation facility at the site of the Eastern Regional Materials Recovery Facility (MRF) and Transfer Station. The facility would utilize gasification technology to convert woody biomass material into a synthesis gas, which would then fuel an internal combustion engine/generator that would produce electricity.

The proposed project would be located on a 3.7-acre site in the southernmost portion of a 148-acre County-owned parcel that is adjoined on the north and west by three other County-owned parcels. The four parcels collectively include 292 acres developed with the Eastern Regional Materials Recovery Facility (MRF) and Transfer Station. The property also includes a former landfill site (approximately 65 acres in size) that was closed and buried in 1995. With the on-site landfill being unavailable for disposal, the MRF and Transfer Station now function to separate, process and deliver recyclable solid wastes to the open market and (in cases of non-recyclable materials) to the Lockwood Regional Landfill in Nevada.

The MRF and Transfer Station buildings, as well as the Placer County Department of Public Works (DPW) road maintenance and Tahoe Area Regional Transit (TART) facilities, are all located within the southern portion of the property. The County DPW and TART facilities consist of vehicle storage and

maintenance facilities, administrative offices, sand storage for road maintenance, and a compressed natural gas (CNG) fueling station for TART buses. The County DPW and TART facilities are located outside of the fenced MRF and Transfer Station facility, as is the 3.7-acre project site. The project would be located adjacent and south of these facilities.

#### Squaw Valley Municipal Advisory Council/North Tahoe Regional Advisory Council

The project was presented as an Action Item to the Squaw Valley Municipal Advisory Council (SVMAC) on December 6, 2012 and to the North Tahoe Regional Advisory Council (NTRAC) on December 13, 2012. The SVMAC took action (5-0) (O'Keefe, Adriani, Lange, Sheehan and Haneveld) to recommend approval of the project to the Planning Commission. The NTRAC also took action (7-0) (Chillemi, Kupec, Straver, McConnell, Hymanson and Vaca) to recommend approval of the project to the Planning Commission.

#### Planning Commission Meeting

The Cabin Creek Biomass Facility project was heard by the Planning Commission at its December 20, 2012 meeting. After considering staff's report and recommendation, which included a discussion of issues set forth in a comment letter submitted by the Center for Biological Diversity, the Planning Commission unanimously adopted a motion (7-0-0-0) to certify the Final Environmental Impact Report and approve the Mitigation Monitoring and Reporting Plan. The Planning Commission also approved the requested entitlement, a Conditional Use Permit to allow for the construction of a biomass electric power generating facility. In reaching this decision, the Planning Commission found that the Project is consistent with the goals and policies in the Placer County General Plan and the provisions of the Placer County Zoning Ordinance, that the project is compatible with the existing and surrounding development of the Cabin Creek site, and the FEIR is complete, adequate and in full compliance with CEQA.

#### **APPEAL**

A third-party appeal (Attachment 2) was filed on December 28, 2012 by Kevin Bundy, on behalf of the Center for Biological Diversity ("appellant"). The appeal challenges the Planning Commission certification of the Final Environmental Impact Report and approval of the Conditional Use Permit for the Cabin Creek Biomass Facility project. The appeal focuses on several perceived deficiencies in the preparation of the EIR and incorporates previous comments, submitted by the Appellant on the Draft and Final EIR for the project. On January 28, 2013, the appellant submitted a second packet of "supplemental information" to further the discussion of the appeal. The Center's appeal letters do not raise new issues. Rather, the appeal letters reiterate comments made in the letters received prior to EIR certification. As summarized in the appeal letters, the Center contends the following:

- 1) "The EIR's description of the Project and its proposed fuel mix are inconsistent and inadequate to support the assumption that all Project fuels otherwise would have been burned in the open. As a result, the EIR's conclusions regarding emissions of greenhouse gases and other air pollutants from the Project lack support."
- 2) "The EIR's assumption that Project fuels otherwise would have been burned in the open at a 95 percent combustion efficiency is unsupported. As a result, the EIR's conclusions regarding the significance of the Project's greenhouse gas emissions are unsupported."
- 3) "The EIR failed to identify and employ a legally adequate 'baseline' for analysis of the Project's environmental impacts." The appeal letters further explain that the baseline refers to the project's contribution to global climate change and the EIR's analysis of greenhouse gas emissions.
- 4) "The EIR fails to adequately disclose and analyze the Project's potential effects on forest management, forests, and habitat. The EIR's conclusions regarding these effects are without adequate support."

## **ADDENDUM TO THE EIR**

Because the majority of the appeal challenges the adequacy of the project's EIR, staff requested the EIR consultant review the above issues in light of CEQA Guidelines Sections 15162(a) and 15164. Section 15164 allows a lead agency to prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162(a) arise. Page 3 of the Addendum outlines these conditions. Based on staff's review of appellant's issues listed above and consultation with the County's environmental consultant it was determined that the appeal does not trigger any of the conditions identified in Section 15162 that would necessitate additional environmental review of the project. The appellant does question certain of the analyses in the EIR and responses to those questions within the context of an Addendum were determined by staff to have merit. As a result, staff directed the environmental consultant to prepare an Addendum to the EIR. The Addendum (Attachment 3) provides responses to each of the issues of the appeal, as summarized above.

## **DISCUSSION WITH APPELLANT**

While most of the responses contained in the Addendum provide clarification of the project EIR analyses and methodologies, staff determined that one issue, control of the project fuel mix, can be further clarified through incorporation of conditions of approval that are consistent with the project objectives. As a result, staff prepared five new Conditions of Approval that were drafted to ensure that the purpose of the facility will be a means of clean disposal and re-use of excess biological material that would have otherwise been piled and burned in the open. As the conditions are linked to the assumptions discussed in the EIR, staff concluded there was merit in a discussion of these conditions within the context of the EIR analysis and thus included this discussion the Addendum.

Upon completion of the Addendum, staff provided a draft of the five new recommended Conditions of Approval for the project to the appellant. After review, the appellant offered a series of modifications to the five conditions and recommended the inclusion of two additional conditions. Following discussion, staff, the applicant and the appellant all came to an agreement with the final seven recommended Conditions of Approval. Although the five original Conditions of Approval presented in the Addendum differ slightly from the revised and expanded list of seven Conditions of Approval, the purpose and substance of the conditions has not changed. With the appellant's and applicant's concurrence, staff recommends the inclusion of the following new conditions of approval for the project (the numbers below coincide with the order of these conditions proposed in Attachment 4 to this report):

2. The Cabin Creek Biomass Facility shall accept only woody biomass material (fuel) that would have otherwise been piled and burned in its place of origin. For purposes of this condition, the term "woody biomass material" is defined and limited to the following:
  - a. Hazardous fuels reduction residuals (woody biomass material that poses a substantial fire threat to human or environmental health),
  - b. Forest thinning and harvest residuals (residual material from ongoing forest management activities that has no, or limited, market value), and
  - c. Clean wildland/urban interface (WUI)-sourced waste materials (small trees, limbs, brush and trimmings) resulting from defensible space clearing projects.

The woody biomass materials may be accepted by the contracted hauler to the facility from either public or private lands subject to the following standards and limitations:

### **Public Lands:**

Woody biomass shall be accepted only if prior written documentation is presented to the hauler that the biomass was collected and piled pursuant to a project approved by all appropriate agencies following full compliance with NEPA and/or CEQA and all other applicable laws. A record of the approval decision and copies of the NEPA/CEQA documents (if applicable) shall be produced prior to collection by the contracted hauler to the facility. The documents shall include written proof that the material would have been piled and burned in the open if not procured as biomass fuel. If the

approval documents are finalized prior to the plant commencing operation and there is no language in the same regarding open burning, the plant may accept the woody biomass with written verification from the approving agencies or USFS that the material otherwise would have been piled and burned in the open.

**Private Property:**

Woody biomass collected from a "Defensible Space Clearance Project" may be accepted by the plant. A "Defensible Space Clearance Project" means an activity designed to clear defensible space from the area immediately surrounding a residence or occupied structure as required or recommended by applicable CALFIRE guidelines or local ordinances and regulations. The private property owner shall verify in writing that the woody biomass would have otherwise been open burned. Verification may be in the form of prior burn permits obtained from the local Air Pollution Control District, provided such burn permits were issued after the later of (i) February 9, 2012, or (ii) the effective date of any subsequent amendment to applicable Air Pollution Control District rules or other local ordinances or rules governing open burning.

3. The applicant shall accept woody biomass deliveries only from contractors with prior written executed agreements with the applicant (or operator of the facility) or haulers who have existing written agreements with a local, state or federal agency (the latter shall be required to file a copy of the agreement with the applicant before beginning deliveries) or directly from local, state or federal agency haulers.

Each hauler shall present a County-prepared form executed and dated by each owner or manager of the property that is the source of the woody biomass contained in that hauler's truck. Said form shall require the following information: source location, property owner or manager contact information, estimated volume/weight, date of pick up and a written certification executed by the property owner (or manager) that the woody biomass otherwise would have been piled and open burned in the place of origin if not sent to the facility. If the hauler transports from multiple locations, the hauler shall obtain a form from each location.

If the hauler does not produce the required form(s), the applicant (or facility operator) shall turn the hauler away and not permit any of the fuel in the truck to be deposited at the facility.

4. No woody biomass material shall be accepted at the facility directly from a private property owner.
5. The following materials shall not be utilized as fuels for the Cabin Creek Biomass Facility:
  - a. Materials initially processed at the Eastern Regional Materials Recovery Facility and Transfer Station at Cabin Creek.
  - b. Materials from urban sources, including but not limited to clean construction/demolition waste and tree trimmings.
  - c. Any materials not meeting the definitions set forth in Condition 2.
6. On or before February 16, 2016, and at five-year intervals thereafter, the County shall review and update the Fuel Procurement Plan for the Lake Tahoe Basin Biomass Energy Generation Facility (TSS Consultants Feb. 16, 2011) ("Fuel Procurement Plan"). Such review shall include, but not necessarily be limited to, the following:
  - a. An evaluation of the accuracy and comprehensiveness of the Fuel Procurement Plan with respect to actual availability of biomass materials,
  - b. An updated evaluation of current demand for biomass materials from any other proposed, new, or existing facilities that may obtain fuels and/or feedstocks from within the Core Fuel Supply Area,

- c. An updated assessment of the amount and sources of biomass materials meeting all Conditions of Approval for the Cabin Creek Biomass Facility that are expected to be available within the subsequent five-year period.
7. Prior to proposing any changes or amendments to these Conditions of Approval, the County shall give at least 45 days' notice to any interested individual or organization, including those who submitted comments during the environmental review process for this Conditional Use Permit (PCPJ 20110376).
  8. Monitoring and Enforcement:
    - a. The applicant (or operator of the facility) shall record and maintain daily information logs sufficient to identify the source of each delivery of woody biomass. This information shall include: source location, estimated volume/weight and date for all incoming loads of biomass material to the site.
    - b. Executed County-prepared forms collected from the haulers shall be maintained together with the name of the person or company responsible for processing and transporting the biomass fuel to the facility.
    - c. By January 31 of each calendar year, the applicant (or operator) shall prepare a report disclosing the characteristics and qualities of all woody biomass delivered to and processed at the facility for the previous calendar year. The information provided in the report shall be sufficiently detailed to allow verification of compliance with all conditions of approval. A copy of said report shall be lodged with the Placer County Community Development/Resources Agency no later than January 31 of each calendar year.
    - d. All of the above information shall be considered public records.
    - e. All of the above shall be maintained by the applicant (or operator of the facility) for a five year period.
    - f. The Placer County Board of Supervisors may, at its discretion, require the report generated in subsection c. be reviewed by the Planning Commission during a public hearing for any given year.
    - g. The Placer County Board of Supervisors may, at its discretion and for any length of time, appoint a volunteer committee to review or monitor the biomass procurement, processing and/or delivery processes to ensure compliance with the conditions of approval.

As discussed at the conclusion of this report, staff has included and provided for the Board's consideration, revised conditions of approval that include the above seven new requirements.

## **DISCUSSION OF ISSUES**

Provided below is a discussion of the issues set forth in the letters of appeal submitted by the Appellant.

### *Lack of Stable, Accurate Description of Proposed Fuel Mix*

The appellant states that both the Draft and Final EIR rely on a description of the fuel mix for the facility that is inconsistent and contradictory, and that this inconsistency does not allow for a reasoned analysis of the project's environmental impacts. In particular, the appellant cites the potential for biomass material that is initially processed at the MRF becoming fuel stock for the project as grounds for challenge to the fuel mix assumption. Because MRF-generated biomass could potentially meet multiple different fates, the appellant is correct to point out that it should not be considered equivalent to open pile burning in terms of its emissions. However, as stated in the DEIR and re-stated in the FEIR, the potential for MRF-generated biomass to be used in the facility would have been limited to extreme winter conditions that exceed six months in duration and are of such magnitude that they completely preclude the production or even transport of material to the site. Winters such as this are rare and the EIR analysis did not account for extreme winters because there is no reliable way to gauge their potential future occurrence rate. Additionally, the alternate fate of MRF-generated woody biomass could have been burning in the Loyaltan (or other regional) biomass facility, or perhaps utilization in another form that would also generate greenhouse gasses. So a measurable increase in GHG emissions associated with sporadic and temporary, or possibly non-existent use of MRF-generated material is unlikely. Nonetheless, in

order to completely eliminate the potential for MRF-generated biomass to be used in the facility, a new Condition of Approval is recommended which would prohibit the use of any MRF-generated biomass in the Cabin Creek Biomass Facility, even during extreme winters.

As stated in the Draft EIR (Section 3.4.3), the biomass material to be utilized in the facility will come from a variety of forest management and fuels reduction activities. Approximately 75 percent of the material will come from hazardous fuel reduction activities (woody biomass removed because it poses a substantial fire threat to human or environmental health). The remaining 25 percent would consist of residuals from forest thinning activities (biomass generated from forest maintenance and restoration activities) and wildland/urban interface (WUI) defensible space clearing activities. The WUI materials are generated the same way that other hazardous fuels reduction materials are generated. The only distinction is that WUI projects are smaller in size, generally totaling less than one-half acre.

Although the above-mentioned description of potential biomass materials has remained consistent throughout the environmental review process, certain potential ambiguities have been clarified and are reflected in the Addendum. The EIR text changes contained in the addendum are primarily focused on the elimination of MRF-generated wood from the project fuel stream and rephrasing of some of the project description language to clarify fuel sourcing. In addition to prohibiting MRF-generated biomass, new Conditions of Approval have been added to address the following: (1) only woody biomass materials (fuel) that would have otherwise been piled and burned in its place of origin will be accepted; (2) contracting requirements for material brought to the facility; and (3) monitoring, reporting, and enforcement requirements for all source material. Staff has determined that these conditions sufficiently address all the fuel sourcing concerns raised by the appellant.

#### Combustion Efficiency of Open Piles Versus Gasification

The EIR assumes that the same amount of material (17,000 bone dry tons (BDT) of woody biomass) would be converted annually in the biomass facility that would have otherwise been burned in open piles at their places of origin. Because both of these methods of disposal release greenhouse gas (GHG) emissions, and because neither of these methods can completely convert all of the material, the EIR quantified and analyzed the resultant air emissions based on the respective residual solid material (i.e. material that is not completely burned or gasified), left over from each method. In concept, if the biomass facility converts 100 percent of its material, but open pile burning only consumes 95 percent of it, then five percent of the material would never have been converted into greenhouse gas emissions. In other words, the portions of sticks, branches and slash that might be left on the ground following a pile burn represent carbon that remains in solid form and does not enter the atmosphere as GHG emissions, whereas that same five percent of material, in a biomass gasification system, would be converted to greenhouse gasses.

To analyze the comparative air emissions resulting from each of these material fates, the EIR conservatively assumes that 100 percent of all material delivered to the gasification system would be converted, thereby releasing full air emissions. In contrast, the EIR assumed that only 95 percent of the material burned in open piles would be converted. The appellant questions the 95 percent combustion efficiency rate used to estimate GHG emissions from open pile burning and states that "this value is not grounded on any data, factor, or analysis". The Center also raised this issue in its comment letter on the Draft EIR and submitted a study suggesting a more accurate combustion efficiency would be between 67 percent and 88 percent. As explained in the Addendum, the combustion efficiencies identified for broadcast prescribed burns, which are the type of burns discussed in the cited study, are not representative of the combustion efficiency of burn piles, which are built to maximize combustion and minimize smoke and are left to dry for one or two seasons (i.e., left to "season") before being ignited. The Center also cited another study to suggest that the combustion efficiency of pile burns ranges between 75 percent and 95 percent (Hardy 1996). Also explained in Response to Comment 10-19, this study neither cites a reference for any of these values nor provides any reasoning to support why the values were selected. Moreover, estimation of combustion efficiency was not the focus of the Hardy study;

rather the study's focus is on how to manage and minimize smoke from the burning of piled woody debris.

The combustion efficiency value of 95 percent was initially determined by emissions calculations performed by Placer County Air Pollution Control District (PCAPCD) staff, and cited in a technical paper co-authored by PCAPCD and peer-reviewed prior to publication in the *Journal of Air and Waste Management*. The 95 percent efficiency of pile burning is also supported by retired Forester Steve Eubanks (personal communication cited in the DEIR) and by current LTBMU Forest Fuels Officer, John Washington. In another study entitled, "Estimating Consumption and Remaining Carbon in Burned Slash Piles," published in the *Canadian Journal of Forest Research*, the authors described using two different field methodologies, sector sampling and a form of line intersecting sampling, to estimate that burning of slash piles released 92 percent to 94 percent of the carbon in each pile to the atmosphere. In another field study, the U.S. Bureau of Land Management, Salt Lake Field Office, reported that burn piles consumed more than 99 percent of their fuel. In addition, a third study by the USFS addressing changes to soil properties from pile burning included visual inspections indicating that fuel consumption from pile burns representative of California mixed-conifer forests and Oregon ponderosa pine forests exceeded 95 percent.

Based on these studies, as well as others cited in the Addendum, which were specifically conducted to estimate the combustion efficiency of pile burns, the EIR's 95 percent value for combustion efficiency is reasonable and adequately substantiated. If the *lowest* value from the combined range identified in the studies cited by the County had been used, which is 92 percent, the GHG efficiency of the proposed biomass facility would be 0.26 metric tons of carbon dioxide-equivalent per megawatt hour (MT CO<sub>2</sub>e/MW-hr), which is also less than the threshold of significance of 0.28 MT CO<sub>2</sub>e/MW-hr.

Therefore, because the combustion efficiency value used in the EIR analysis was calculated by experts, and is supported in the scientific literature, the Center's assertion that the 95 percent combustion efficiency rate used to estimate GHG emissions from open pile burning "is not grounded on any data, factor, or analysis" is without merit.

#### Determination of Baseline for Evaluation of Project Impacts in the EIR

The appellant states that the EIR is flawed because it fails to provide a legally adequate "baseline" for analysis of the project's environmental impacts, because the appellant contends the EIR evaluated the project's climate change and greenhouse gas impacts solely in relation to policies and plans (specifically AB-32 and the Renewable Energy Portfolio), and not to any clearly articulated baseline consideration.

As stated in the Final EIR, and restated in the Addendum, impacts to global climate change are inherently cumulative. That is, no single project can measurably contribute to a noticeable incremental change in the global average temperature, or to global, local or micro-climates. Therefore, the EIR focuses on whether GHG emissions from the project would "conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses."

This issue was first presented in response to the release of the Draft EIR and the Final EIR provides a response to the same. Response to comment 10-16 offers clarification for the rationale that consistency with adopted policy (AB-32) is an appropriate measure for the determination of a project's impacts to climate change because: 1) consistency with AB-32 takes advantage of an inter-governmental, global consortium of scientists to develop a methodology of analysis and evaluation and, 2) the project EIR provides detailed discussion of the precise levels of emissions and compares those emissions with the avoided emissions, based on analysis of ongoing forest management practices and the quantification of known, and conservatively based assumptions of future open pile burns in surrounding forest lands.

Overall, the greenhouse gas analysis contained in the EIR is soundly based on; 1) a comprehensive approach, considering both direct and indirect sources of GHG associated with the project, which is

consistent with the California Office of Planning and Research (OPR) recommendation that lead agencies make a "good faith effort" to estimate a project's GHG emissions under CEQA, 2) transparent calculations and methodologies that are fully described, using models recommended and/or developed by PCAPCD, the California Air Resources Board (CARB), the U.S. EPA and the Intergovernmental Panel on Climate Change (IPCC), and 3) a conservative threshold of significance and conservative emissions estimates, as outlined in the Addendum.

#### Disclosure of Project Impacts on Forests, Forest Management and Habitat

The letter of appeal includes only a single reference to project impacts on forests. In this reference, the appellant cites potential incentives for USFS and other land owners to increase their levels of forest thinning as a result of the project's ability to efficiently remove piles of biomass material following forest maintenance/hazardous fuels reduction activities. In response to this comment, the Appellant is directed to FEIR (Response to Comment 10-23), which states that the project does not generate woody biomass, nor increase the demand for it. The project simply relies on material that is already being generated and, by all accounts, will continue to be generated through ongoing USFS management activities that undergo their own CEQA and NEPA environmental review processes.

As described in the Draft EIR, the USFS develops forest management plans based on existing resources and desired future conditions. The objectives identified in the forest management plans determine the actions that the USFS takes at a local, management-unit level. Forest management projects are designed to fulfill a specific objective or combination of multiple objectives, such as hazardous fuels reduction, enhancement of wildlife habitat, scenic integrity, or stand-level management. Other land managers within the fuel supply area for the proposed facility, including California Tahoe Conservancy and California State Parks, have similar planning processes to develop management plans for their land. The operation of a biomass facility would not change the planning process for these agencies. The land managers would continue to identify objectives for forest management based on desired future conditions of the forest. Supplying biomass fuel to the proposed facility is not a management objective or priority for the Tahoe National Forest (TNF) or Lake Tahoe Basin Management Unit (LTBMU) and it is not reasonably foreseeable to be adopted by any of these agencies as a management goal in the future because it does not help to fulfill their missions.

Additionally, as stated in the FEIR (Response to Comments 10-23), the cost per acre for forest management projects is significantly more than the value of biomass chips that would be sent to the facility. Therefore, it is not reasonable to conclude there will be an economic incentive to increase the pace of forest management projects.

#### Purpose of the Master Stewardship Agreement

Placer County has signed a Master Stewardship Agreement with the USFS. The purpose and primary objective of the Tahoe Basin Biomass Master Stewardship Agreement is to reduce the number of acres of fuels burned annually on National Forest System (NFS) lands within the Lake Tahoe Basin by entering into a stewardship agreement with Placer County for removal of biomass from NFS lands. A secondary focus of the Master Stewardship Agreement is to increase the effectiveness of fuels reduction projects with follow up mastication treatments by increasing the amount of biomass removed from mechanically harvested units. This secondary objective would not be realized by the proposed project, because the project is limited in scope to material that would otherwise be open burned as further enforced through the new recommended conditions of approval listed above. The biomass removed under this project would be generated during implementation of fuels reduction and forest health treatments currently being conducted and/or planned within the wildland urban interface area on NFS lands.

#### **CONCLUSION**

As detailed in this report, staff concludes there is no merit to any of the issues presented in this appeal. Staff has found that the project is consistent with the goals and policies in the Placer County General Plan, and that the use is consistent with the surrounding development and with the purpose and intent of

the FOR (Forest) zone district. Staff has also concluded that the environmental impact report and clarifications presented in the Addendum are adequate and complete and prepared in full compliance with CEQA. Therefore staff recommends the Board deny the appeal, certify the project's Final Environmental Impact Report and Addendum, adopt the MMRP and approve the Conditional Use Permit to allow for the construction and operation of the Cabin Creek Biomass Facility project. Should the Board wish to proceed based on staff's recommendations, staff also recommends and has included for the Board's consideration revised conditions of approval (Attachment 4) that incorporate the seven new conditions formulated cooperatively by applicant, appellant and staff as discussed above.

## **RECOMMENDATION**

Staff recommends the Board of Supervisors take the following actions:

1. Deny the third-party appeal filed by Center for Biological Diversity
2. Certify the Final Environmental Impact Report and Addendum to the EIR for the Cabin Creek Biomass Facility (collectively referred to as "FEIR"), adopt the Statement of Findings and adopt the Mitigation Monitoring and Reporting Plan based on the following findings:
  - A. The FEIR has been prepared in accordance with all requirements of CEQA and the Guidelines.
  - B. The Board of Supervisors has conducted a public hearing during which the Board has considered all of the oral and written testimony and evidence in this matter. The Board has considered and independently reviewed all written documents, including the Draft and Final EIRs, the Addendum, the Findings of Fact, the staff reports, written correspondence and any other written or oral evidence received during the course of this appeal. Based on all such testimony and substantial evidence in the record, the Board concludes there is no significant information that would necessitate recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5, subd. (a), or the preparation of a subsequent EIR pursuant to Section 15162(a) prior to the Board taking action to certify the FEIR.
  - C. The Board of Supervisors finds the preparation of the Addendum to be appropriate under CEQA Guidelines Section 15164 as the addendum is limited to clarification and elaboration of the analysis found in the Draft and Final EIR and none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
  - D. The Board of Supervisors hereby certifies the FEIR as complete, adequate and in full compliance with CEQA as a basis for considering and acting upon the Project approval, and exercising its independent judgment, makes the specific findings with respect to the FEIR as set forth in Attachment 6.
  - E. All mitigation measures proposed in the FEIR are incorporated into the Mitigation Monitoring and Reporting Program, which is hereby adopted as set forth in Attachment 7. Said MMRP will implement all mitigation measures adopted with respect to the development pursuant to all of the Project approvals. The mitigation measures have been incorporated into the conditions of approval and thus become part of and limitations upon the entitlements conferred by the Project approvals.
3. Approve a Conditional Use Permit for the Cabin Creek Biomass Facility project, subject to the modified Conditions of Approval contained in Attachment 4 (including the seven new Conditions of Approval), based on the following findings:
  - A. The proposed use is consistent with all applicable provisions of Chapter 17 of the Placer County Code. The proposed use (electrical generating plant) is an allowable land use in the FOR-SP

(Forest, combining Special Purpose) zone district with approval of a conditional use permit as set forth in Article 17.06, Section 17.06.050.D. The proposed use also complies with all setback, parking, and other applicable development standards set forth in Article 17.54.

- B. The proposed use is consistent with the objectives, policies, general land uses and programs as specified in the Placer County General Plan (PCGP). The project is located directly adjacent to the existing Eastern Regional Materials Recovery Facility and Transfer Station and utilizes land that is already in a primarily developed area which represents an efficient use of land consistent with Policy 1.A.1. Policy 1.E.1 requires that new industrial development is sufficiently buffered from residential areas, that it would result in minimal impacts to scenic routes and public vistas and that adequate infrastructure and services exist on the site. As mentioned in the staff report, the project site, is served by adequate infrastructure (roads, electricity, water, sewer), it is not adjacent to any residential areas, nor is it visible from any scenic route or public vista. Policy 1.K.5 requires new roads, parking and utilities be designed to minimize visual impacts. This project site is not in a visually sensitive area and public views of the site are limited. In addition, electrical utilities will be installed underground. The project-related noise levels will not exceed applicable county standards at the nearest sensitive receptor and will comply with all applicable noise standards established in the PCGP (Policies 9.A.2, 9.A.5, 9.B.3).
- C. The establishment, maintenance or operation of the proposed use will not be detrimental to the health, safety, and general welfare of people residing or working in the neighborhood of the proposed use, and will not be detrimental or injurious to property or improvements in the neighborhood or the general welfare of the County. The project site is located within the larger 290-acre Eastern Regional MRF and Transfer Station site and directly adjacent to the existing Eastern Regional Materials Recovery Facility (MRF) and Transfer Station currently used to handle municipal recyclable materials. In addition, the project is located adjacent to the Tahoe Area Regional Transit maintenance and storage facility. The County acquired the Eastern Regional MRF and Transfer Station site in 1994 for use as a solid waste landfill (now closed), transfer station and materials recovery facility. Therefore, the inclusion of the proposed use on this larger site that is already largely developed with similar and compatible land uses allows for an efficient combination of County waste and material recovery services at one site. By locating the proposed use on a primarily developed industrial site, potential conflicts that could occur in areas with residential, educational, religious or recreational uses are avoided. In addition, the proposed site contains minimal forestry resources and avoids other areas of substantial forestry resources. Adequate public services and transportation routes exist for the proposed use and no scenic corridors will be impacted by the establishment of the proposed use.

**ATTACHMENTS:**

- Attachment 1 – Site Plan
- Attachment 2 – Appeal and Supplemental Information
- Attachment 3 – Addendum to the EIR
- Attachment 4 – Recommended Amended Conditions of Approval
- Attachment 5 – Planning Commission Staff Report (exhibits removed)
- Attachment 6 – Statement of Findings
- Attachment 7 – Mitigation Monitoring and Reporting Plan
- Attachment 8 – Draft and Final EIR (provided under separate cover and available at Clerk of the Board)

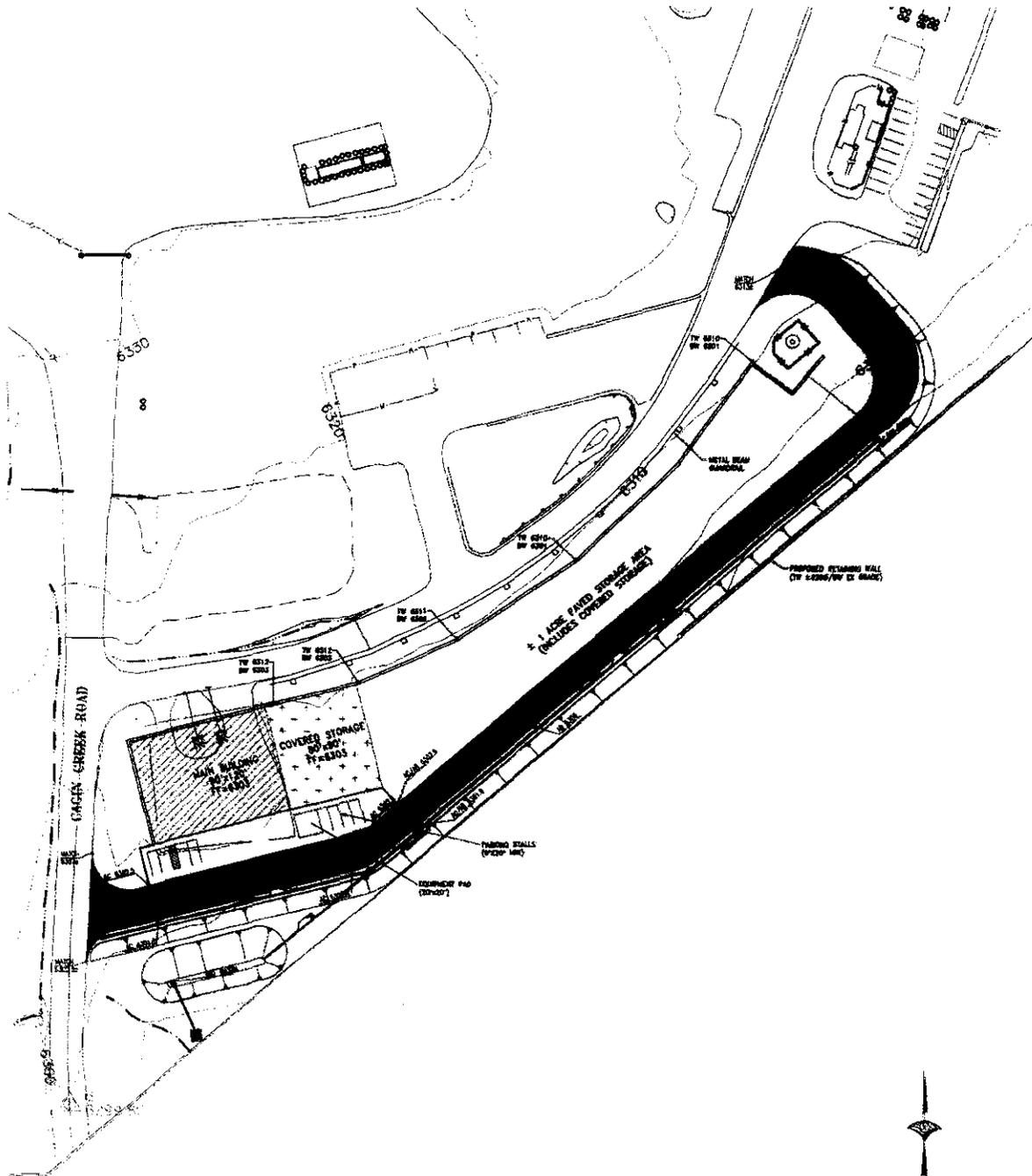
cc: Appellant – Kevin Bundy, Center for Biological Diversity  
Applicant – Brett Storey, Senior Management Analyst  
Sarah Gillmore – Engineering and Surveying Division  
Stephanie Holloway – Department of Public Works  
Janelle Heinzler – Special Districts  
Justin Hansen – Environmental Health Services

Andy Fisher – Placer County Parks Division  
Tom Thompson – Air Pollution Control District  
Brad Albertazzi – Placer County Fire/CDF  
Karin Schwab – County Counsel's Office  
Paul Thompson – Deputy Planning Director  
George Rosasco – Supervising Planner

SITE LAYOUT AND TOPO FOR  
**CABIN CREEK BIO GEN FACILITY**  
 PLACER COUNTY

PLACER COUNTY CALIFORNIA

APRIL 2011





# PLACER COUNTY PLANNING SERVICES DIVISION

AUBURN OFFICE  
3091 County Center Dr, Auburn, CA 95603  
530-745-3000/FAX 530-745-3080  
Website : [www.placer.ca.gov](http://www.placer.ca.gov)  
E-mail : [planning@placer.ca.gov](mailto:planning@placer.ca.gov)

TAHOE OFFICE  
775 North Lake Blvd., Tahoe City, CA 96146  
PO Box 1909, Tahoe City, CA 96145  
530-581-6280/FAX 530-581-6282

## PLANNING APPEALS

The specific regulations regarding appeal procedures may be found in the Placer County Code, Chapters 16 (Subdivision), 17 (Planning and Zoning), and 18 (Environmental Review Ordinance).

### -----OFFICE USE ONLY-----

Last Day to Appeal \_\_\_\_\_ (5 pm)      Appeal Fee \$ \_\_\_\_\_  
Letter \_\_\_\_\_      Date Appeal Filed \_\_\_\_\_  
Oral Testimony \_\_\_\_\_      Receipt # \_\_\_\_\_  
Zoning \_\_\_\_\_      Received by \_\_\_\_\_  
Maps: 7-full size and 1 reduced for Planning Commission items      Geographic Area \_\_\_\_\_

### -----TO BE COMPLETED BY THE APPLICANT-----

- Project name: Cabin Creek Biomass Facility Project
- Appellant(s): Center for Biological Diversity      (415) 436-9682 x313      (415) 436-9683  
    Telephone Number      Fax Number  
 Address: 351 California Street, Suite 600      San Francisco      CA      94104  
    City      State      Zip Code
- Assessor's Parcel Number(s): 080-010-031, 080-818-033, 080-070-017, 080-070-016

- Application being appealed (check all those that apply)      Application Number  
      Administrative Approval  
      Use Permit      PCPJ 20110376  
      Parcel Map  
      General Plan Amendment  
      Specific Plan  
      Environmental Review      State Clearinghouse #2011122032  
      Minor Boundary Line Adjustment  
      Tentative Map  
      Variance  
      Design Review  
      Rezoning  
      Rafting Permit  
      Planning Director Interpretation \_\_\_\_\_ (date)  
      Other: \_\_\_\_\_

- Whose decision is being appealed: Planning Commission (see reverse)
- Appeal to be heard by: Board of Supervisors (see reverse)
- Reason for appeal (attach additional sheet if necessary and be specific):  
Please see enclosed letter.

(If you are appealing a project condition only, please state the condition number)

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Note: Applicants may be required to submit additional project plans/maps.

Signature of Appellant(s)

  
Kevin P. Sundry, Center for Biological Diversity

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**PLACER COUNTY ZONING ORDINANCE SECTION 17.60.110**

Rulings made by the below are considered by the Planning Commission:

- Planning Director (interpretations)
- Zoning Administrator
- Design/Site Review Committee
- Parcel Review Committee - other than road improvements which should be appealed to the Director of Public Works
- Environmental Review Committee

Rulings made by the Planning Commission are appealed directly to the Board of Supervisors.

Rulings made by the Development Review Committee are appealed to the hearing body having original jurisdiction

**Note: An appeal must be filed within 10 calendar days of the date of the decision. Appeals filed more than 10 days after the decision shall not be accepted by the Planning Division.**

**For exact specifications on an appeal, please refer to Section 17.60.110 of the Placer County Code.**



CENTER for BIOLOGICAL DIVERSITY

December 27, 2012

*Via Federal Express*

Michael Johnson, Planning Director  
CDRA Planning Services Division  
3091 County Center Drive, Suite 140  
Auburn, CA 95603

**Re: Appeal of December 20, 2012 Planning Commission Decisions:  
Environmental Impact Report and Conditional Use Permit  
for the Cabin Creek Biomass Facility Project  
(SCH No. 2011122032; CUP No. PCPJ 20110376)**

Dear Mr. Johnson:

Pursuant to Placer County Code sections 17.60.110 and 18.32.010, the Center for Biological Diversity hereby appeals the Placer County Planning Commission's December 20, 2012 certification of the Environmental Impact Report ("EIR") and approval of Conditional Use Permit No. PCPJ 20110376 ("CUP") for the Cabin Creek Biomass Facility Project ("Project"). A check in the amount of \$529.00 is enclosed per the Placer County Planning Department Fee Schedule (effective July 1, 2012).

The Center is appealing the Planning Commission's decisions because the EIR for this Project does not comply with the California Environmental Quality Act. As a result of this non-compliance, the Planning Commission's approval of the Project and CUP, and its associated findings, were not consistent with law. Detailed factual and legal grounds for the appeal are stated in the Center's September 10, 2012 comments on the Draft EIR and the Center's December 19, 2012 comments to the Planning Commission on the Final EIR, Conditional Use Permit, and associated findings and staff report for the Project. Those letters are hereby incorporated by reference.

Grounds for appeal identified in those letters include but are not limited to the following:

- The EIR failed to identify and employ a legally adequate "baseline" for analysis of the Project's environmental impacts.
- The EIR's description of the Project and its proposed fuel mix are inconsistent and inadequate to support the assumption that all Project fuels otherwise would have been burned in the open. As a result, the EIR's conclusions regarding emissions of greenhouse gases and other air pollutants from the Project lack support.

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Mr. Michael Johnson, Planning Director  
Re: Appeal of Planning Commission Decisions; Cabin Creek Biomass Facility Project  
December 27, 2012

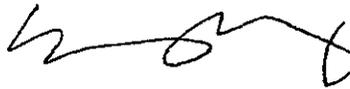
- The EIR's assumption that Project fuels otherwise would have been burned in the open at a 95 percent combustion efficiency is unsupported. As a result, the EIR's conclusions regarding the significance of the Project's greenhouse gas emissions are unsupported.
- The EIR fails to adequately disclose and analyze the Project's potential effects on forest management, forests, and habitat. The EIR's conclusions regarding these effects are without adequate support.

A copy of the Center's December 19, 2012 letter is enclosed. The Center's September 10, 2012 comments and exhibits were reproduced in the Final EIR for the Project and thus are already in the County's possession. Any further written material for the Board's consideration will be provided within 30 days of the date of filing of this appeal pursuant to Placer County Code section 17.60.110(C)(1).

Please notify me when the hearing on this appeal is scheduled. Please also direct a receipt for payment of the appeal fee to my attention at the following address: Kevin Bundy, Center for Biological Diversity, 351 California Street Suite 600, San Francisco, CA 94104.

Thank you very much for your consideration. Please feel free to contact me at (415) 436-9682 x313 or [kbundy@biologicaldiversity.org](mailto:kbundy@biologicaldiversity.org) with any questions.

Sincerely,



Kevin P. Bundy  
Senior Attorney

Encl.



CENTER for BIOLOGICAL DIVERSITY

December 19, 2012

Via email: [KHeckert@placer.ca.gov](mailto:KHeckert@placer.ca.gov)

Placer County Planning Commission  
c/o Kathi Heckert, Senior Board/Commission Clerk  
Office of Planning Services Division  
3091 County Center Drive Suite 140  
Auburn, California 95603

**Re: Cabin Creek Biomass Facility Project  
Final Environmental Impact Report and Conditional Use Permit  
(CUP No. PCPJ 20110376; December 20, 2012 Agenda Item No. 3)**

Dear Chairman Moss and Members of the Planning Commission:

The Center for Biological Diversity (“Center”) submits the following comments on the Final Environmental Impact Report (“EIR”), proposed Conditional Use Permit (“CUP”), and associated Staff Report for the Cabin Creek Biomass Facility Project (“Project”). The Center is a non-profit environmental organization dedicated to the protection of imperiled species, their habitats, and the environment through science, policy, and environmental law. The Center has more than 450,000 members and online activists throughout the United States, including many members in the Lake Tahoe and Sierra Nevada regions. The goal of the Center’s Climate Law Institute is to reduce U.S. greenhouse gas emissions and other air pollution to protect biological diversity, the environment, and public health. Specific objectives include securing protections for species threatened by the impacts of global warming, ensuring compliance with applicable law in order to reduce greenhouse gas emissions and other air pollution, and educating and mobilizing the public on global warming and air quality issues.

Biomass energy generation, although often touted as a “clean” alternative to fossil-fueled generation, has potentially significant environmental impacts of its own. Absent proper consideration of these impacts—particularly air pollution, greenhouse gas emissions, and effects on forest habitat associated with the harvest and combustion of woody biomass—decision-makers and the public may be misled as to the benefits and environmental drawbacks of a biomass project.

As set forth in the Center’s September 10, 2012 comments on the Draft EIR, hereby incorporated by reference, the EIR for this Project fails to meet the minimum requirements of the California Environmental Quality Act (“CEQA”). The deficiencies identified in our comments on the Draft EIR have not been adequately addressed or corrected in the Final EIR. In particular, the Final EIR: (1) lacks a legally adequate “baseline” for analysis of the Project’s climate impacts; (2) relies on unsupported

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assumptions in concluding that the Project's greenhouse gas emissions are less than significant; and (3) lacks a stable and consistent description of the Project and the proposed biomass fuel mix sufficient to support reasoned analysis, comment, and decision-making. As a result of the deficiencies in the Final EIR, the proposed CEQA findings of approval also lack support.

In short, the County cannot approve this Project unless and until it prepares an EIR that complies fully with CEQA. Specific deficiencies in the EIR are addressed in detail below.

### I. Legal Requirements

Before the County may approve the Project, it must certify an EIR that complies with CEQA's substantive and procedural requirements. *See generally* Public Resources Code section 21000 *et seq.*; *see also* 14 Cal. Code Regs. § 15000 *et seq.* ("CEQA Guidelines"). An EIR is "the heart of CEQA." *Laurel Heights Improvement Ass'n v. Regents of University of California*, 47 Cal. 3d 376, 392 (1988) (citations omitted) ("*Laurel Heights I*"). It serves as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action. Because the EIR must be certified or rejected by public officials, it is a document of accountability." *Id.* (citations and internal quotations omitted). Where an EIR fails to fully and accurately inform decision-makers, and the public, of the environmental consequences of proposed actions, it does not satisfy the basic goals of the statute. *See* Pub. Res. Code § 21061.

The discussion of a proposed project's environmental impacts is the core of an EIR. *See* CEQA Guidelines § 15126.2(a) ("[a]n EIR shall identify and focus on the significant environmental effects of the proposed project"). One of the "basic purposes" of CEQA is to "[i]nform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities." CEQA Guidelines, § 15002(a)(1). To this end, an EIR must contain facts and analysis, not just an agency's bare conclusions. *Citizens of Goleta Valley v. Bd. of Supervisors*, 52 Cal. 3d 553, 568 (1990). Public agencies must make a good-faith effort to disclose all they reasonably can about a project and its effects. *See* CEQA Guidelines §§ 15144, 15151.

Further legal requirements are discussed as necessary below.

**II. The Final EIR Does Not Adequately Respond to Comments or Address Deficiencies Identified in the Draft EIR.**

**A. The EIR Fails to Identify a Legally Inadequate “Baseline” for Evaluation of the Project’s Greenhouse Gas Emissions.**

As discussed in the Center’s prior comments, the Draft EIR failed to identify and employ a legally adequate “baseline” for analysis of the Project’s contribution to climate change. The Final EIR fails to resolve this deficiency.

Identification of a “baseline” for environmental analysis—the benchmark against which a project’s impacts are measured and their significance determined—is critical to ensuring accurate and complete disclosure and mitigation of environmental effects. *See Communities for a Better Env’t v. S. Coast Air Quality Mgmt. Dist.*, 48 Cal. 4th 310, 315 (2010) (“To decide whether a given project’s environmental effects are likely to be significant, the agency must use some measure of the environment’s state absent the project, a measure sometimes referred to as the ‘baseline’ for environmental analysis.”) The “physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published . . . will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.” CEQA Guidelines § 15125(a) (emphasis added); *see also id.*, § 15162.2(a) (agency normally should limit impact assessment to “changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published”). Without “an adequate baseline description . . . analysis of impacts, mitigation measures and project alternatives becomes impossible.” *County of Amador v. El Dorado County Water Agency*, 76 Cal. App. 4th 931, 953 (1999).

The Final EIR explains that in lieu of identifying a baseline grounded in existing conditions, the EIR evaluated the Project’s impacts solely in relation to policies and plans—AB 32 and the “Renewable Energy Portfolio.” Final EIR at 2-89.<sup>1</sup> This is improper for two reasons.

First, as described in our comments on the Draft EIR, CEQA requires an evaluation of a project’s physical impact on the environment, not merely its consistency with policies and plans. In response to this comment, the Final EIR in essence simply reiterates that the Project “would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs in the electricity sector” and states in conclusory fashion that its incremental emissions would not be cumulatively considerable. Nowhere in the EIR, however, are the Project’s emissions evaluated in relation to anything other than an efficiency metric derived from the AB 32 Scoping Plan.<sup>2</sup> Accordingly, the Final EIR still evaluates only the Project’s consistency

<sup>1</sup> It is not clear whether the reference to “Renewable Energy Portfolio” means “Renewable Portfolio Standard” or “Renewable Energy Standard.”

<sup>2</sup> The Final EIR claims that it is “not the case” that the Project was evaluated solely in light of its consistency with the AB 32 Scoping Plan. Final EIR at 2-89. But according to

with policies and plans, and nowhere adequately evaluates its actual effect on the physical environment.

The Final EIR's approach is not justified by CEQA Guidelines provisions relating to analysis of greenhouse gas impacts. Final EIR at 2-89; *see* CEQA Guidelines § 15064.4. Although this section of the Guidelines references statewide plans for the reduction of greenhouse gases as a possible "factor" agencies "should consider" in evaluating the significance of emissions, nothing in this section countenances an approach that focuses solely on a project's consistency with policies and plans, to the exclusion of any analysis of its effect on actual physical conditions. Indeed, any determination made under this section must be "consistent with the provisions in [Guidelines] section 15064," CEQA Guidelines section 15064.4(a), which in turn expressly requires consideration of both direct and indirect "physical changes in the environment." CEQA Guidelines §§ 15064(d). Again, as stated in our comments on the Draft EIR, evaluation of a project's consistency with policies and plans—which is all that the EIR's efficiency metric accomplishes here—is insufficient to meet CEQA's requirements.

Second, the EIR's evaluation of the significance of the Project's greenhouse gas emissions lacks any comparison to any clearly articulated baseline. The EIR simply fails to evaluate these emissions' significance in light of "changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published." CEQA Guidelines § 15126.2(a). Nor does the EIR project any clear future baseline against which the Project's impacts could be evaluated. The primary source for the EIR's efficiency metric calculations was an Air Resources Board document entitled "Status of Scoping Plan Recommended Measures," cited in the Draft EIR as "ARB 2011b". *See* Draft EIR at 10-10; App. D at 18 ("Efficiency of Electricity Production"). Although the ARB document discusses updates to the AB 32 "business as usual" baseline, it is not clear what if any role this baseline plays in the EIR's evaluation of the Project's effects. The baseline must be described, and supported by adequate analysis, in the EIR itself. *See Save Our Peninsula Committee v. Bd. of Supervisors*, 87 Cal. App. 4th 99, 119-20 (2001). This EIR never articulates a baseline for analysis, and as a result never evaluates the significance of the Project's greenhouse gas emissions in relation to a proper baseline.

Reliance on a projected future baseline, in the absence of any comparison to existing conditions, would be improper in any event, as demonstrated by recent case law. *See Sunnyvale West Neighborhood Ass'n v. City of Sunnyvale*, 190 Cal. App. 4th 1351 (2010). Published decisions upholding the use of a projected future baseline have done

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the Draft EIR, the efficiency metric used as the threshold of significance in the Draft EIR was derived entirely from the AB 32 Scoping Plan. Draft EIR at 10-10. Aside from the EIR's reference to the Renewable Portfolio Standard—which itself has been incorporated into the AB 32 Scoping Plan—the Final EIR does not identify any other threshold that was used for evaluation.

so only in the context of an analysis that also includes a comparison to existing conditions. See *Pfeiffer v. City of Sunnyvale*, 200 Cal. App. 4th 1552 (2011). The one appellate decision upholding exclusive reliance on comparison to a future baseline has been depublished and is currently under review by the Supreme Court. *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, 205 Cal. App. 4th 552 (2012), review granted and depublished (Cal. Aug. 8, 2012). There is, at present, no legal support for using a projected future baseline in the absence of analysis based on existing conditions. To the extent the EIR's efficiency threshold implicitly relies on a future projection of baseline conditions, it does so improperly.

**B. The EIR Relies Exclusively on Unsupported and Conclusory Assumptions in Concluding that the Project's Contribution to Climate Change is Less than Significant.**

Even if the EIR's use of an efficiency metric based on the AB 32 Scoping Plan as a threshold of significance were proper—which, as described above, it is not—its conclusions regarding the significance of the Project's greenhouse gas emissions would still lack support. The County acknowledges that the assumption that “all biomass fuel consumed by the facility would otherwise be open burned . . . is critical in the calculation of the facilities [*sic*] GHG efficiency.” Final EIR at 2-92. Yet the Final EIR, like the Draft EIR, provides only conclusory statements—and no actual evidence—in support of this assumption. As a result, the EIR's conclusions fail to satisfy CEQA's requirements.

First, the Final EIR continues to rely on the assumption that all forest-sourced materials hauled to the biomass plant would otherwise have been burned in the open, Final EIR at 2-93, despite numerous other statements in the EIR making clear that not all forest-sourced materials are disposed of by burning. See, e.g., Draft EIR at 18-33 (“In the absence of the project, the residual forest material would normally be burned in piles, chipped in place, or otherwise treated on site.”), 18-34 (“The proposed Cabin Creek facility would provide a disposal option in addition to pile burning, masticating, or chipping.”). The conclusory statement in the Draft EIR that “only biomass that would otherwise be open burned would be hauled to the biomass plant” is just that—a conclusory statement—that actually conflicts with other assertions in the EIR. Similarly unsubstantiated—and also inconsistent with the claim that only fuels otherwise slated for open burning would be hauled to the plant—is the EIR's assertion that an “equivalent” amount of biomass as that hauled to the Project would otherwise be burned in the open. Although open burning may be the “most common” form of disposal for slash generated by fuels reduction and thinning projects, see Final EIR at 2-92, nothing in the EIR suggests that it is the *exclusive* form of disposal. In any event, as discussed below, nothing in the EIR or the proposed conditions of approval limits the Project's fuel mix to these materials; rather, the EIR contemplates using fuels from an unspecified “variety of sources.”

Second, the Final EIR offers no evidence to support the Draft EIR's unsubstantiated assumption that open burning would achieve 95 percent combustion efficiency. This assumption is predicated solely on a further assumption—namely that

“forest contractors who burn their piles of forest slash seek to burn as much of the material as possible.” Final EIR at 2-93. Nowhere does the EIR explain how this assumption regarding the intent of forest project managers translates into a firm 95 percent combustion efficiency in practice.

The 95 percent figure is likely too high. As shown in a U.S. Forest Service document setting forth guidelines for estimating air pollution from burn piles, combustion efficiencies range from 75 to 95 percent, with most Western smoke management programs recommending the assumption that 85 or 90 percent of fuels would be consumed in a burn pile.<sup>3</sup> These guidelines make clear that expert judgment and experience must be used in estimating combustion efficiency.<sup>4</sup> Yet the EIR provides no basis in expert judgment or experience for choosing the 95 percent figure.<sup>5</sup> Incredibly, the Final EIR faults the Forest Service document for a lack of substantiation—effectively rejecting guidelines prepared by experts in the very government agency from which it plans to obtain the majority of the Project fuels in favor of an unsubstantiated and conclusory assumption derived from the purported intent of forest project managers.

As set forth in our comments on the Draft EIR, the margin for error here is very narrow. If a mere 5 percent of Project fuels would not otherwise have been burned in the open, or the combustion efficiency of burn piles falls short by just five percentage points, then the Project’s greenhouse gas emissions would fail to achieve the efficiency threshold adopted in the EIR. The EIR’s conclusion that the Project’s greenhouse gas emissions are less than significant therefore lacks any solid factual support.

**C. The Final EIR Lacks a Stable, Accurate Description of the Project’s Proposed Fuel Mix.**

Our comments on the Draft EIR pointed out that the document’s description of the biomass fuel sources for the Project was inconsistent, internally contradictory, and inadequate to support reasoned analysis of the Project’s environmental impacts. Nothing in the Final EIR’s responses to those comments or revisions to the Draft EIR rectifies these inadequacies.

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<sup>3</sup> Colin C. Hardy, *Guidelines for Estimating Volume, Biomass, and Smoke Production for Piled Slash*, U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Research Station, Gen. Tech. Rep. PNW-GTR-364 at 13 (1996) (attached as Ex. 21 to the Center’s comments on the Draft EIR).

<sup>4</sup> Id. (“Experience and expert knowledge must be used to determine the most appropriate value for percentage of consumption.”)

<sup>5</sup> The Final EIR states that Placer County APCD staff “have indicated that open pile burns in the semi-arid Sierra Nevada mountains are commonly reported and observed by Air District inspectors to consume essentially all of the material when the pile is stacked to allow for high temperature flaming.” Final EIR at 2-93. Nothing in this equivocal, highly qualified string of assertions supports the use of a 95 percent combustion efficiency figure for all open burning.

Indeed, the Final EIR simply reiterates much of the Draft EIR's contradictory information as to the sources and characteristics of the proposed fuel mix. The Final EIR continues to "assume" that "75 percent of the facility's fuel usage would be sourced from hazardous fuels treatment activities, with the balance being made up of forest thinning residuals and WUI-sourced materials." Final EIR at 2-78, 3-3. The document also reiterates that "the Applicant proposes to procure only forest-sourced material." *Id.* at 2-76; Draft EIR at 3-13.

Other statements in the EIR, however, suggest otherwise. The EIR concedes that fuel for the Project would come from "*a variety of sources including forest-sourced material*" from hazardous fuels activities, forest thinnings, and WUI waste. Final EIR at 2-76, 3-2 (emphasis added). This "variety" of sources thus merely "includes" the materials that the EIR assumes will be burned; it does nothing to limit Project fuels to these materials.

Indeed, the EIR appears to have been drafted carefully to allow the Project flexibility to use non-forest-sourced materials as fuel, while analyzing the Project's impacts in accordance with the far narrower (and more favorable to the Project) assumption that only forest-sourced materials would be used. Response 10-3a also confirms that wood waste material currently processed at the Material Recovery Facility ("MRF") could be available as fuel provided it meets general fuel specifications (e.g., standards for high heating value, moisture and ash content). Final EIR at 2-75; *see also* CEQA Findings at 3 (Staff Report page 35) ("As needed, additional fuel for the plant (potentially during extended winters) could include wood waste materials (forest waste biomass) already being processed at the Eastern Regional MRF and Transfer Station."). The Final EIR's revisions to the Draft EIR—purportedly adopted to clarify the use of urban waste materials—are themselves ambiguous, and could be read as precluding only use of *treated* urban wood waste while allowing "clean" urban materials to be used. Final EIR at 2-78, 3-4 ("The facility would not accept any urban waste from building materials or other potential sources that have been treated (e.g., painted or pressure-treated wood).").

These ambiguities preclude informed analysis of and comment on the Project's likely environmental effects. As discussed above, the EIR's conclusions regarding the Project's greenhouse gas emissions depend entirely on the assumption that Project fuels would otherwise have been burned in the open. Yet the fuel mix actually described in the EIR is not limited to fuels that justify use of this assumption. It is not clear, for example, that materials currently processed at the MRF, or materials derived from any one of the "variety" of other unspecified sources cited in the EIR, would otherwise be disposed of by burning if not used as fuel for the Project. To the extent *any* Project fuels would not otherwise have been burned in the open, the EIR's assumptions regarding avoided greenhouse gas emissions are unsupported, and its conclusions regarding the significance of those emissions are not grounded in fact.

These ambiguities also preclude reasoned analysis of the potential effects of using MRF-processed materials as Project fuels. The EIR acknowledges that this is possible.

Placer County Planning Commission  
Re: Cabin Creek Biomass Facility Project Final EIR and Proposed CUP  
December 19, 2012

The EIR also acknowledges that some of this material is currently being used as fuel by other biomass facilities. Yet the EIR's discussion of this issue is undermined by multiple contradictory statements. On one hand, the Final EIR claims that there is plenty of fuel in the "fuel procurement area" to serve both the Project and "other uses." Final EIR at 2-79. On the other hand, the Final EIR claims it may be cost-prohibitive for other biomass facilities to obtain fuels from the Tahoe National Forest and Lake Tahoe Basin Management Unit. Final EIR at 2-80; *see also* Draft EIR at 5-20. Yet the "fuel procurement area" includes significant portions of both of these forests. *See Proactive Customer Services, Logistics Study of a Biomass Facility for the Lake Tahoe Region Task 3.0 at 8 (2011)*. Compounding these contradictions is the fact that the Project site itself is surrounded by the Tahoe National Forest; the EIR provides no adequate explanation for its assertions that MRF-processed fuels are currently hauled to other biomass plants *and* that it is cost-prohibitive for other biomass plants to haul fuels from the Tahoe National Forest—where the MRF is located.

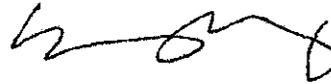
Again, these contradictions undermine the EIR's analysis. To the extent the Project uses MRF-processed fuels, other biomass facilities will have to satisfy their demand for those fuels from other sources, whether inside or outside the "fuel procurement area" assessed for this Project.<sup>6</sup> The EIR fails even to acknowledge, much less analyze, this foreseeable indirect impact of the Project.

### III. Conclusion

For the foregoing reasons, and for the reasons stated in the Center's comments on the Draft EIR, the EIR fails to meet the minimum requirements of CEQA. Accordingly, the Planning Commission should not certify the EIR and approve the Project until the EIR is revised to meet all legal requirements and recirculated for additional comment.

Thank you very much for your consideration.

Sincerely,



Kevin P. Bundy  
Senior Attorney

Cc: Environmental Coordination Services (via email: [cdraecs@placer.ca.gov](mailto:cdraecs@placer.ca.gov))

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<sup>6</sup> The EIR does not disclose or analyze the potential overlap between the fuel procurement areas or "woodsheds" of other existing and proposed biomass facilities in the region. This type of analysis would be helpful to understanding the cumulative interactions among these facilities and the overall effect on fuel demand in particular locations.

Recd 1-29-13  
SNP.



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CENTER for BIOLOGICAL DIVERSITY

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January 28, 2013

*Via Federal Express*

Michael Johnson, Planning Director  
CDRA Planning Services Division  
3091 County Center Drive, Suite 140  
Auburn, CA 95603

**Re: Appeal of December 20, 2012 Planning Commission Decisions:  
Environmental Impact Report and Conditional Use Permit  
for the Cabin Creek Biomass Facility Project  
(SCH No. 2011122032; CUP No. PCPJ 20110376)**

Dear Mr. Johnson:

As you know, the Center for Biological Diversity has appealed the Placer County Planning Commission's December 20, 2012 certification of the Environmental Impact Report ("EIR") and approval of Conditional Use Permit No. PCPJ 20110376 ("CUP") for the Cabin Creek Biomass Facility Project ("Project") to the Placer County Board of Supervisors ("Board"). This letter and accompanying exhibits are additional materials for the Board's consideration pursuant to Placer County Code section 17.60.110C(1). Please include these materials in the administrative record of proceedings for this Project.

The Center has appealed the Planning Commission's decisions because the EIR for this Project does not comply with the California Environmental Quality Act ("CEQA"). As a result of this non-compliance, the Planning Commission's approval of the Project and CUP, and its associated findings, were not consistent with law.

Detailed factual and legal grounds for the appeal are stated in the Center's September 10, 2012 comments on the Draft EIR, our December 19, 2012 comments to the Planning Commission on the Final EIR, CUP, and associated findings and staff report for the Project, and our notice of appeal dated December 27, 2012. Those letters are hereby incorporated by reference. The purpose of this letter is to briefly summarize, for the Board's convenience, some of the Center's main objections to the EIR's analysis of the Project's environmental impacts.

#### **I. CEQA Background**

CEQA has two main purposes. First, CEQA ensures public disclosure and analysis of factual information about a project's environmental impacts. Second, CEQA requires implementation of feasible mitigation measures and alternatives that avoid or reduce environmental impacts that are identified as "significant." Compliance with

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CEQA's information disclosure requirements allows the public and decision-makers to evaluate the environmental trade-offs associated with any particular project honestly and transparently.

Identification of a significant environmental effect does not mean a project cannot go forward. Rather, significant effects must be mitigated or avoided to the extent feasible. Where mitigation or alternatives are not feasible, an agency can still approve a project with significant environmental consequences, so long as it clearly identifies the overriding considerations that justify approval despite remaining adverse impacts. See Pub. Res. Code § 21081(a)(3), (b).

CEQA also ensures that members of the public can properly evaluate decisions made by their elected representatives when they go to the polls. As the California Supreme Court observed many years ago, an EIR is intended

to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action. Because the EIR must be certified or rejected by public officials, it is a document of accountability. If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees. The EIR process protects not only the environment but also informed self-government.

*Laurel Heights Improvement Ass'n v. Regents of the Univ. of California*, 47 Cal. 3d 376, 392 (1988) (internal citations and quotations omitted).

CEQA compliance thus ensures that public officials have a sound basis on which to make decisions that affect the human environment, and that members of the public have a sound basis on which to evaluate and participate in those decisions.

## **II. The EIR for the Cabin Creek Biomass Project Does Not Comply with CEQA.**

Unfortunately, the EIR for this Project does not provide a sound basis for decision-making. Rather than focusing solely on facts, the EIR employs assumptions that undermine its analysis of and conclusions regarding the Project's environmental impacts.

This is the case particularly with the EIR's analysis of the Project's greenhouse gas emissions. Combusting wood for energy, whether in a traditional boiler or in a gasification facility, releases large quantities of carbon dioxide ("CO<sub>2</sub>"), which once emitted can persist in the atmosphere and exert a warming effect on the climate for decades and even centuries. The assertion that biomass is by definition "carbon

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neutral”—and that CO<sub>2</sub> emissions associated with biomass combustion can therefore be ignored—has been thoroughly debunked in the published scientific literature.<sup>1</sup>

To its credit, the EIR for this Project does not simply assume that biomass combustion is carbon neutral. Rather, the EIR purports to evaluate the Project’s greenhouse gas emissions in comparison to what would happen to woody materials if they were not used as Project fuel; in other words, the EIR compares the Project’s emissions to emissions that otherwise might occur if the fuel met the “alternative fate” of being burned in the open. Using this method, the EIR concludes that Project’s greenhouse gas emissions, and its contribution to climate impacts, will be less than significant.

This conclusion, however, depends on two core assumptions.<sup>2</sup> Under CEQA, assumptions must have a factual basis; an analysis resting on non-factual assumptions can render an environmental document inherently misleading. Neither of the two assumptions critical to the EIR’s analysis of greenhouse gas emissions is grounded in fact; in this respect, the EIR falls short of CEQA’s requirements.

The EIR’s first assumption is that all of the woody biomass material identified as fuel for the Project would have been burned in the open if not diverted to the facility. Draft EIR at 10-13. The EIR thus treats CO<sub>2</sub> emissions from the Project as if they “avoid” CO<sub>2</sub> emissions from open burning that otherwise would occur. *See id.* at 10-14 to 10-15 and App. D (subtracting from the Project’s “smokestack” emissions the “avoided” emissions associated with open burning of the same material).<sup>3</sup> This assumption, however, contradicts numerous other statements in the EIR that expressly leave open the possibility of using fuels from a “variety” of sources that might *not* otherwise have been burned in the open (including but not limited to woody materials typically left in the forest after logging and materials currently processed at the County’s

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<sup>1</sup> Some of the relevant scientific literature is discussed in the Center’s Draft EIR Comments at page 10 and footnotes 11-14 (2-67 of the Final EIR). Exhibits referenced in these footnotes are reproduced in Appendix B to the Final EIR.

<sup>2</sup> Scientists have observed that the choice of assumptions used in calculating atmospheric CO<sub>2</sub> emissions from biomass combustion has a dramatic effect on the outcome of analysis. *See* Bjart Holtsmark, *The outcome is in the assumptions: analyzing the effects on atmospheric CO<sub>2</sub> levels of increased use of bioenergy from forest biomass*, Global Change Biology Bioenergy (2012), doi: 10.1111/gcbb.12015 (attached as Ex. 1) (concluding that repeated harvests of live trees for bioenergy production can produce permanent increases in atmospheric CO<sub>2</sub> levels when assumptions are corrected to reflect common forestry practices).

<sup>3</sup> Although the EIR asserts that materials left in the forest might cause intensification of forest fires, and thereby lead to greater greenhouse gas emissions than would occur if the materials are diverted to the Project, the EIR offers no factual support for this conclusory assertion and did not rely on this assertion in reaching its conclusions.

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Materials Recovery Facility on Cabin Creek Road). Indeed, nothing in the EIR or the CUP limits Project fuels to materials that otherwise would have been burned in the open.<sup>4</sup>

This assumption also appears to contradict the Master Stewardship Agreement between the County and the USDA Forest Service for the Lake Tahoe Basin Management Unit (“MSA”). That agreement expressly contemplates that the County will remove biomass that otherwise may have been masticated and left on-site—not burned—following logging operations. For example, the MSA states that one of its purposes is to “increase the effectiveness of fuels reduction projects with follow up mastication treatments by increasing the amount of biomass removed from mechanically harvested units.”<sup>5</sup> Similarly, the MSA is intended to give forest contractors “options for removing activity fuels (tops/limbs) and existing surfaces fuels or leaving them on the project site per contract specifications (usually masticated or in landing piles)” by providing the County “the opportunity to provide funding (above Forest Service costs) for increased utilization of activity fuels for biomass on Forest Service contracted projects.”<sup>6</sup> In other words, the MSA is intended to result in the County removing *additional* biomass from forests in the Lake Tahoe Basin Management Unit, including biomass materials that otherwise might have been masticated and left on site.<sup>7</sup>

The EIR’s second critical assumption is that outdoor burn piles will achieve 95% combustion efficiency—that is, that open burning of slash piles will result in consumption of 95% of the piled material. This assumption is not grounded in any data, facts, or analysis, but rather solely in the *further* assumption that contractors want to burn as much as they can. See EIR App. D. As explained in our comment letters, however, Forest Service guidelines for estimating emissions from burn piles shows that 95% is at the highest end of the typical combustion efficiency range (75% to 95%).<sup>8</sup> The Final EIR

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<sup>4</sup> For example, although Conditions 40 and 41 to the CUP prescribe specific standards for fuel materials, neither condition requires that the Project source *only* material that otherwise would have been burned in the open. Nor does the CUP clearly specify that only forest-sourced and “Wildland Urban Interface” materials will be used as fuel.

<sup>5</sup> Master Stewardship Agreement No. 11-SA-11051900-006 at 1 (approved by Placer County Board of Supervisors April 12, 2011), available at [http://www.placer.ca.gov/upload/bos/cob/documents/sumarchv/2011Archive/110412A/bosd\\_110412\\_11\\_p97\\_p148.pdf](http://www.placer.ca.gov/upload/bos/cob/documents/sumarchv/2011Archive/110412A/bosd_110412_11_p97_p148.pdf) (last visited January 28, 2013).

<sup>6</sup> *Id.* at 2.

<sup>7</sup> Contrary to the EIR’s assertions, the MSA also suggests that locating a biomass plant near a forest may be *intended* to change the way the forest is managed by changing the economics of forest projects. If the Project creates demand for fuel that increases the value of biomass and makes forest projects more economical, it may facilitate the harvest and use of trees that would not otherwise have been harvested and either used as fuel or burned in the open. The EIR’s failure to fully consider this possibility further undercuts its assumption that all Project fuels otherwise would have been burned in the open.

<sup>8</sup> Draft EIR Comments at 12 and footnote 17; Final EIR Comments at 5-6.

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states that most of the fuel for the Project will be coming from Forest Service land, yet inexplicably rejects the Forest Service's own relevant guidance on the matter.

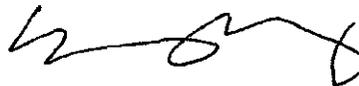
Materials diverted to the Project will be combusted—and converted into CO<sub>2</sub>—at near 100% efficiency. The lower the combustion efficiency resulting from open burning, the greater the difference between the emissions that will actually come out of the Project smokestack and the emissions supposedly “avoided” by diverting materials that otherwise would have been burned in the open.

Only by employing these two unsupported assumptions can the EIR conclude that the Project's greenhouse gas emissions are less than significant. The EIR uses an “efficiency” metric, derived from California's greenhouse gas emissions reduction law, AB 32, to assess the significance of this impact.<sup>9</sup> Yet this metric leaves very little margin for error. If the EIR's assumptions are off by even five percent—that is, if even five percent of the material diverted to the Project would not have been burned in the open, or burn piles in reality achieve only 90% combustion efficiency—the Project's emissions would be significant even under the EIR's flawed threshold.

In focusing on the Project's greenhouse gas emissions, we do not ignore the fact that open burning of slash and other materials in the forest can have negative effects on air quality. We also recognize that emissions of many non-greenhouse pollutants can be reduced, relative to open burning, by combustion in a controlled environment. But the public and decision-makers need complete information about all of a Project's impacts—both positive and negative—in order to make good environmental decisions. The assumptions used in the EIR's greenhouse gas analysis failed to provide the information CEQA requires.

Thank you very much for your consideration of this brief summary of some of the Center's concerns with the environmental review of this Project.<sup>10</sup> Please feel free to contact me at (415) 436-9682 x313 or [kbundy@biologicaldiversity.org](mailto:kbundy@biologicaldiversity.org) with any questions.

Sincerely,



Kevin P. Bundy  
Senior Attorney

Cc: Ann Holman, Clerk of the Board of Supervisors (via email)

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<sup>9</sup> As explained in the Center's comment letters, the EIR's use of this metric is improper. See Draft EIR Comments at 7-11; Final EIR Comments at 3-5.

<sup>10</sup> In providing this partial summary, the Center expressly reserves and does not waive any other objection raised during the administrative process for this Project.

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Attachment:

Exhibit 1: Bjart Holtsmark, *The outcome is in the assumptions: analyzing the effects on atmospheric CO<sub>2</sub> levels of increased use of bioenergy from forest biomass*, Global Change Biology Bioenergy (2012), doi: 10.1111/gcbb.12015.

# The outcome is in the assumptions: analyzing the effects on atmospheric CO<sub>2</sub> levels of increased use of bioenergy from forest biomass

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## Abstract

Recently, several studies have quantified the effects on atmospheric CO<sub>2</sub> concentration of an increased harvest level in forests. Although these studies agreed in their estimates of forest productivity, their conclusions were contradictory. This study tested the effect of four assumptions by which those papers differed. These assumptions regard (1) whether a single or a set of repeated harvests were considered, (2) at what stage in stand growth harvest takes place, (3) how the baseline is constructed, and (4) whether a carbon-cycle model is applied. A main finding was that current and future increase in the use of bioenergy should be studied considering a series of repeated harvests. Moreover, the time of harvest should be determined based on economical principles, thus taking place before stand growth culminates, which has implications for the design of the baseline scenario. When the most realistic assumptions are used and a carbon-cycle model is applied, an increased harvest level in forests leads to a permanent increase in atmospheric CO<sub>2</sub> concentration.

**Keywords:** atmosphere, bioenergy, carbon, climate change, Faustmann, impulse response functions

Received 2 May 2012; revised version received 9 August 2012 and accepted 31 August 2012

## Introduction

The literature draws attention to the fact that the conversion of natural habitats to cropland leads to release of carbon, thus creating a biofuel carbon debt with a potential payback period of several decades or even centuries (see, for example, Gurgel *et al.*, 2007; Fargione *et al.*, 2008; Searchinger *et al.*, 2008; Melillo *et al.*, 2009; Gibbs *et al.*, 2010; Lapola *et al.*, 2010).

The articles mentioned, however, studied biofuels based on fast-growing crops, in which the biomass harvested within 1 year is replaced by a new crop. In that case, the CO<sub>2</sub> released by combustion of the biomass could, for practical purposes, be ignored because the growth of the new crop requires the capture of the same amount of CO<sub>2</sub> within 1 year.

The issue becomes more complex if the source of bioenergy is a forest. The rotation period of a boreal forest stand is usually 70–120 years. Hence, a century might be required for the regrowth of a harvested boreal forest stand and recapture of the amount of CO<sub>2</sub> released originally. Despite this considerable time lag, recent studies have considered wood fuels from boreal forests as being carbon neutral, thus ignoring the amount of CO<sub>2</sub> released by the combustion of that wood (see, for example, Bright & Strömman, 2009; Sjølie *et al.*, 2010).

Keeping in mind that the carbon intensity of wood fuels is approximately at the level of coal, it is obvious that, from a methodological perspective, ignoring these emissions is not satisfactory. A body of literature has thus emerged that accounts for the amount of CO<sub>2</sub> released from combustion of biomass from forests and other slow-growing sources of biomass (see, for example, Manomet Center for Conservation Sciences, 2010; Cherubini *et al.*, 2011a,b; McKechnie *et al.*, 2011; Holtsmark, 2012).<sup>1</sup>

The conclusions of the articles mentioned vary significantly. For example, Holtsmark (2012) found that increasing the harvest of a forest permanently lowered the carbon stock of the forest and, consequently, permanently heightened the amount of CO<sub>2</sub> in the atmosphere. In contrast, Cherubini *et al.* (2011a,b) found that the CO<sub>2</sub> concentration in the atmosphere was lower 60–70 years after harvesting a relatively slow-growing forest than if the forest had not been harvested. Figure 1 illustrates these differences. The dashed line (left axis) depicts the atmospheric CO<sub>2</sub> that remains after harvest and combustion of a stock of biomass containing one metric ton of carbon, as found by Cherubini *et al.* (2011a). The solid line (right axis) shows the corresponding result in the work of Holtsmark (2012), in which increased harvest levels were predicted to

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<sup>1</sup>Haberl *et al.* (2012a,b) and Schulze *et al.* (2012) include further references and discuss the implications of this literature.

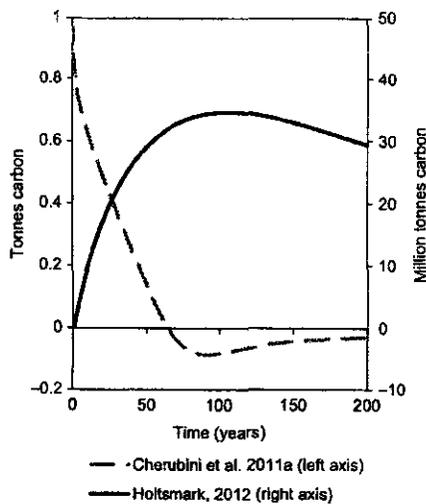


Fig. 1 The dashed line (left axis) shows the atmospheric carbon that remains at time  $t$  after a single harvest event at time  $t = 0$ , according to Cherubini *et al.* (2011a). The solid line (right axis) shows the atmospheric carbon that remains after a series of subsequent harvest events as a result of the application of an impulse response function to the results of Holtsmark (2012).

increase the amount of CO<sub>2</sub> in the atmosphere in the long term.<sup>2</sup>

The different conclusions reached in these papers are explained by different methodological choices or assumptions. Therefore, an analysis of the importance of different simplifications and methodological choices is needed. Here, I will focus on four methodological choices.

- 1 Some studies consider a single harvest event occurring at the present time, with no biomass to be harvested in the future. However, a single harvest event performed at the present time will not produce any biomass in the future and is, therefore, not satisfactory if one wants to gather knowledge related to the consequences of the increased use of biomass presently *and* in the future. A single harvest event performed at the present time will not produce the required biomass if one aims to replace fossil fuels with biomass on a permanent basis. I will, therefore, demonstrate the effects of the replacement of a single harvest approach with a permanently increased harvest approach.
- 2 In some studies, it is assumed that a rotation period ends when the growth of the trees has culminated. Other studies take into account that, since the publi-

<sup>2</sup>See the red curve in Fig. 4, page 423, in Holtsmark (2012). To achieve the somewhat different solid line in Fig. 1 here, the impulse response function of the Bern 2.5CC carbon-cycle model was applied; see Eqn (1).

cation of the work of Faustmann (1849), and even earlier,<sup>3</sup> forest economists have known that a commercial forester will not postpone harvest until the growth of the trees has culminated, but will usually harvest at an earlier stage, following the so-called Faustmann rule. I will demonstrate the effects of the application of a rotation-period length that is in accordance with this rule.

- 3 Taking into account that harvest usually takes place in stands that are still growing, the baseline scenario becomes important. Not all studies take into account that the harvest scenario should be measured against a baseline scenario (with no harvest) in which the trees are still growing, thus capturing CO<sub>2</sub> from the atmosphere. I will demonstrate the importance of the use of a realistic baseline scenario along these lines.
- 4 In some studies, it is assumed, for simplicity, that the CO<sub>2</sub> released from the combustion of biomass accumulates and remains in the atmosphere forever. In other studies, an impulse response function is applied that models the ability of the ocean and of the terrestrial biosphere to absorb CO<sub>2</sub> from the atmosphere.

Table 1 provides an overview of how the five studies on the bioenergy from forests mentioned deal with these methodological choices. The approach of Cherubini *et al.* (2011a,b) was the inclusion of an impulse response function in the analysis, whereas the other studies listed applied a simple accumulation of CO<sub>2</sub>. However, Cherubini *et al.* (2011a,b) and Manomet Center for Conservation Sciences (2010) considered a single harvest event exclusively. The methodology used for the construction of the baseline scenarios also varied.

To demonstrate quantitatively how the methodological choices influence the conclusions of this type of study, I will use the articles of Cherubini *et al.* (2011a) and Holtsmark (2012) as the starting point, adjust their methodological choices, and demonstrate the consequences of these adjustments. In contrast with the approach of Cherubini *et al.* (2011a), Holtsmark (2012) considered the consequences of permanently increasing harvest levels by studying a series of harvests. Moreover, Holtsmark (2012) took into account that the harvest usually takes place before the growth of the stand culminates and how the baseline scenario then should be designed. Holtsmark (2012), however, ignored the decay functions of atmospheric CO<sub>2</sub> and considered, for simplicity, accumulated emissions exclusively.

<sup>3</sup>See the discussion of early contributions to this issue in Samuelson (1976) and Scorgie & Kennedy (1996).

Table 1 Methodological differences in five recent papers dealing with bioenergy from forest biomass

	Cherubini <i>et al.</i> (2011a)	Cherubini <i>et al.</i> (2011b)	Manomet Center for Conservation Sciences (2010)	McKechnie <i>et al.</i> (2011)	Holtmark (2012)
Single harvest event or permanently higher harvest level?	Single	Single	Single	Permanent	Permanent
Does the no harvest baseline take growth and carbon capture in mature stands into account?	No	No	Yes	Yes	Yes
Is the time of harvest in accordance with the Faustmann rule?	No	Some of the scenarios	Yes	Yes	Yes
Impulse response function (IRF) or simple accumulation of CO <sub>2</sub> ?	IRF	IRF	Simple accumulation	Simple accumulation	Simple accumulation

This study builds a bridge between the approaches of these two studies by taking atmospheric decay functions into account, as in Cherubini *et al.* (2011a), and including the realistic baseline scenario and the multiple harvest approach of Holtmark (2012) in the analysis.

This paper is organized as follows. The model and the basic methodological choices are presented in the next section, the results are presented in the third section, and the results are discussed in the fourth section, which also includes the conclusions of the study.

**Materials and methods**

Based on Forster *et al.* (2007) and the Bern 2.5CC carbon-cycle model, which those authors recommend, Cherubini *et al.* (2011a) applied the following atmospheric CO<sub>2</sub> decay function:

$$y(t) = \Delta_0 + \sum_{i=1}^3 \Delta_i e^{-t/\alpha_i}, \tag{1}$$

where  $y(t)$  represents the fraction of an initial pulse of CO<sub>2</sub> at time  $t = 0$  that remains in the atmosphere at time  $t$  and where  $\alpha$  and  $\Delta_i$  are parameters (Table 2). The time unit is 1 year. The decay is caused by the uptake of CO<sub>2</sub> by the ocean and by the terrestrial biosphere. Cherubini *et al.* (2011a) considered two cases. In the first case, those authors did not take into account the oceanic absorption of anthropogenic CO<sub>2</sub> from the atmosphere, although they considered this effect in the second case. For the purpose of this study, only the latter case is considered, as it is the most realistic and, therefore, the most interesting case.

It is assumed that the harvesting of biomass from forests is followed by replanting and the growth of new biomass. Regrowth implies carbon capture from the atmosphere. Cherubini *et al.* (2011a) assumed that the growth and carbon capture of the stand after a harvest follow the analytic form:

$$g(\tau) = (2\pi\sigma^2)^{1/2} e^{-(\tau-\mu)^2/2\sigma^2}, \tag{2}$$

Table 2 Parameter values

	Cherubini <i>et al.</i> (their case with $r = 100$ )		Present case	
$\Delta_0$	0.217	$\sigma$	25	37.5
$\Delta_1$	0.259	$\mu$	50	75
$\Delta_2$	0.338			
$\Delta_3$	0.186			
$\alpha_1$	172.9			
$\alpha_2$	18.51			
$\alpha_3$	1.186			

where  $\sigma$  and  $\mu$  are parameters and  $\tau$  is the age of the stand. It can be deduced that a parcel with a stand age  $\tau$  has the following carbon stock.<sup>4</sup>

$$C(\tau) = (2\pi\sigma^2)^{1/2} \sum_{t=0}^{\tau} e^{-(t-\mu)^2/2\sigma^2}. \tag{3}$$

The carbon captured by biomass regrowth should be considered in terms of negative emissions. Negative emissions should be treated symmetrically regarding positive emissions. Thus, the decay function presented in (1) should be applied to these negative emissions exactly as it is applied to the positive emissions.

Consider, for example, a parcel replanted at time  $t = 0$ . The carbon captured at time  $t_1$  would be  $g(t_1)$ , and at time  $t_2$ , i.e.,  $t_2 - t_1$  periods later, a fraction  $y(t_2 - t_1)$  of these negative emissions, i.e.,  $-g(t_1)y(t_2 - t_1)$ , is remaining in the atmosphere.

Assume now that, at time  $t = 0$ , the age of the stand is  $\tau_m$  and that harvesting proceeds at this time. Combustion of the extracted biomass causes a CO<sub>2</sub> emission pulse  $C(\tau_m)$ , which, for simplicity, is labeled as  $C$  in the following equation. Taking the regrowth function described in (2) into account, the amount of CO<sub>2</sub> in the atmosphere  $A_H(t)$  at time  $t$ , will be as follows:

<sup>4</sup>To show exactly how the numerical examples in the next section are constructed, I used discrete time in the theoretical model description as well.

$$A_H(t) = C \cdot y(t) - \sum_{\tau=0}^t g(\tau')y(t - \tau'), \quad (4)$$

where the first term on the right-hand side represents what is left of the pulse in the atmosphere at  $t$  periods after harvesting, whereas the second term represents the effect of regrowth.

Thus far, I have followed the example of Cherubini *et al.* (2011a). However, the alternative to harvesting and combustion of biomass is to not harvest: i.e., letting the stand grow and capture more CO<sub>2</sub>. In this case, the amount of CO<sub>2</sub> in the atmosphere would evolve as follows.

$$A_{NH}(t) = - \sum_{\tau=0}^t g(\tau_m + \tau')y(t - \tau'). \quad (5)$$

Note the assumption of Cherubini *et al.* (2011a) that harvesting always takes place when the growth of the stand has culminated [see (c) in Fig. 2], which is the reason why those authors disregarded this effect. If we take this effect into account, the net effect of harvesting on the atmospheric carbon content will be as follows:

$$A_S(t) = A_H(t) - A_{NH}(t). \quad (6)$$

The time at which harvesting takes place is a pertinent point. If we assume that the stock of trunks in the stand is proportional to the amount of biomass  $C(t)$  and that the market interest rate is  $r$ , then, according to the Faustmann rule, a forest owner will harvest when the stand age  $\tau$  satisfies the following equation.

$$\frac{C'(\tau)}{C(\tau)} = \frac{r}{1 - e^{-r\tau}}. \quad (7)$$

As the interest rate approaches zero, (7) is reduced to

$$\frac{C'(\tau)}{C(\tau)} = \frac{1}{\tau}. \quad (8)$$

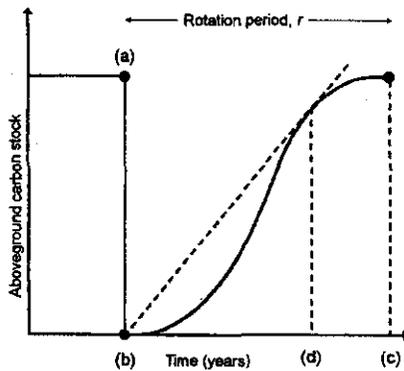


Fig. 2 This diagram is identical to Fig. 1 in Cherubini *et al.* (2011a), with the exception of the addition of the dashed lines. Cherubini *et al.* (2011a) assumed that harvest takes place at (c), whereas the Faustmann rule says that harvest usually will take place somewhere between (b) and (d).

Harvesting at a time at which  $\tau$  satisfies (8) implies a maximum sustained yield (MSY) and harvesting at point (d) in Fig. 2. To the extent that the forest owner discounts future income, the rotation period will be shorter.

The intuition behind the Faustmann rule is as follows. The forest owner takes into consideration his opportunity to invest the harvest profit, creating postharvest periodic revenue of  $rC(\tau)$ . Postponing the harvest has an alternative cost corresponding to this revenue. This could easily be interpreted as that harvest should take place when  $\tau$  satisfies the equation  $C(\tau) = rC'(\tau)$ . However, the Faustmann rule (7) also takes into account that, if the first harvest is postponed, all future harvests must also be postponed. This leads to Eqn (7), which implies an even earlier harvest than is indicated by the more simple equation  $C(\tau) = rC'(\tau)$ .

The application of the limiting case of the Faustmann rule described in (8) to the slower growing forest studied by Cherubini *et al.* (2011a), i.e., a forest with a rotation span of 100 years, implies that harvesting occurs when the stand is 70 years old. In other words, the slower growing forest considered by Cherubini *et al.* (2011a) is actually a relatively rapidly growing boreal forest. The rotation period for MSY in most Scandinavian forests is reportedly 70–120 years.

I shall, therefore, adjust the parametric assumptions to allow for a MSY rotation period of 100 years for the stand in question. I will accomplish this using the parameters  $\sigma = 37.5$  and  $\mu = 75$  (Table 2). Given these assumptions, the growth and carbon capture of the stand will culminate at a stand age of approximately 150 years. In other words, the stand will continue to grow and capture CO<sub>2</sub> from the atmosphere, as specified in Eqn (5), if it is not harvested after reaching maturity. The two compared (re)growth scenarios are shown in Fig. 3. The solid line traces the carbon stock of the stand if it is harvested at time  $t = 0$ , whereas the dashed line traces the carbon stock of the stand if its age is 100 years at time  $t = 0$  and if it is not harvested.

## Results

### Single harvest event

First, consider the case studied by Cherubini *et al.* (2011a), with a rotation period of 100 years. The harvest gives rise to a pulse emission of one metric ton of carbon at time 0, which is recaptured completely by the regrowth of the stand over the next 100 years. After these 100 years, there is no further growth on the stand. The dashed line in Fig. 4 shows the atmospheric carbon remaining from this pulse, according to the calculations of those authors. Note that, after ca. 65 years, a lower carbon concentration in the atmosphere is estimated in the presence of a harvest event compared with the case without harvest. This is so because increased atmospheric CO<sub>2</sub> levels lead to an increase in the accumulation of carbon in the terrestrial ecosystems, as well as to an increase in oceanic CO<sub>2</sub> absorption.

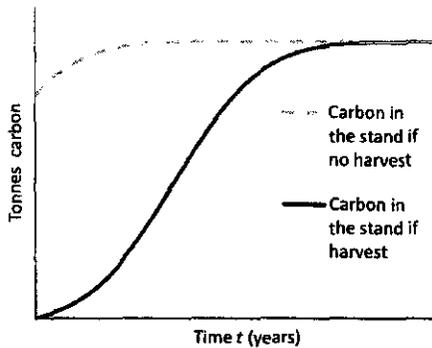


Fig. 3 Development of the carbon stock of a stand that is mature at time 0. The solid line represents the harvest case. The dashed line represents the no-harvest case.

As argued in the previous section, when dealing with a boreal forest, it would be appropriate to consider a MSY rotation period of 100 years and culmination of growth after approximately 150 years, which would be consistent both with the Faustmann rule and with a typical boreal forest stand. The harvest of this forest stand at time 0 is assumed to lead to a pulse of emission of one ton of carbon. The gray, solid line in Fig. 4 shows the level of atmospheric carbon from the pulse that remains in this case; cf. Eqn (4).

The question of the use of an appropriate baseline arises at this point. As Cherubini *et al.* (2011a) assumed that there is no further growth on the stand in the no-harvest case, there is no change in atmospheric carbon in their baseline scenario. The scenario is different if it is assumed that there is continued growth in the no-harvest case. The dotted curve in Fig. 4 traces the effect on atmospheric CO<sub>2</sub> levels in the no-harvest case and corresponds to Eqn (5). This curve dips below zero because there is no emission pulse at time  $t = 0$ , although carbon is still captured by continued growth after this time point.

Our interest is related to the *net* effect of harvesting on atmospheric CO<sub>2</sub> levels. This can be computed by subtracting the amount of atmospheric carbon in the no-harvest case from the amount of atmospheric carbon in the case with harvest; cf. Eqn (6). The result is the double-line curve in Fig. 4. Compared with the case studied by Cherubini *et al.* (2011a), this case gives a somewhat longer period of enhanced levels of atmospheric CO<sub>2</sub>.

*Multiple harvest events*

The numerical examples presented in the previous section measure the effect of a *single harvest event*. However, IPCC documents, such as Chum *et al.* (2012), envisage a permanent increase in the use of bioenergy and, accordingly, a higher harvest rate. Therefore, in the following paragraphs, I will consider a case in which

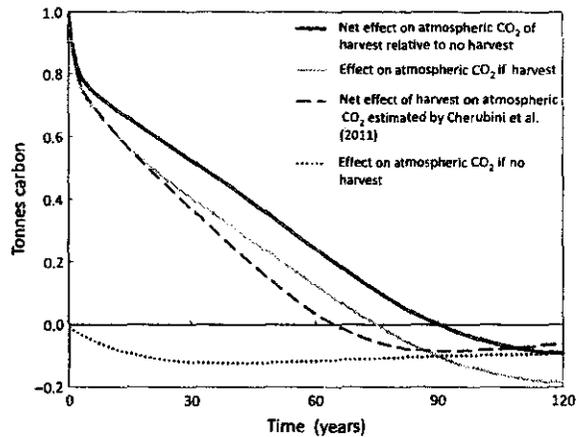


Fig. 4 The dashed line depicts the remaining atmospheric carbon for the methodology applied by Cherubini *et al.* (2011a), with a rotation period of 100 years. The gray, solid line represents the atmospheric carbon remaining with a slower growing stand with harvesting occurring at a stand age of 100 years. In both cases, harvesting of this stand at time 0 is assumed to cause an emission pulse of one ton of carbon. The dotted curve traces the effect on atmospheric carbon levels in the no-harvest case, whereas the double-line curve shows the net effect of harvest compared with no harvest.

the harvest events described in the previous section take place every year on a permanent basis.

Consider now a forest with an age structure such that every year one parcel, each with a growth function described by Eqns (1) and (2), reaches the stand age  $\tau_m$  and is, therefore, considered mature and ready for harvest. The net effect on atmospheric carbon of harvesting a stand every year compared with the case where the parcels are left unharvested, is given by the following equation.

$$A(t) = \sum_{t'=0}^t A_S(t'). \tag{9}$$

The function  $A_S(t)$  is defined in Eqn (6). Given the numerical assumptions, the expression is shown by the solid line depicted in Fig. 5. Other than the difference in scale (million tons and tons of carbon), the solid line shown in Fig. 5 is not far off the corresponding result that is obtained when the impulse response function is applied to the data of Holtmark (2012), which is indicated by the dotted curve shown in Fig. 5.

To have intuition to the above described results, study the dashed curve shown in Fig. 5, which is identical to the double lined curve depicted in Fig. 4. These curves show that the effect of a single harvest on atmospheric CO<sub>2</sub> levels is a two-stage process. During the first stage, the level of atmospheric CO<sub>2</sub> is higher than it would have been in the absence of harvest, whereas the reverse is true in the second stage. The observation

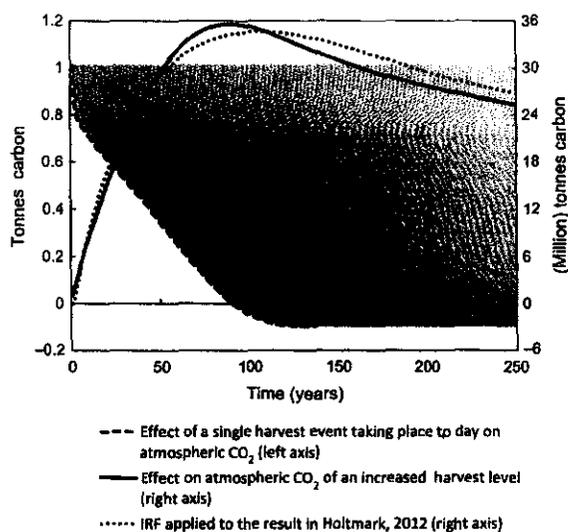


Fig. 5 The dashed curve (left axis) shows the net effect on atmospheric carbon of a single harvest event taking place today compared with the no-harvest case. The set of thin curves depicts similar net effects of subsequent annual harvest events. The thick solid line (right axis) shows the total net atmospheric carbon that remains after this series of identical annual harvest events. The dotted curve (right axis) represents the effect of an increased harvest level, as described in Holtsmark (2012).

that the negative effect in the second stage is smaller than the positive effect during the first stage is important to predict the outcome of a series of harvest events.

Next, consider the case in which harvest takes place annually. Every year, there is a pulse of emissions of 1 ton of carbon with subsequent regrowth on the stand. The set of thin curves shown in Fig. 5 represent the effects of these subsequent annual harvest events. The net effect on atmospheric CO<sub>2</sub> of this series of harvest events is calculated via vertical summation of this set of curves and the dashed curve. This gives the solid line depicted in Fig. 5, which is measured on the right axis.

Note that the dashed curve converges toward zero, whereas the solid line converges toward 19 tons of carbon (result not shown here). Hence, a single harvest event has no long-term effect on atmospheric carbon, whereas a permanently increased harvest level will increase atmospheric CO<sub>2</sub> permanently. It follows that an increased harvest level is not a carbon-neutral activity not even in the long term, whereas a single harvest event is a carbon-neutral activity in the long term.

## Discussion

The realization that wood fuels are not carbon neutral gives rise to a number of methodological questions or assumptions regarding the manner via which CO<sub>2</sub>

emissions from wood fuels should be modeled. In this study, I have focused on four methodological choices. First, I analyzed whether the consideration of a single harvest event is sufficient when the consequences of the increased use of biomass presently and in the future are to be analyzed. Second, I analyzed whether the assumption that the rotation period ends when the growth of the trees has culminated is satisfactory. Third, I analyzed the manner via which the baseline no-harvest scenario should be constructed. Finally, I studied the importance of including impulse response functions in the analyses.

The work of Cherubini *et al.* (2011a) was used as a starting point to evaluate the importance of these methodological choices. The approach of those authors of using an impulse response function was adopted. However, their model was adjusted taking into account that harvest usually takes place before the growth of the trees has culminated. The baseline (no harvest) scenario was adjusted accordingly. Finally, a single harvest approach was supplemented with a multiharvest approach, which reflects the fact that the policy proposal to be analyzed addresses the question of whether biomass should be harvested at the current time *and* in the future.

The numerical simulations provided information on the importance of these methodological choices. First, they showed that the results change fundamentally when a single harvest approach is replaced with a multiharvest approach reflecting a permanently increased harvest level. A single harvest approach could lead to the conclusion that wood fuels are carbon neutral in the long term, but not in the short term, whereas a multiharvest approach leads to the conclusion that wood fuels are not carbon neutral, neither in the long term nor in the short term. The multiharvest approach revealed that a permanently increased harvest level leads to a permanent increase in atmospheric carbon also when a realistic carbon-cycle model is taken into account.

Second, it was found that the consideration that harvest usually takes place before growth of the trees has culminated and the consequent adjustment of the baseline have a significant effect on the results, although they are not changed fundamentally.

Third, the results of Holtsmark (2012) were adjusted by incorporating an impulse response function in the analyses. This approach did not change the results fundamentally. Using simple accumulation of CO<sub>2</sub> in the atmosphere in this type of study is an approximation that is acceptable.

Another question, which was not discussed here, concerns the extent to which the increased harvest of a forest may reduce atmospheric carbon if the extracted biomass

replaces fossil energy sources. For a discussion of this question, see Holtsmark (2012) and McKechnie *et al.* (2011).

### Acknowledgments

The author gratefully acknowledges valuable comments and suggestions from Helmut Haberl as well as two referees. While carrying out this research the author has been associated with CREE – Oslo Centre for Research on Environmentally friendly Energy. CREE is supported by the Research Council of Norway. The work has also been supported by the Norwegian Research Council through the project “Biodiversity and Nature Index: Understanding, adaptive planning, and economic policy means for management of open lowlands and forests” (Project number 204348).

### References

- Bright RM, Strømman AH (2009) Life cycle assessment of second generation bioethanol produced from Scandinavian boreal forest resources. *Journal of Industrial Ecology*, 13, 514–530.
- Cherubini F, Peters GP, Berntsen T, Strømman AH, Hertwich E (2011a) CO<sub>2</sub> emissions from biomass combustion for bioenergy: atmospheric decay and contribution to global warming. *Global Change Biology Bioenergy*, 3, 413–426.
- Cherubini F, Strømman AH, Hertwich E (2011b) Effects of boreal forest management practices on the climate impact of CO<sub>2</sub> emissions from bioenergy. *Ecological Modelling*, 223, 59–66.
- Chum H, Faaij A, Moreira J (eds) *et al.* (2012) *Bioenergy*. Cambridge University Press, Cambridge, UK.
- Fargione J, Hill J, Tilman D, Polasky S, Hawthorne P (2008) Land clearing and the biofuel carbon debt. *Science*, 319, 1235–1238.
- Faustmann M (1849) Berechnung des Werthes, weichen Waldboden sowie nach nicht haubare Holzbestände für de Weltwirtschaft besitzen. *Allgemeine Forst und Jagd Zeitung*, 25, 441.
- Forster P, Ramaswamy V, Artaxo P *et al.* (2007) Changes in atmospheric constituents and in radiative forcing. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, (ed. Solomon S). Intergovernmental Panel on Climate Change, Cambridge, UK.
- Gibbs HK, Ruesch AS, Aclard F, Clayton MK, Holmgren P, Ramankutty N, Foley JA (2010) Tropical forests were the primary sources of new agricultural land in the 1980s and 1990s. *Proceedings from the National Academy of Sciences*, 107, 16732–16737.
- Gurgel AJ, Reilly M, Paltsev S (2007) Potential land use implications of a global biofuels industry. *Journal of Agricultural & Food Industrial Organization*, 5, 1–34.
- Haberl H, Sprinz D, Bonazountas M *et al.* (2012a) Correcting a fundamental error in greenhouse gas accounting related to bioenergy. *Energy Policy*, 45, 18–23.
- Haberl H, Schulze ED, Körner C, Law BE, Holtsmark B, Luysaert S (2012b) Response: complexities of sustainable forest use. *GCB Bioenergy*, doi: 10.1111/gcb.12004.
- Holtsmark B (2012) Harvesting in boreal forests and the biofuel carbon debt. *Climatic Change*, 112, 415–428.
- Lapola D, Schaldach MR, Alcamo J, Bondeau A, Koch J, Koelking C, Priess JA (2010) Indirect land-use changes can overcome carbon savings from biofuels in Brazil. *Proceedings from the National Academy of Sciences*, 103, 11206–11210.
- Manomet Center for Conservation Sciences (2010) Massachusetts biomass sustainability and carbon policy study: report to the commonwealth of Massachusetts department of energy resources (ed. Walker T). Natural Capital Initiative Report NCI-2010-03. Brunswick, ME, USA.
- McKechnie J, Colombo S, Chen J, Mabee W, Maclean HL (2011) Forest bioenergy of forest carbon? Assessing trade-offs in greenhouse gas mitigation with wood-based fuels. *Environmental Science & Technology*, 45, 789–795.
- Meilillo JM, Reilly JM, Kicklighter DW *et al.* (2009) Indirect emissions from biofuels: how important? *Science*, 326, 1397–1399.
- Samuelson PA (1976) Economics of forestry in an evolving society. *Economic Inquiry*, 14, 466–492.
- Schulze ED, Körner C, Law BE, Haberl H, Luysaert S (2012) Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral. *GCB Bioenergy*, doi: 10.1111/j.17571707.2012.01169.x.
- Scorgie M, Kennedy J (1996) Who discovered the Faustmann condition? *History of Political Economy*, 28, 77–80.
- Searchinger TD, Heimlich R, Houghton RA *et al.* (2008) Use of US croplands for biofuels increases greenhouse gas through emissions from land-use change. *Science*, 319, 1238–1240.
- Sjølie HK, Trømborg E, Solberg B, Bolkesjø TF (2010) Effects and costs of policies to increase bioenergy use and reduce GHG emissions from heating in Norway. *Forest Policy and Economics*, 12, 57–66.

# Cabin Creek Biomass Facility Project

**EIR Addendum  
SCH# 2011122032**



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**March 29, 2013**

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## ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ARB	California Air Resources Board
BDT	bone dry tons
Board	Placer County Board of Supervisors
CCR	California Code of Regulations
Center	Center for Biological Diversity
CEQA	California Environmental Quality Act
Commission	Placer County Planning Commission
CUP	Conditional Use Permit
DPW	County Department of Public Works
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
GW-hr/year	gigawatt-hours per year
IC	internal combustion
IPCC	Intergovernmental Panel on Climate Change
MRF	Eastern Regional Materials Recovery Facility
MT CO <sub>2</sub> e/MW-hr	metric tons of carbon dioxide-equivalent per megawatt hour
MW	megawatt
PCAPCD	Placer County Air Pollution Control District
PRC	Public Resources Code
Scoping Plan	<i>Climate Change Scoping Plan</i>
SR	State Route
TART	Tahoe Area Regional Transit
USFS	U.S. Forest Service
WUI	wildland/urban interface

# 1 INTRODUCTION

Placer County is the lead agency under the California Environmental Quality Act (CEQA) for the Cabin Creek Biomass Facility Project. "Lead agency" is defined by Section 21067 of the Public Resources Code (PRC) as "the public agency which has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment." It is consistent with the definition found in Section 15367 of Title 14, Division 6, Chapter 3, of the California Code of Regulations (CCR) (CEQA Guidelines).

On December 20, 2012, the Placer County Planning Commission (Commission) certified the Final Environmental Impact Report (EIR) and approved the Cabin Creek Biomass Facility Project. The project approval included the issuance of Conditional Use Permit (CUP) No. PCPJ 20110376.

On December 27, 2012, pursuant to Sections 17.60.110 and 18.32.010 of the Placer County Code, the Center for Biological Diversity (Center) filed an appeal to the Placer County Board of Supervisors (Board) of the Commission's certification of the EIR and project approval. On January 28, 2013, the Center submitted an additional letter and accompanying exhibits for the Board's consideration pursuant to Section 17.60.110C(1) of the County Code. The appeal and supplemental letters are included in Attachment A to this document.

Placer County has prepared this Addendum (prepared pursuant to CEQA [PRC Section 21000 et seq.]) to: (1) clarify certain methodologies and assumptions used in the EIR; (2) respond to the CEQA issues raised in the Center's appeal; (3) explain proposed new conditions of approval for the project added subsequent to project approval by the Commission; and (4) demonstrate that the addition of these conditions does not trigger the need for a subsequent EIR (Section 15162[a]).

## 1.1 PROJECT OVERVIEW

Placer County is proposing to construct a two-megawatt (MW) wood-to-energy biomass facility at the Eastern Regional Materials Recovery Facility (MRF) and Transfer Station that would use a gasification technology. Gasification systems generate electricity through transformation of the solid woody biomass into a "syngas" (i.e., synthetic gas) and combustion of the syngas in an internal combustion (IC) engine or turbine. Gasification is the thermochemical conversion of woody biomass into a syngas under controlled temperature and oxygen conditions; woody biomass materials are not "burned" in a gasification system. Gasification also produces a solid carbon char (also known as biochar).

The entire Eastern Regional MRF and Transfer Station site is approximately 292 acres and includes four County-owned parcels (APNs 080-010-031, 080-010-033, 080-070-017, and 080-070-016). The proposed project would be located on a 3.7-acre site in the southernmost area of the property. The site is located within the unincorporated portion of Placer County, California, approximately 2 miles south of Interstate 80 (I-80) at 900 Cabin Creek Road, west of State Route (SR) 89.

The proposed project would include construction of an approximately 11,000 square-foot, two-story structure that would house the power generating and emissions control equipment and an approximately one-acre material storage area. The storage area would include a 7,000 square-foot open air pole barn structure to allow materials to dry before use in the energy generation process. Additional onsite improvements would include eight parking spaces, a paved vehicle circulation area that includes new driveways on Cabin Creek Road and the access road to the Tahoe Area Regional Transit (TART) and County Department of Public Works (DPW) facilities located on the site, a paved haul road south of the material storage area, stormwater treatment facilities (including an infiltration trench and detention basin), retaining walls, and utility improvements/extensions.

Biomass materials (fuel for the plant) would be processed (ground and screened) at the locations from which they are removed (such as U.S. Forest Service [USFS] fuels reduction sites) and delivered via haul truck to the project site.

On July 27, 2012, the Draft EIR (State Clearinghouse No. 2011122032) for the Cabin Creek Biomass Facility Project was distributed to public agencies and the general public, and a public hearing to receive comments on the Draft EIR was held on August 30, 2012 before the Commission at the Granlibakken Resort in Tahoe City. The Final EIR was distributed on December 4, 2012. On December 20, 2012, the Final EIR was certified and the project was approved by the Commission. A Notice of Determination was filed with the State Clearinghouse on December 21, 2012. The EIR was prepared in accordance with the requirements of CEQA and the CEQA Guidelines.

## 1.2 SUMMARY OF APPEAL

The Center's appeal letters (dated December 27, 2012 and January 28, 2013) incorporate by reference their comments provided on the Draft EIR in a letter dated September 10, 2012 and the comments on the Final EIR, CUP, and associated findings and staff report for the project in a letter dated December 19, 2012. The Center's appeal letters do not raise new issues, but rather reiterate comments made in the letters received prior to EIR certification. The Final EIR, incorporated by reference here, includes responses to these comments and the specific locations in the Final EIR where these issues are addressed are cited below. As described in the appeal letters, the Center contends the following: (The section of this Addendum in which each issue is discussed is shown in parenthesis below.)

- 1) "The EIR's description of the Project and its proposed fuel mix are inconsistent and inadequate to support the assumption that all Project fuels otherwise would have been burned in the open. As a result, the EIR's conclusions regarding emissions of greenhouse gases and other air pollutants from the Project lack support." The Response to Comment 10-18 of the Final EIR (Placer County 2012b<sup>a</sup>: pages 2-92 and 2-93) addresses this issue. (Discussed in Section 2.1, below.)
- 2) "The EIR's assumption that Project fuels otherwise would have been burned in the open at a 95 percent combustion efficiency is unsupported. As a result, the EIR's conclusions regarding the significance of the Project's greenhouse gas emissions are unsupported." The Response to Comment 10-19 of the Final EIR (Placer County 2012b: pages 2-93 and 2-94) addresses this issue. (Discussed in Section 2.2, below.)
- 3) "The EIR failed to identify and employ a legally adequate 'baseline' for analysis of the Project's environmental impacts." The appeal letters further explain that the baseline refers to the project's contribution to global climate change and the EIR's analysis of greenhouse gas emissions. The Response to Comments 10-16 and 10-17 of the Final EIR (Placer County 2012b: pages 2-88 through 2-92) address this issue. (Discussed in Section 2.3, below.)
- 4) "The EIR fails to adequately disclose and analyze the Project's potential effects on forest management, forests, and habitat. The EIR's conclusions regarding these effects are without adequate support." The Response to Comment 10-23 of the Final EIR (Placer County 2012b: pages 2-95 and 2-96) addresses this issue. (Discussed in Section 2.4, below.)

<sup>a</sup> This citation refers to the Placer County Community Development Resource Agency's *Cabin Creek Biomass Facility Project, Final EIR, SCH#2011122032* dated December 4, 2012.

## **1.3 CEQA GUIDANCE REGARDING PREPARATION OF AN ADDENDUM TO THE EIR**

If, after certification of an EIR, there are changes or additions to a project that require revisions to the previous EIR, or changes to the circumstances under which the EIR was prepared, as explained below, CEQA provides three possible mechanisms to address these changes: a subsequent EIR, a supplement to an EIR, or an addendum to an EIR.

Section 15162(a) of the CEQA Guidelines provides that when an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, that one or more of the following conditions is met:

- (1) substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
  - (A) the project will have one or more significant effects not discussed in the previous EIR;
  - (B) significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - (C) mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives; or
  - (D) mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternatives.

Section 15164 of the CEQA Guidelines states that a lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described above in Section 15162(a), calling for preparation of a subsequent EIR, have occurred.

Conditions of approval have been added to clarify the EIR analysis on fuel sourcing and address the following: (1) only woody biomass materials (fuel) that would have otherwise been piled and burned in its place of origin will be accepted; (2) contracting requirements for material brought to the facility; and (3) monitoring, reporting, and enforcement requirements for all source material. These conditions address all the concerns raised by the appellant and ensure that the scenarios raised by the appellant cannot occur. Neither the added conditions nor the responses to issues raised in the appeal that supplement the information contained in the Final EIR trigger any of the conditions listed in Section 15162. First, as described in Section 2 below, no new information of substantial importance has been uncovered since certification of the EIR on December 20, 2012 that shows the project will have new significant effects or more severe previously evaluated effects. Second, no new significant environmental effects or substantial increase in severity of previously evaluated significant effects would result

from the addition of the project conditions described in Section 3, below; the conditions are consistent with the analysis contained in the EIR.

Additionally, there are no changes with respect to the circumstances under which the project is to be undertaken, or emergence of new information of substantial importance that would cause mitigation measures or alternatives previously found to be infeasible to now become feasible. There are no new mitigation measures or alternatives that are different from those analyzed in the EIR that would substantially reduce one or more significant effects on the environment. Therefore, pursuant to Section 15164 of the CEQA Guidelines, the differences between the approved Cabin Creek Biomass Facility Project described in the Draft and Final EIRs (Placer County 2012a<sup>b</sup>; Placer County 2012b) and the refined element of the project (i.e., the additional conditions of approval described in Section 3) as it is currently proposed is minor and in fact constitutes a clarification that may be addressed in an addendum to an EIR.

Information presented in Section 2, Responses to CEQA Issues Raised in Appeal, and Section 3, Additional Conditions of Approval, demonstrates that none of the conditions described in Section 15162 of the CEQA Guidelines would be met. Furthermore, the Draft and Final EIR and associated mitigation monitoring and reporting program remain valid for full disclosure of potential effects, and for identification of feasible measures to mitigate the identified significant impacts that would result from implementation of the project, as conditioned.

Because only one minor change to Cabin Creek Biomass Facility Project is necessary, and none of the conditions described in Section 15162(a) of the CEQA Guidelines calling for preparation of a subsequent EIR would occur, an addendum to the Cabin Creek Biomass Facility Project EIR is the appropriate mechanism to address modifications to the project and the grounds for appeal.

## 2 RESPONSE TO CEQA ISSUES RAISED IN APPEAL

The appeal letter from the Center dated January 28, 2013 included three specific comments about the greenhouse gases (GHG) analysis of the proposed project and one related to the project's effect on forest management, forests, and habitat. These comments are discussed in detail below.

### 2.1 AVOIDED EMISSIONS FROM OPEN BURNING

The EIR analysis of GHGs associated with the proposed project was based on the understanding that, but for the project, all of the biomass that would be consumed by the facility would otherwise be open burned. The Draft EIR states, "this analysis assumes the project would burn biomass from forest thinning projects that would have occurred with or without the project" (Placer County 2012a: page 10-14). Thus, to estimate the net change in GHG emissions that would occur with project implementation, the analysis estimated the level of GHG emissions that would be avoided. The Center questioned this assumption in its appeal.

As discussed in this Addendum, conditions have been incorporated into CUP No. PCPJ 20110376 to reinforce the EIR's assumption that fuel for the proposed biomass facility shall be limited to forest-sourced biomass that would otherwise be open burned. In addition, another condition incorporated into the CUP would prohibit the use of any biomass material that is initially processed at the MRF. Refer to Section 3, Additional Conditions of Approval, for details about these conditions. Therefore, the Center's comment that the EIR's greenhouse gas emission analysis is inadequate based on flawed fuel sourcing assumptions is without merit.

<sup>b</sup> This citation refers to the Placer County Community Development Resource Agency's *Cabin Creek Biomass Facility Project, Draft EIR, Volume 1, SCH#2011122032* dated July 27, 2012.

## 2.2 COMBUSTION EFFICIENCY OF OPEN BURNING

The Center also commented on the method used to estimate the level of GHG emissions from open burning that would be avoided with implementation of the proposed project. Specifically, the Center questioned the 95% combustion efficiency rate used to estimate GHG emissions from open pile burning and states that “this value is not grounded on any data, factor, or analysis” (Center letter dated January 28, 2013: page 4; see Attachment A). The Center also raised this issue in its comment letter on the Draft EIR and submitted a study by Knapp et al. (2005) suggesting a more accurate combustion efficiency would be between 67% and 88%. As explained in Response to Comment 10-19 in the Final EIR (Placer County 2012b: pages 2-93 and 2-94), the combustion efficiencies identified for broadcast prescribed burns, which are the type of burns discussed in Knapp et al. (2005), are not representative of the combustion efficiency of burn piles, which are built to maximize combustion and minimize smoke and are left to dry for one or two seasons (i.e., left to “season”) before being ignited. The Center also cited another study to suggest that the combustion efficiency of pile burns ranges between 75% and 95% (Hardy 1996). Also explained in Response to Comment 10-19, this study neither cites a reference for any of these values nor provides any reasoning to support why they were selected. Moreover, estimation of combustion efficiency was not the focus of the Hardy study; rather the study’s focus is on how to manage and minimize smoke from the burning of piled woody debris.

The combustion efficiency value of 95% was initially determined by emissions calculations performed by Placer County Air Pollution Control District (PCAPCD) staff (Springsteen, pers. comm., 2012). A value of 95% had also been used in a technical paper co-authored by PCAPCD staff and peer-reviewed prior to publication in the *Journal of Air and Waste Management* (Springsteen et al. 2011). In a study entitled, “Estimating Consumption and Remaining Carbon in Burned Slash Piles,” published in the *Canadian Journal of Forest Research*, authors Finkral et al. (2012) described using two different field methodologies, sector sampling and a form of line intersecting sampling, to estimate that burning of slash piles released 92% to 94% of the carbon in each pile to the atmosphere (page 1744). In another field study, the U.S. Bureau of Land Management, Salt Lake Field Office, reported that burn piles consumed more than 99% of their fuel (BLM [no date]). Based on these two studies, which were specifically conducted to estimate the combustion efficiency of pile burns, the EIR’s 95% value for combustion efficiency is reasonable and adequately substantiated. If the lowest value from the combined range identified by Finkral et al. (2012) and the BLM study had been used, which is 92%, the GHG efficiency of the proposed biomass facility would be 0.26 metric tons of carbon dioxide-equivalent per megawatt hour (MT CO<sub>2</sub>e/MW-hr), which is also less than the threshold of significance of 0.28 MT CO<sub>2</sub>e/MW-hr.

In addition, a study by the USFS addressing changes to soil properties from pile burning included visual inspections indicating that fuel consumption from pile burns representative of California mixed-conifer forests and Oregon ponderosa pine forests exceeded 95% (Busse et al. 2010: page 950).

Another important consideration is that the levels of CO<sub>2</sub> emissions and methane emissions from the open burning of biomass vary by combustion temperature. Research conducted by the USFS Fire, Fuel, and Smoke Science Program indicates that the hotter and more efficiently a fire burns, more of the carbon is emitted as CO<sub>2</sub> and less is emitted as methane and, conversely, fires that burn cooler or less efficiently emit less carbon as CO<sub>2</sub> and more as methane (Baker, pers. comm. 2013; Ward and Susott 1998). This relationship is important because the global warming potential of methane is 23 times greater than CO<sub>2</sub> (CCAR 2009: page 94). This suggests that if the estimation of CO<sub>2</sub>e emissions performed for the EIR analysis was to be adjusted using a lower combustion efficiency value representative of a cooler combustion temperature, then the burning would produce higher levels of methane. Given the higher global warming potential of methane, the combined effect of these two adjustments would most likely be an even greater estimate of CO<sub>2</sub>e emissions.

Therefore, because the combustion efficiency value used in the EIR analysis was calculated by experts, is supported in the scientific literature, and may be conservative based on combustion temperature, the Center’s

assertion that the 95% combustion efficiency rate used to estimate GHG emissions from open pile burning “is not grounded on any data, factor, or analysis” is without merit.

## 2.3 BASELINE FOR GHG ANALYSIS/EFFICIENCY-BASED THRESHOLD OF SIGNIFICANCE

The Center’s appeal letters allege that the use of an efficiency metric (i.e., 0.28 MT CO<sub>2</sub>e/MW-hr) to assess the significance of the change in GHG emissions associated with the proposed project is improper. In the Center’s September 10, 2012 letter it suggested that “a threshold of significance based on mass emissions is appropriate to evaluate the Project’s effects in light of existing conditions” (page 8). This topic is addressed in the Response to Comments 10-16 and 10-17 in the Final EIR (Placer County 2012b: pages 2-88 through 2-92), which explain that GHG impacts to global climate change are inherently cumulative and that the Draft EIR focuses on whether GHG emissions from the proposed biomass facility would “conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases,” which is a criterion from Appendix G of the CEQA Guidelines. Response to Comment 10-17 of the Final EIR also explains why a mass emission threshold would be less appropriate to evaluate the effects of the project’s GHG emissions in light of existing conditions. This explanation was also provided on page 10-10 of the Draft EIR (Placer County 2012a).

This section explains how the estimation of the proposed project’s GHG emissions was performed in good faith and with reasonable assumptions. The estimation of the net change in GHGs associated with the project is comprehensive and transparent, utilizes a conservative threshold of significance, and relies on conservative methodologies for estimating emissions. The analysis below demonstrates that the Center’s assertion that the threshold of significance used in the EIR’s GHG emissions analysis is improper, is without merit.

### 2.3.1 COMPREHENSIVE APPROACH

The quantification of GHGs associated with the proposed project is comprehensive. As shown in Table 10-3 on page 10-14 of the Draft EIR, both direct and indirect sources of GHG associated with the proposed project are quantified. The quantification includes emissions associated with project construction, the chipping of biomass prior to hauling, trucks hauling chipped biomass to the plant, trucks idling at the plant during delivery, the loader operating at in the fuel yard, employee travel to and from the plant, employee travel to and from the forest sites where thinning and hazardous fuel reduction projects would occur, trucks hauling biochar from the plant, the consumption of electricity by the plant from the grid to operate auxiliary equipment, the electricity use associated with water consumption, the electricity use associated with the treatment of wastewater generated by the plant, and the reduction in GHGs associated with the avoidance of open burning of forest thinning slash and hazardous fuels. This comprehensive approach follows recommendations by the California Office of Planning and Research (OPR) that lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with construction activities, stationary sources, vehicular traffic, and energy consumption, and to determine whether the impacts have the potential to result in a project or cumulative impact and to mitigate the impacts where feasible mitigation is available (OPR 2008).

### 2.3.2 TRANSPARENT CALCULATIONS

The methodologies and calculations used to estimate GHG emissions are transparent and fully described. The methodologies used to quantify emissions from all of the above-mentioned emission sources are outlined in Table 10-2 on page 10-12 of the Draft EIR. Emissions from every emissions source were estimated using methodologies and models recommended and/or developed by the PCAPCD, the California Air Resources Board (ARB), the U.S. Environmental Protection Agency (EPA), and/or the Intergovernmental Panel on Climate Change

(IPCC). A full citation for each of the models and methodologies is provided in the notes at the bottom of Table 10-2.

In addition, the County included all emissions calculations in Appendix D of the Draft EIR. To emphasize transparency, every numerical value in the calculation is accompanied by the units of that value, and the source—whether a default value from a model, a value provided by a literature source, or a calculation. All unit conversions are also shown and none of the values used in the calculations are hidden in the formula.

### 2.3.3 CONSERVATIVE THRESHOLD OF SIGNIFICANCE

A threshold of significance for determining at what level GHG emissions associated with the operation of a power-generating facility would constitute a cumulatively considerable contribution to global climate change has not been adopted by any governmental agency, including PCAPCD, the County, ARB, and EPA.

According to Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project would do any of the following:

- ▲ Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- ▲ Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Therefore, the County developed a quantitative threshold to evaluate the proposed project. As explained on page 10-10 of the Draft EIR, a quantitative threshold was developed that is based on California's 33 percent Renewable Electricity Standard, which was adopted under the mandate of the California Global Warming Solutions Act of 2006 (also known as Assembly Bill [AB] 32). AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020 and in accordance with that legislation, ARB adopted its *Climate Change Scoping Plan* (Scoping Plan) in 2008. The Scoping Plan outlines the main strategies California will implement to achieve the GHG reduction goal mandated by AB 32.

To evaluate the proposed project, the County developed a threshold of significance that is an efficiency metric that has a numerator and denominator as follows:

$$\frac{\text{Total GHG emissions generated by power generation facilities serving California in 2020}}{\text{Total electricity production serving California in 2020}}$$

The numerator of this ratio, 88.9 million metric tons per year of carbon dioxide-equivalent (MMT CO<sub>2</sub>e/year), is provided by ARB (ARB 2011b). The denominator of this ratio, provided in a report published by the California Energy Commission (Kavalec and Gorin 2009), is 316,280 gigawatt-hours per year (GW-hr/year). Thus, the GHG-efficiency of electricity consumed in California would need to be approximately 0.28 MT CO<sub>2</sub>e/MW-hr to meet Scoping Plan targets.

The level of GHGs in the numerator only includes the "stack" emissions directly emitted by power plants; it does not include any indirect "upstream" or "downstream" emissions—referred to as support emissions in the EIR—associated with electricity production in California. Sources of support emissions include the exploration, drilling, mining, extraction, refining, and transport of fossil fuels, delivery, worker trips, construction-related activities, waste disposal, water consumption, and wastewater treatment among others. However, support emissions of the project are included in the net increase in GHGs associated with the proposed biomass plant. Therefore, the analysis compares the combination of direct and support emissions with a threshold that only accounts for direct power plant emissions. In other words, the analysis compares the sum of the project's direct

stack emissions *and* indirect support emissions to a threshold that is based only on the direct emissions from power plants.

The direct and indirect emissions of a natural gas combined cycle power plant and a coal-powered plant can be considered for sake of comparison. The sum of direct and indirect GHG emissions of recently-built natural gas combined cycle power plants is approximately 1,100 pounds (lb) of CO<sub>2</sub>e/MW-hr (NETL 2011: page 29) or 499.1 grams of CO<sub>2</sub>e per kilowatt-hour (g CO<sub>2</sub>e/kW-hr) (NREL 2000: page 4). These rates are equivalent to approximately 0.50 MT CO<sub>2</sub>e/MW-hr. Coal-fueled power plants using advanced integrated gasification combined cycle technology emit 2,112 lb CO<sub>2</sub>e/MW-hr (NETL 2011: page 29) or a GHG efficiency of 0.96 MT CO<sub>2</sub>e/MW-hr. Older fossil fuel-based power plants have higher levels of “stack” emissions and higher levels of support emissions due to the processes (e.g., drilling, pumping) and energy consumed to transport the fuels to the plant.

Implementation of the 33 percent Renewable Electricity Standard is expected to result in 33% of California’s electricity demand to be met by renewable sources (i.e., solar, wind, geothermal, and biomass) and the remaining 67% of demand to be served by non-renewable, fossil fuel-based power plants. If, hypothetically, all of the fossil-fuel based power would be supplied by high-efficiency natural gas combined cycle power plants, which are the most efficient mode of fossil fuel-based electricity production with a GHG efficiency of 0.50 MT CO<sub>2</sub>e/MW-hr, and conservatively assuming that the 33% of electricity demand served by renewable sources would have no direct or support emissions of GHGs, the life cycle-based target efficiency metric for the state would be approximately 0.33 MT CO<sub>2</sub>e/MW-hr. The calculations used to support this value are attached. This threshold is less stringent than the value of 0.28 MT CO<sub>2</sub>e/MW-hr used in the impact analysis.

### 2.3.4 CONSERVATIVE EMISSIONS ESTIMATES

The emissions estimates used in the EIR for the proposed project are conservative in many ways, as described below.

#### EMISSIONS FROM SYNGAS COMBUSTION AND AVOIDED OPEN BURNING

As shown in Table 10-2 of the Draft EIR, emissions from syngas combustion were estimated using guidance from ARB’s Mandatory Reporting Guidelines (ARB 2012) and emissions avoided by diverting material that would otherwise be open burned as slash from hazardous fuels treatments and forest thinning were estimated using guidance from the IPCC (IPCC 2006). The emissions estimates for these two activities are important because, as shown in Table 10-2 of the Draft EIR, they comprise the two largest values used to estimate the net change in GHG emissions associated with the proposed project and ultimately the GHG efficiency with which the proposed project would produce electricity. An important distinction between these two methodologies is that the estimate of emissions from syngas combustion is based on the energy content of the biomass fuel (expressed in British thermal units [BTUs]) and the estimate of emissions avoided by diverting material that would otherwise be open burned is based on the mass of biomass fuel consumed. ARB staff suggest using the same basis for both emission estimates—energy content or fuel mass—and only account for the difference in factors that do not concern the carbon content of the fuel, such as the burn temperature or efficiency of the combustion (Gaffney, pers. comm., 2013).

By using different methodologies for these two activities based on different input parameters, the analysis in the Draft EIR presents a more conservative estimate of the net change in GHG emissions associated with the proposed project. If the level of avoided emissions associated with open pile burning was estimated based on the energy content of the biomass and the lower combustion efficiency of open burning (i.e., 95%), then the level of avoided emissions would be 25,200 MT CO<sub>2</sub>e/year, which is higher than the level of 24,858 MT CO<sub>2</sub>e/year calculated in the Draft EIR analysis. This would result in a lower estimate of the net increase in GHG emissions and an improved efficiency of 0.20 MT CO<sub>2</sub>e/MW-hr. Similarly, if the level of GHG emissions from syngas combustion was based on the mass of the biomass fuel, then the level of GHG emissions from the

biomass facility would be 26,167 MT CO<sub>2</sub>e/year, which is lower than the level of 26,526 MT CO<sub>2</sub>e/year used in the Draft EIR analysis. This would also result in a lower estimate of the net increase in GHG emissions and an improved efficiency of 0.20 MT CO<sub>2</sub>e/MW-hr.

Furthermore, the Draft EIR project description states that the plant would consume between approximately 14,000 and 17,000 bone dry tons (BDT) of woody biomass fuel annually depending on the vendor ultimately chosen (Placer County 2012a: page 3-11). To evaluate the worst-case condition, the high end of this range was used to estimate the net increase in GHG emissions associated with the proposed project.

In addition, the analysis did not account for the GHG-related effects open pile burning has on soil conditions. Pile burns may result in the loss of carbon and nitrogen from soil (Garcia-Corona et al. 2004; Glass et al. 2008; and Massman and Frank 2008, as cited in Busse et al. 2010). Warmer soil temperatures after fire events lead to greater microbial activity which increases the diffusion of methane from soils to the atmosphere (EPA 2011a). If these effects were included in the analysis, the level of GHG emissions avoided by the proposed project would be greater and the efficiency estimated for the proposed biomass facility would be better than the estimate of 0.28 MT CO<sub>2</sub>e/MW-hr used in the EIR analysis.

## PARASITIC LOAD

It is unknown at this time whether the biomass facility would use the electricity it generates to power some of its own equipment—this is referred to as a parasitic load—or use electricity from the grid. This point is important because electricity from the grid is more GHG-intensive than the renewable electricity generated by the facility. The County's technology consultant estimated that the facility would need up to 10% of its capacity, or 0.2 MW, to power its own equipment (Tornatore, pers. comm., 2012). To be conservative, however, the analysis assumed that the facility would export all of the electricity it produces and consume the electricity from the grid to power its own equipment (i.e., lights, processing equipment).

More specifically, as shown in Table 10-2 of the Draft EIR, the analysis estimated that 1,134 MT CO<sub>2</sub>e/year would be associated with the project's consumption of electricity from the grid. This estimate is based on the composite GHG emission factor for the utility that serves the project area, as identified in the California Emissions Estimator Model (CalEEMod) (SCAQMD 2011). If, however, the project relied on its parasitic load instead, then the net increase in GHG emissions associated with the proposed project would be reduced from 3,809 MT CO<sub>2</sub>e/year (also shown in Table 10-2 of the Draft EIR) to 2,675 MT CO<sub>2</sub>e/year. Also, the electricity output of the plant would be reduced to 1.8 MW. These changes would result in an improved GHG efficiency of 0.17 MT CO<sub>2</sub>e/MW-hr.

## 2.4 EFFECTS ON FOREST MANAGEMENT, FORESTS, AND HABITAT

The Center's appeal letters allege that the EIR fails to adequately disclose and analyze the project's potential effects on forest management, forests, and habitat. Footnote 7 of the January 28, 2013 appeal letter interprets the Master Stewardship Agreement between the County and the USFS, Lake Tahoe Basin Management Unit to suggest that "locating a biomass plant near a forest may be *intended* to change the way the forest is managed by changing the economics of forest projects. If the project creates demand for fuel that increases the value of biomass and makes forest project more economical, it may facilitate the harvest and use of trees that would not otherwise have been harvested..."

This comment was addressed in Response to Comment 10-23 of the Final EIR (Placer County 2012b: pages 2-95 and 2-96). As described on Draft EIR page 5-20, the USFS develops forest management plans based on existing resources and desired future conditions. The objectives identified in the forest management plans determine

the actions that the USFS takes at a local, management-unit level. Forest management projects are designed to fulfill a specific objective or combination of multiple objectives, such as hazardous fuels reduction, enhancement of wildlife habitat, scenic integrity, or stand-level management. Other land managers within the fuel supply area for the proposed facility, including California Tahoe Conservancy and California State Parks, have similar planning processes to develop management plans for their land. The operation of a biomass facility would not change the planning process for these agencies. The land managers would continue to identify objectives for forest management based on desired future conditions of the forest. Supplying biomass fuel to the proposed facility is not a management objective or priority for the Tahoe National Forest (TNF) or Lake Tahoe Basin Management Unit (LTBMU) (Conway, pers. comm., 2012; Fournier, pers. comm., 2012) and is not likely to be adopted by any of these agencies as a management goal in the future because it does not help to fulfill their missions.

The effect on biological resources from operation of the biomass facility over the long-term (40-year planning horizon) was evaluated in the Draft EIR in the Cumulative Impacts section (Placer County 2012a: pages 18-33 and 18-34). To reiterate, the proposed facility would not change the forest management objectives and priorities of the land managers in the surrounding area. The operation of the biomass plant would facilitate disposal of forest residuals at the plant that would otherwise be open burned (solidified by the conditions described in Section 3, below). Although the proposed biomass facility may assist in a more efficient completion of forest projects and provide a economic offset, neither TNF or LTBMU expect the proposed biomass facility to substantially change the location, size, pace, objectives, or methods of their forest projects (Conway, pers. comm., 2012; Fournier, pers. comm., 2012). The planning and approval process for forest projects is the largest constraint to USFS operations and would remain unchanged with the proposed biomass facility. These forest projects are independent and are subject to separate environmental analyses and reviews. Biomass fuel would be obtained from projects that are in compliance with existing laws and regulations.

The Draft EIR describes (page 18-34) that the proposed project may result in forest management projects being completed more quickly because processing and hauling can occur in the same season as the management activity as compared to having to wait for piles to dry and then return later to burn piles (Fournier, pers. comm., 2012). The payment received for the materials may offset some project costs. However, this economic incentive would not substantially drive forest management activities, because the cost per acre for forest management projects is significantly more than the value of the biomass chips (Fournier, pers. comm., 2012; Conway, pers. comm., 2012). Again, the planning and approval process for forest projects is the largest constraint to USFS operations and would remain unchanged with the proposed biomass facility.

Placer County has signed a Master Stewardship Agreement with the USFS. The purpose and primary objective of the Tahoe Basin Biomass Master Stewardship Agreement is to reduce the number of acres of fuels burned annually on National Forest System (NFS) lands within the Lake Tahoe Basin by entering into a stewardship agreement with Placer County for removal of biomass from NFS lands. A secondary focus of the Master Stewardship Agreement is to increase the effectiveness of fuels reduction projects with follow up mastication treatments by increasing the amount of biomass removed from mechanically harvested units. This secondary objective would not be realized by the proposed project, because the project is limited in scope to material that would otherwise be open burned as further enforced through the new conditions described in this Addendum. The biomass removed under this project would be generated during implementation of fuels reduction and forest health treatments currently being conducted and/or planned within the wildland urban interface area on NFS lands.

The USFS, LTBMU, and Placer County are both actively involved in implementing projects and programs aimed at reducing hazardous fuels and improving wildfire protection to local communities. These fuel reduction efforts are included in the Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy (Basin Fuels Strategy), a comprehensive strategy for collaboratively conducting fuel reduction projects across all ownerships, involving all land management, fire protection and regulatory agencies within the Lake Tahoe Basin.

This strategy identifies biomass utilization as an important alternative to piling and burning live and dead fuels from these projects.

Therefore, the Center's assertion that the EIR fails to adequately disclose and analyze the project's potential effects on forest management, forests, and habitat is without merit.

### 3 ADDITIONAL CONDITIONS OF APPROVAL

#### 3.1 PROJECT OBJECTIVES

Placer County's objectives for the Cabin Creek Biomass Facility Project are to (Placer County 2012a; page 3-7):

1. Construct and operate a small-scale, sustainable, and low-impact biomass power plant at a location close to the source material;
2. Improve regional air quality and reduce greenhouse gas emissions associated with open burning of biomass waste;
3. Support healthy forest management practices that improve watershed health and wildlife habitat through already planned forest thinning operations designed to reduce catastrophic wildfire risks;
4. Contribute to California's renewable energy production goals through the operation of a woody biomass power plant that provides a long-term renewable electrical supply and reduces dependency on fossil fuels used to generate electricity for local consumption;
5. Provide a local source of reliable, consistent power to minimize electricity disruptions;
6. Demonstrate the Public-Private Partnership (PPP) model that includes partnerships between local, state, and federal agencies and local businesses for renewable energy development and forest health initiatives;
7. Provide new employment opportunities in surrounding areas; and
8. Utilize existing appropriately zoned land for enhancement of public utility supplies (i.e., electric generating capacity) while minimizing impacts to nearby land uses.

#### 3.2 CONDITIONS OF APPROVAL

In 2007, the Placer County Board of Supervisors created a Biomass Policy Team and adopted a Strategic Plan for Wildfire Protection and Biomass Utilization (Placer County 2007). The broader Placer County Biomass Program was borne out of these actions, with a specific goal to improve air quality by *reducing air pollution from open burning*. Consistent with this goal, Objective 2 (above) was established early on as a project objective. As such, it has always been the intent of the project to displace open burning and the EIR—and more specifically the greenhouse gas emissions analysis in Section 10, Greenhouse Gas Emissions and Climate Change—was predicated on an assumption that fuel for the Cabin Creek Biomass Facility Project would be limited to “biomass that would otherwise be open burned.” (Placer County 2012a: page 10-3)

The Center's letters of appeal challenge this assumption and assert that “nothing in the EIR or the proposed conditions of approval limits the Project's fuel mix” to materials that would otherwise be open burned. Therefore, to clarify the intent of the project and its role in addressing the fire risk and air quality effects of open burned woody biomass material, additional conditions of approval have been included to clarify fuel sourcing and ensure fuel is limited to materials that would otherwise be open burned. The new conditions are listed below and will be recommended for consideration by the Board at the public hearing for the appeal of the Cabin Creek Biomass Facility Project.

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1. The Cabin Creek Biomass Facility shall accept only woody biomass material (fuel) that would have otherwise been piled and burned in its place of origin. For purposes of this condition, the term “woody biomass material” is defined and limited to the following:
  - a. Forest-sourced material (virgin, untreated wood, leaves, needles, etc.),
  - b. Forest thinning and harvest residuals (residual material from ongoing forest management activities that has no, or limited, market value), and
  - c. Clean wildland/urban interface (WUI)-sourced waste materials (WUI materials are piles of small trees, limbs, brush and trimmings resulting from defensible space clearing projects)

The woody biomass materials may be accepted by the contracted hauler to the facility from either public or private lands subject to the following standards and limitations:

**Public Lands:** Woody biomass shall be accepted only if prior written documentation is presented to the hauler that the biomass was collected and piled pursuant to a project approved by all appropriate agencies following full compliance with NEPA or CEQA and all other applicable laws. A record of the approval decision and copies of the NEPA or CEQA documents (if applicable) must be produced prior to collection by the contracted hauler to the facility. The documents must include written proof that the material would have been burned in the open if not procured as biomass fuel. If the approval documents are finalized prior to the plant commencing operation and there is no language in the same regarding open burning, the plant may accept the woody biomass with written verification from the approving agencies or USFS.

**Private Property:** Woody biomass collected from a “Defensible Space Clearance Project” may be accepted by the plant. A “Defensible Space Clearance Project” means an activity designed to clear defensible space from the area immediately surrounding a home or occupied structure as required or recommended by applicable CALFIRE guidelines or local ordinances and regulations. The private property owner must verify in writing that the woody biomass would have otherwise been open burned. Verification can be in the form of prior burn permits obtained from the local Air Pollution Control District.

2. The applicant shall accept woody biomass deliveries only from contractors with prior written executed agreements with the applicant (or operator of the facility) or haulers who have existing written agreements with a local, state or federal agency (the latter shall be required to file a copy of the agreement with the applicant before beginning deliveries) or directly from local, state or federal agency haulers.

Each hauler must present a County-prepared form executed and dated by each owner or manager of the property that is the source of the woody biomass contained in that hauler’s truck. Said form shall require the following information be included: source location, property owner or manager contact information, estimated volume/weight, date of pick up and a property owner (or manager) executed verification that the woody biomass would have been otherwise open burned in the place of origin if not sent to the facility. If the hauler transports from multiple locations, the hauler must obtain a form from each location.

If the hauler does not produce the required form(s), the applicant (or facility operator) shall turn the hauler away and not permit any of the fuel in the truck to be deposited at the facility.

3. No woody biomass material shall be accepted at the facility directly from a private property owner.
4. No biomass material that is initially processed at the Materials Recovery Facility/Transfer Station at Cabin Creek shall be utilized within the Cabin Creek Biomass Facility.
5. Monitoring and Enforcement:

- a. The applicant (or operator of the facility) shall record and maintain daily information logs sufficient to identify the source of each delivery of woody biomass. This information shall include: source location, estimated volume/weight and date for all incoming loads of biomass material to the site.
- b. Executed County-prepared forms collected from the haulers shall be maintained together with the name of the person or company responsible for processing and transporting the biomass fuel to the facility.
- c. By January 31 of each calendar year, the applicant (or operator) shall prepare a report disclosing the characteristics and qualities of all woody biomass delivered to and processed at the facility for the previous calendar year. The information provided in the report shall be sufficiently detailed to allow verification of compliance with all conditions of approval. A copy of said report shall be lodged with the Placer County Community Development/Resources Agency no later than January 31 of each calendar year.
- d. All of the above information shall be considered public records.
- e. All of the above shall be maintained by the applicant (or operator of the facility) for a five year period.
- f. The Placer County Board of Supervisors may, at its discretion, require the report generated in subsection c. be reviewed by the Planning Commission during a public hearing for any given year.
- g. The Placer County Board of Supervisors may, at its discretion and for any length of time, appoint a volunteer committee to review or monitor the biomass procurement, processing and/or delivery processes to ensure compliance with the conditions of approval.

The addition of these conditions does not trigger any of the conditions listed in Section 15162 of the CEQA Guidelines. Because the addition of these conditions supports the analysis contained in the EIR, their addition does not constitute new information of substantial importance and would not create new significant effects or more severe previously evaluated effects.

### 3.3 EIR REVISIONS AND CORRECTIONS

This section includes revisions to the EIR text following its certification by the Commission on December 20, 2012. The changes are presented in the order in which they appear in the original Draft EIR or Final EIR and are identified by page number. The changes shown in this section include staff-initiated text modifications or corrections intended to clarify certain descriptions of fuel sourcing to match the intent of the project. Revisions are shown as excerpts from the Draft and Final EIR text, with strikethrough (~~strikethrough~~) text for deletions and underline (underline) text for additions.

These revisions include minor refinements to EIR text, and do not constitute "major revisions." Because the following revisions do not alter EIR significant conclusions or mitigation measures, they do not trigger any of the conditions in Section 15162 of the CEQA Guidelines that would require preparation of a subsequent EIR.

**Chapter 2, Executive Summary, on page 2-1, the last paragraph is revised as follows:**

Biomass materials (fuel for the plant) would be processed (ground and screened) at the locations from which they are removed (such as U.S. Forest Service [USFS] fuels reduction sites) and delivered via haul truck to the project site. No additional wood material processing would occur at the project site ~~beyond that which is already occurring in association with current Eastern Regional MRF and Transfer Station wood waste handling activities at their site. As needed, additional fuel for the plant (potentially during extended winters) could include wood waste materials (forest waste biomass) already being processed at the Eastern Regional MRF and Transfer Station.~~

**Chapter 2, Executive Summary, on page 2-7, the text of Impact 5-3 in Table 2-1 is revised as follows:**

**Impact 5-3. Modification of Forest Habitat Through Use of Woody Biomass.** The fuel source for the proposed biomass facility would be woody biomass acquired primarily from hazardous fuel removal, forest thinning, and other forest management activities. Removal of woody biomass from the surrounding forests could modify habitat for common and special-status species, degrade sensitive habitats, and/or result in fill of jurisdictional waters of the U.S. However, forest projects that would generate the woody biomass are separate projects independent from the proposed project, and are subject to separate environmental review and permitting. The generation of woody biomass would occur regardless of the proposed biomass project. Disposal of the woody biomass at the proposed facility in lieu of ~~other disposal methods such as~~ pile burning would not have a substantial affect on biological resources. Therefore, the use of the forest residuals as a fuel source for the project is considered to have a **less-than-significant** impact on biological resources.

**Chapter 3, Project Description, on page 3-7, the last paragraph is revised as follows:**

Biomass materials (fuel for the plant) would be processed (ground and screened) at the locations from which they are removed (such as USFS fuels reduction sites) within an approximate 20- to 30-mile radius of the site and delivered via haul truck to the project site. While the Eastern Regional MRF and Transfer Station conducts wood processing activities, no additional wood material processing would occur as a result of this project. All project-related processing would occur at in-field sites and then would be deposited and stored at the biomass facility for use in the electrical generation process. ~~While not anticipated to be needed, if fuel supplies for the biomass facility are low (potentially during extended winter months), the wood waste material (forest waste biomass) already processed at the Eastern Regional MRF and Transfer Station could be available as additional biomass fuel supply for the biomass facility provided the material meets all the of the necessary fuel specifications (see discussion of source material specifications below).~~

**Chapter 3, Project Description, on page 3-11, the first paragraph is revised as follows: (Note: these revisions incorporate changes included on page 3-2 of the Final EIR.)**

### 3.4.3 WOODY BIOMASS FUEL SUPPLY

The fuel supply for the proposed project would be solely woody biomass, derived from ~~a variety of sources limited to including~~ forest-sourced material, including (hazardous fuels residuals ~~{(i.e., woody biomass material that poses a substantial fire threat to human or environmental health)}~~, forest thinning and harvest residuals ~~{(i.e., woody biomass generated from forest maintenance and restoration activities)}~~, and clean Wildland Urban Interface (WUI; generally areas within ¼-mile of urban centers where materials would otherwise be piled and burned)-sourced waste materials from ~~residential and commercial property defensible space clearing and property management activities; materials that would be limited to those that would otherwise be piled and burned, which would include brush and yard clippings, tree trimmings and pine needles~~. The facility would be certified as a renewable energy facility by the CEC based on California Public Resources Code (PRC) Section 25740, 25741 et seq. the proposed sole use of renewable woody biomass as its only fuel source. As stated in California Public Resources Code (PRC) Section 25743(f), the CEC categorizes facilities generating electricity from biomass energy as in-state renewable electricity generation facilities if they report to the CEC the types and quantities of biomass fuels used and certify to the satisfaction of the Commission that the fuel utilization meets certain requirements including:

**Chapter 3, Project Description, on page 3-11, the first paragraph is revised as follows:**

According to the biomass fuel procurement study, transportation costs are such that use of most of this material at other biomass power plants would be economically infeasible. Transport costs are significant and Placer County is working with land management agencies to cost share the collection, processing, and transport expenses for biomass material that is currently open pile burned ~~or masticated (chipped and scattered)~~ (Placer

County Planning Department 2011). Only material that would have otherwise been piled and burned would be transported to and used at the Cabin Creek Biomass Facility.

**Chapter 3, Project Description, on page 3-11, the third paragraph is revised as follows:**

The Applicant has secured access to a majority of the forest-sourced woody biomass waste material from the Lake Tahoe Basin via a contract with the USFS, Lake Tahoe Basin Management Unit. With a Master Stewardship Agreement (MSA), Placer County has a 10-year period to remove the woody biomass waste material from federally managed forest lands (for projects that have completed National Environmental Policy Act [NEPA] review). All MSA contracts are limited to up to 10 years under current law. The MSA can be re-negotiated for extensions. Placer County is currently negotiating a similar contract with the USFS, Tahoe National Forest to conduct similar activities. Within these MSA's, the USFS would assist in the cost of the removal of material that would otherwise be piled and burned ~~or masticated~~. Contractor's to the Applicant would then process and remove material that would be brought to the facility for energy production at the Cabin Creek facility. Only material that would have otherwise been piled and burned would be transported to and used at the Cabin Creek Biomass Facility. Similar contracts with local public agencies (e.g. fire districts) and business are also being developed to support the facility and provide each agency with a sustainable option to remove tree waste biomass rather than open burning.

**Chapter 3, Project Description, on page 3-16, the last sentence of the first paragraph is deleted as follows:**

~~If additional winter-time biomass fuel supply is needed, fuel suitable for energy production would be obtained onsite at the existing Eastern Regional MRF and Transfer Station facility.~~

**Chapter 3, Project Description, on page 3-16, the last sentence of the third full paragraph is deleted as follows:**

The one-acre storage area would be able to accommodate approximately five months of fuel (i.e., 7,100 BDT) in large storage piles. To avoid spontaneous combustion, the woody biomass fuel would be compacted in the fuel yard. ~~In the event that additional fuel may be needed during the winter, chipped material would be hauled from the wood debris area at the Eastern Regional MRF and Transfer Station facility.~~

**Chapter 5, Biological Resources, on page 5-19, the text of Impact 5-3 and the first paragraph of the discussion following the impact statement are revised as follows:**

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**Impact 5-3**     **Modification of Forest Habitat Through Use of Woody Biomass.** The fuel source for the proposed biomass facility would be woody biomass acquired primarily from hazardous fuel removal, forest thinning, and other forest management activities. Removal of woody biomass from the surrounding forests could modify habitat for common and special-status species, degrade sensitive habitats, and/or result in fill of jurisdictional waters of the United States. However, forest projects that would generate the woody biomass are separate projects independent from the proposed project, and are subject to separate environmental review and permitting. The generation of woody biomass would occur regardless of the proposed biomass project. Disposal of the woody biomass at the proposed facility in lieu ~~of other disposal methods such as~~ pile burning would not have a substantial affect on biological resources. Therefore, the use of the forest residuals as a fuel source for the project is considered to have a **less-than-significant** impact on biological resources.

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The proposed biomass facility would use woody biomass derived from forest sources ~~and clean urban sources~~. The forest sources would include forest residuals generated from hazardous fuel reduction, forest thinning for stand-level management, wildlife habitat enhancement, or other forest management activities conducted by the Tahoe National Forest (TNF) and Lake Tahoe Basin Management Unit (LTBMU) of USFS. Placer County's intention is to primarily use biomass generated from these USFS projects especially in light of the substantial sources of

these materials to meet the facilities needs over the next 10 to 15 years; however, over its lifetime, the biomass facility may use ~~clean urban sources of fuels, such as tree trimmings, pine needles, and clean (untreated) construction and demolition wood (e.g., pallets),~~ and forest sources on state or private land as well. Materials would be limited to those that would otherwise be piled and burned.

**Chapter 8, Traffic and Transportation, on page 8-13, the first paragraph is revised as follows:**

The forest thinning season, when biomass material is collected from locations around Lake Tahoe, is limited to the dry seasons. For analysis purposes it was assumed that all material would be collected from May 1 to October 15, to coordinate with Lake Tahoe's construction season. However, collection may occur outside this window, which would ultimately reduce the total daily truck trips because the same volume of material would be collected. The material collection period will be referred to as "summer" for the remainder of this chapter. Because material would not likely be collected during the remainder of the year (October 16 to April 30), a sufficient supply would need to be stored onsite for continual operation of the biomass plant during the "winter" season. ~~For occasions when a back-up winter supply is needed, fuel would be obtained from the existing Eastern Regional MRF operations. These materials are already being delivered to the Eastern Regional MRF for processing under the current solid waste facilities permit; therefore, no new trips would be generated for the back-up winter supply.~~

**Chapter 11, Noise, on page 11-17, the third full paragraph is revised as follows:**

As discussed in the project description, material transported to the site would be unloaded and stored in the covered materials storage structure as well as the uncovered storage area. Onsite equipment would include a diesel-fueled wheeled loader used to move material into piles in the storage building (and uncovered storage area) and then to push material into the system that feeds the gasification equipment. The loader would also be used to load the biochar into outgoing haul trucks. ~~Should more material be needed (beyond the four to five months) during the winter, chipped material would be hauled from the wood debris area at the Eastern Regional MRF and Transfer Station facility located within the same complex.~~ Based on reference noise values and accounting for typical usage factors of individual pieces of equipment, such activities could result in noise levels of approximately 82 dB  $L_{eq}$  and 86 dB  $L_{max}$  at a distance of 50 feet. Activities within the fuel storage yard would be limited to the less noise-sensitive daytime hours.

**Chapter 18, Other CEQA Sections, on page 18-33, the fourth paragraph is revised as follows:**

As described in Impact 5-3, the project would not harvest forest residuals and would not otherwise directly cause specific fuel reduction or forest management projects to occur; rather, the project would enable waste products from independent forest projects to be sold as biomass fuel instead of requiring an alternate disposal mechanism (i.e., such as pile burning). The woody biomass fuel source for the project would be derived from independent projects that would require compliance with existing laws and regulations. The projects that could generate forest residuals for use as biomass are likely to occur regardless of whether the proposed facility is in operation because the TNF, LTBMU, or other land managers, such as California Tahoe Conservancy, California State Parks, and local fire protection districts have existing, and planned forest management projects that would occur without the project. In the absence of the project, the residual forest material would ~~normally~~ be burned in piles, ~~chipped in place, or otherwise treated on site.~~ Because of the substantial past, existing, and planned forest management projects, this project's demand for forest residual biomass would be highly unlikely to change the forest management goals of TNF, LTBMU, or other land managers, such as California Tahoe Conservancy, California State Parks, and local fire protection districts (Conway, pers. comm., 2012, Fournier, pers. comm., 2012).

## 4 CONCLUSIONS

Nothing in the Center's appeal presents substantial evidence of deficiencies in the EIR. The information in this Addendum clarifies the analysis already provided in the EIR, and no new impacts or increases in the severity of

impacts in the EIR would result from the inclusion of the information (i.e., responses to appeal and added conditions) contained in this Addendum.

In summary, this Addendum demonstrates that: (1) none of the issues raised by the appellant are new; (2) all of the appellant's concerns have already been responded to in the Final EIR—the Final EIR is cross-referenced in this Addendum; (3) CEQA issues raised in the Center's appeal are without merit; (4) the proposed additional conditions of approval for the project support and are consistent with the EIR analysis on fuel sourcing; and (5) demonstrate that the addition of these conditions does not trigger the need for a subsequent EIR (Section 15162[a]).

## 5 REFERENCES

ARB. See California Air Resources Board

Baker, Stephen. Chemist. Fire, Fuel, and Smoke Science, Missoula Fire Sciences Laboratory, USDA Forest Service. 2013 (February 15). Email to Austin Kerr of Ascent Environmental on February 15, 2013—Re: Relationship between burn temperature and methane emissions.

BLM. See U.S. Bureau of Land Management.

Busse, Matt; Shestak, C., Hubbert, K., Knapp, E. 2010. Soil Physical Properties Regulate Lethal Heating during Burning of Woody Residues. *Soil Science Society of America Journal*, Vol. 74:947-955.

California Air Resources Board 2011. *Status of Scoping Plan Recommended Measures*. Available: [http://www.arb.ca.gov/cc/scopingplan/status\\_of\\_scoping\\_plan\\_measures.pdf](http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf). Accessed May 2, 2012.

———. 2012. ARB's Regulation for the Mandatory Reporting of GHGs – 2010 Regulation. Available: [http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr\\_2010\\_clean.pdf](http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr_2010_clean.pdf), which is hyperlinked to [http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/2010\\_regulation.htm](http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/2010_regulation.htm). Page last updated June 13, 2012. Accessed June 20, 2012.

California Climate Action Registry. 2009 (January). *California Climate Action Registry General Reporting Protocol*, Version 3.1. Los Angeles, CA. Available: [http://www.climateregistry.org/resources/docs/protocols/grp/GRP\\_3.1\\_January2009.pdf](http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf). Accessed May 2, 2012.

CCAR. See California Climate Action Registry.

Conway, Scott. Vegetation Management Officer for the U.S. Forest Service, Tahoe National Forest. 2012 (May 2). Telephone conversation with Linda Leeman of Ascent Environmental on May 2, 2012.

EPA. See. U.S. Environmental Protection Agency.

Finkral, Alex; Evans, A.; Sorensen, C.; Affleck, D. 2012. Estimating Consumption of Remaining Carbon in Burned Slash Piles. *Canadian Journal of Forest Research*, Vol. 42: 1744-1749.

Fournier, Dave. Assistant Vegetation Management Officer, U.S. Forest Service, Lake Tahoe Basin Management Unit. 2012 (April 26). Telephone conversation with Linda Leeman of Ascent Environmental on April 26, 2012.

- Garcia-Corona, R., E. Benito, E. de Blas, and M.E. Varela. 2004. Effects of heating on some soil physical properties related to its hydrological behaviour in two north-western Spanish soils. *International Journal of Wildland Fire* 13:195–199. As cited in Busse et al. 2010.
- Gaffney, Patrick. Staff Air Pollution Specialist. California Air Resources Board, Planning and Technical Support Division, Emission Inventory Branch, Climate Change Reporting Section. 2013 (February 4). Telephone conversation with Austin Kerr of Ascent Environmental on February 4, 2013—Re: Methodologies for estimating GHG emissions from biomass gasification power plants and open burning.
- Glass, D.W., D.W. Johnson, R.R. Blank, and W.W. Miller. 2008. Factors affecting mineral nitrogen transformations by soil heating: A laboratory-simulated fire study. *Soil Science* 173:387–400.
- Governor’s Office of Planning and Research. 2008. CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review. Available: <http://opr.ca.gov/docs/june08-ceqa.pdf>.
- Hardy, Colin C. 1996. Guidelines for Estimating Volume, Biomass, Smoke Production for Piles Slash. U.S. Forest Service General Technical Report PNW-GTR-364.
- IPCC. See Intergovernmental Panel on Climate Change.
- Intergovernmental Panel on Climate Change. 2006. *Guidelines for National Greenhouse Gas Inventories, Volume 4, Agriculture, Forestry and Other Land Use*. Hayama, Kanagawa, Japan. Available: <[http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4\\_Volume4/V4\\_02\\_Ch2\\_Generic.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_02_Ch2_Generic.pdf)>. Accessed June 2010.
- Kavalec, Chris and Tom Gorin, 2009. California Energy Demand 2010-2020, Adopted Forecast. Publication Number: CEC-200-2009-012-CMF. See Form 1.1, Total Electricity Consumption by Sector, on the spread sheets. Available: <<http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html>>. Accessed May 5, 2012.
- Knapp, Eric; Keeley, J.E., Ballenger, E. A., Brennan, T.J. 2005. Fuel reduction and coarse woody debris dynamics with early season and late season prescribed fire in a Sierra Nevada mixed conifer forest. *Forest and Ecology Management* 208: 383-397.
- Massman, W.J. and Frank, J.M. 2008. Effect of a Controlled Burn on the Thermophysical Properties of a Dry Soil Using a New Model of Soil Heat Flow and New High Temperature Heat Flux Sensor. *International Journal of Wildland Fire*, 13:247-442.
- National Energy Technology Laboratory. 2011 (October 24). Life Cycle Greenhouse Gas Inventory of Natural Gas Extraction, Delivery, and Electricity Production. Available: <http://www.netl.doe.gov/energy-analyses/pubs/NG-GHG-LCI.pdf>
- National Renewable Energy Laboratory. 2000 (September). Life Cycle Assessment of a Natural Gas Combined-Cycle Power Generation System. Golden, CO. Available: <http://www.nrel.gov/docs/fy00osti/27715.pdf>.
- NETL. See National Energy Technology Laboratory.
- NREL. See National Renewable Energy Laboratory.
- OPR See Governor’s Office of Planning and Research.

Placer County, Community Development Resource Agency. 2007 (October). *Strategic Plan for the Wildfire Protection and Biomass Utilization*. Auburn, California.

\_\_\_\_\_. 2012a (July 27). *Cabin Creek Biomass Facility Project, Draft EIR, Volume 1, SCH#2011122032*. Auburn, California.

\_\_\_\_\_. 2012b (December 4). *Cabin Creek Biomass Facility Project, Final EIR, SCH#2011122032*. Auburn, California.

SCAQMD. See South Coast Air Quality Management District.

South Coast Air Quality Management District. 2011. California Emissions Estimator Model (CalEEMod) Version 2011.1.1. Available: <http://www.caleemod.com>.

Springsteen, Bruce, Senior Air Pollution Engineer. June 26, 2012—e-mail to Austin Kerr of Ascent Environmental regarding the greenhouse gas analysis of the proposed Cabin Creek biomass facility.

Springsteen, Bruce; Christofk, T.; Eubanks, S.; Mason, T.; Clavin, C.; Storey, B. 2011 (January). Emission Reductions from Woody Biomass Waste for Energy as an Alternative to Open Burning. *Journal of the Air & Waste Management Association*, 61:63-68.

Tornatore, Fred. Chief Technical Officer. TSS Consultants. May 8, 2012—telephone conversation with Austin Kerr of Ascent Environmental regarding the amount of electricity from the Grid consumed by the biomass plant.

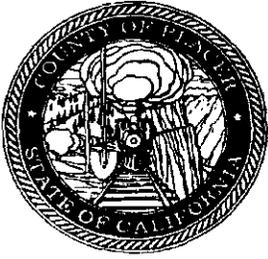
U.S. Bureau of Land Management. [no date]. Emission reduction techniques used in burning of piled juniper slash. A power point presentation by the BLM Salt Lake Field Office.

U.S. Environmental Protection Agency. 2011a. Methane—Sources and Emissions. Available <http://www.epa.gov/outreach/sources.html>.

\_\_\_\_\_. 2011b (March). PSD and Title V Permitting Guidance for Greenhouse Gases. Available: <http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf>. Accessed May 3, 2012.

\_\_\_\_\_. 2011c (March). Guidance for Determining Best Available Control Technology for Reducing Carbon Dioxide Emissions from Bioenergy Production. Available: <http://www.epa.gov/nsr/ghgdocs/bioenergyguidance.pdf>.

Ward, D.E. and Susott, R.A. USDA Forest Service, Rocky Mountain Research Station, Intermountain Fire Sciences Laboratory, Fire Chemistry, Project 4404. 1988 (January). *Smoke Emissions from Ponderosa Pines Fuels Exposed to a Variety of Fire Histories and Site Preparation Treatments, Final Report for Arizona Burns in 1993 and 1994*.



**RECOMMENDED CONDITIONS OF APPROVAL –  
CONDITIONAL USE PERMIT - "CABIN CREEK BIOMASS  
FACILITY" (PCPJ 20110376)**

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***THE FOLLOWING CONDITIONS SHALL BE SATISFIED BY THE APPLICANT, OR AN AUTHORIZED AGENT. THE SATISFACTORY COMPLETION OF THESE REQUIREMENTS SHALL BE DETERMINED BY THE DEVELOPMENT REVIEW COMMITTEE (DRC), COUNTY SURVEYOR, AND/OR THE PLANNING COMMISSION.***

1. This Conditional Use Permit (PCPJ 20110376) is approved to allow for the construction and operation of a two megawatt wood-to-energy biomass facility on APN 080-070-016. The facility shall process a maximum of 17,000 equivalent Bone Dry Tons (BDT) of biomass material annually.
2. The Cabin Creek Biomass Facility shall accept only woody biomass material (fuel) that would have otherwise been piled and burned in its place of origin. For purposes of this condition, the term “woody biomass material” is defined and limited to the following:
  - a. Hazardous fuels reduction residuals (woody biomass material that poses a substantial fire threat to human or environmental health),
  - b. Forest thinning and harvest residuals (residual material from ongoing forest management activities that has no, or limited, market value), and
  - c. Clean wildland/urban interface (WUI)-sourced waste materials (small trees, limbs, brush and trimmings) resulting from defensible space clearing projects.

The woody biomass materials may be accepted by the contracted hauler to the facility from either public or private lands subject to the following standards and limitations:

Public Lands: Woody biomass shall be accepted only if prior written documentation is presented to the hauler that the biomass was collected and piled pursuant to a project approved by all appropriate agencies following full compliance with NEPA and/or CEQA and all other applicable laws. A record of the approval decision and copies of the NEPA/CEQA documents (if applicable) shall be produced prior to collection by the contracted hauler to the facility. The documents shall include written proof that the material would have been piled and burned in the open if not procured as biomass fuel. If the approval documents are finalized prior to the plant commencing operation and there is no language in the same regarding open burning, the plant may accept the woody biomass with written verification from the approving agencies or USFS that the material otherwise would have been piled and burned in the open.

Private Property: Woody biomass collected from a “Defensible Space Clearance Project” may be accepted by the plant. A “Defensible Space Clearance Project” means an activity designed to clear defensible space from the area immediately surrounding a residence or occupied structure as required or recommended by applicable CALFIRE guidelines or local ordinances and regulations. The private property owner shall verify in writing that the woody biomass would have otherwise been open burned. Verification may be in the form of prior burn permits obtained from the local Air Pollution Control District, provided such burn permits were issued after the later of (i) February 9, 2012, or (ii) the effective date of any subsequent amendment to applicable Air Pollution Control District rules or other local ordinances or rules governing open burning.

3. The applicant shall accept woody biomass deliveries only from contractors with prior written executed agreements with the applicant (or operator of the facility) or haulers who have existing written agreements with a local, state or federal agency (the latter shall be required to file a copy of the agreement with the applicant before beginning deliveries) or directly from local, state or federal agency haulers.

Each hauler shall present a County-prepared form executed and dated by each owner or manager of the property that is the source of the woody biomass contained in that hauler’s truck. Said form shall require the following information: source location, property owner or manager contact information, estimated volume/weight, date of pick up and a written certification executed by the property owner (or manager) that the woody biomass otherwise would have been piled and open burned in the place of origin if not sent to the facility. If the hauler transports from multiple locations, the hauler shall obtain a form from each location.

If the hauler does not produce the required form(s), the applicant (or facility operator) shall turn the hauler away and not permit any of the fuel in the truck to be deposited at the facility.

4. No woody biomass material shall be accepted at the facility directly from a private property owner.
5. The following materials shall not be utilized as fuels for the Cabin Creek Biomass Facility:
  - a. Materials initially processed at the Eastern Regional Materials Recovery Facility/Transfer Station at Cabin Creek.
  - b. Materials from urban sources, including but not limited to clean construction/demolition waste and tree trimmings.
  - c. Any materials not meeting the definitions set forth in Condition 2.

6. On or before February 16, 2016, and at five-year intervals thereafter, the County shall review and update the Fuel Procurement Plan for the Lake Tahoe Basin Biomass Energy Generation Facility (TSS Consultants Feb. 16, 2011) ("Fuel Procurement Plan"). Such review shall include, but not necessarily be limited to, the following:
  - a. An evaluation of the accuracy and comprehensiveness of the Fuel Procurement Plan with respect to actual availability of biomass materials,
  - b. An updated evaluation of current demand for biomass materials from any other proposed, new, or existing facilities that may obtain fuels and/or feedstocks from within the Core Fuel Supply Area,
  - c. An updated assessment of the amount and sources of biomass materials meeting all Conditions of Approval for the Cabin Creek Biomass Facility that are expected to be available within the subsequent five-year period.
  
7. Prior to proposing any changes or amendments to these Conditions of Approval, the County shall give at least 45 days' notice to any interested individual or organization, including those who submitted comments during the environmental review process for this Conditional Use Permit (PCPJ 20110376)
  
8. Monitoring and Enforcement:
  - a. The applicant (or operator of the facility) shall record and maintain daily information logs sufficient to identify the source of each delivery of woody biomass. This information shall include: source location, estimated volume/weight and date for all incoming loads of biomass material to the site.
  - b. Executed County-prepared forms collected from the haulers shall be maintained together with the name of the person or company responsible for processing and transporting the biomass fuel to the facility.
  - c. By January 31 of each calendar year, the applicant (or operator) shall prepare a report disclosing the characteristics and qualities of all woody biomass delivered to and processed at the facility for the previous calendar year. The information provided in the report shall be sufficiently detailed to allow verification of compliance with all conditions of approval. A copy of said report shall be lodged with the Placer County Community Development/Resources Agency no later than January 31 of each calendar year.
  - d. All of the above information shall be considered public records.
  - e. All of the above shall be maintained by the applicant (or operator of the facility) for a five year period.
  - f. The Placer County Board of Supervisors may, at its discretion, require the report generated in subsection c. be reviewed by the Planning Commission during a public hearing for any given year.

- g. The Placer County Board of Supervisors may, at its discretion and for any length of time, appoint a volunteer committee to review or monitor the biomass procurement, processing and/or delivery processes to ensure compliance with the conditions of approval.

9. The improvement plans for this project are subject to review and approval by the Placer County Development Review Committee (DRC) to ensure project consistency with the mitigation measures established in the Environmental Impact Report, and with the County Code. Such a review and approval shall be conducted prior to site disturbance. In addition to standard infrastructure, utilities and facilities, the improvement plans shall include, but not be limited to, plans for: landscaping; irrigation; signs; exterior lighting; pedestrian and vehicular circulation; parking; fences, walls and building materials. (PSD)

#### **IMPROVEMENTS/IMPROVEMENT PLANS**

10. The Applicant shall ensure that exterior lighting installed at the facility will conform to an approved lighting plan. The exterior lighting plan shall be prepared prior to the issuance of a building permit, and submitted to the County with the project Improvement Plans for approval. Exterior lighting shall be limited to lighting required for safe operations and security purposes. The exterior lighting plan will require at a minimum the following:

- a) Identification of location of lighting, height, and positioning of all light fixtures, and type and style of light fixtures;
- b) Lighting shall be directed downward using fully shielded fixtures or fixtures otherwise designed to prevent light trespass or projection of light above the horizontal, except as needed for safe operations and security;
- c) The height of light poles shall be limited to 20 feet except as needed for operational and safety purposes. Light fixtures are not to exceed the height of adjacent structures.

Ground level illumination levels shall not exceed two foot candles at the project property line.

**(PSD MM 7-3)**

11. The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the County for review and approval. The plans shall show all physical improvements as required by the conditions for the project as well as pertinent topographical features both on and off site. All existing and proposed utilities and easements, on site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan

check and inspection fees (NOTE: Prior to plan approval, all applicable recording and reproduction cost shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or Development Review Committee (DRC) review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the County in both hard copy and electronic versions in a format to be approved by the County prior to acceptance by the County of site improvements.

Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety.

Any Building Permits associated with this project shall not be issued until, at a minimum, the Improvement Plans are approved by the County.

Prior to the County's final acceptance of the project's improvements, submit to the County two copies of the Record Drawings in digital format (on compact disc or other acceptable media) in accordance with the latest version of the Placer County Digital Plan and Map Standards along with two blackline hardcopies (black print on bond paper) and two PDF copies. The digital format is to allow integration with Placer County's Geographic Information System (GIS). The final approved blackline hardcopy Record Drawings will be the official document of record. **(MM 13-1a) (ESD)**

12. The Improvement Plans shall show all proposed grading, drainage improvements, vegetation and tree removal and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the Development Review Committee (DRC). All cut/fill slopes shall be at a maximum of 2:1 (horizontal: vertical) unless a soils report supports a steeper slope and the County concurs with said recommendation. Fill slopes shall not exceed 1.5:1 (horizontal: vertical)

The applicant shall revegetate all disturbed areas. Revegetation, undertaken from April 1 to October 1, shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to ensure proper installation and maintenance of erosion control/winterization before, during, and after project construction. Soil stockpiling or borrow areas, shall have proper erosion control measures applied for the duration of the construction as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the County.

The applicant shall submit to the County a letter of credit or cash deposit in the amount of 110 percent of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/County for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/County to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body. **(MM 13-1b) (ESD)**

13. Staging Areas: The Improvement Plans shall identify the stockpiling and/or vehicle staging areas with locations as far as practical from existing dwellings and protected resources in the area. **(ESD)**

14. The Improvement Plans shall show that water quality treatment facilities/Best Management Practices (BMPs) shall be designed according to the guidance of the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and for Industrial and Commercial (or other similar source as approved by the County such as the Stormwater Quality Design Manual for the Sacramento and South Placer Regions.

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the County. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

All BMPs shall be maintained as required to insure effectiveness. The applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to the County upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the County

upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Subdivision Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance. **(MM 13-1d) (ESD)**

15. Prior to Improvement Plan approval, the applicant shall obtain a State Regional Water Quality Control Board National Pollutant Discharge Elimination System (NPDES) construction stormwater quality permit and shall provide to the County evidence of a state-issued Waste Discharge Identification (WDID) number or filing of a Notice of Intent and fees. **(MM 13-1e) (ESD)**

16. Prior to Improvement Plan approval, provide the County with a copy of the Lahontan Regional Water Quality Control Board approval or permit. **(ESD)**

17. The Improvement Plan submittal shall include a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:

- a) Road, pavement, and parking area design;
- b) Structural foundations, including retaining wall design (if applicable);
- c) Grading practices;
- d) Erosion/winterization;
- e) Special problems discovered on-site, (i.e., groundwater, expansive/unstable soils, etc.)
- f) Slope stability

Once approved by the County two copies of the final report shall be provided to the County and one copy to the Building Services Division for its use. It is the responsibility of the developer to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report. **(MM 12-1) (ESD)**

18. The Improvement Plan submittal shall include a drainage report in conformance with the requirements of Section 5 of the Land Development Manual and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the County for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water

quality protection. "Best Management Practice" measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable. **(MM 13-1c) (ESD)**

Prior to Improvement Plan approval, provide the County with a letter from the appropriate fire protection agency describing conditions under which service will be provided to this project. A representative's signature from the appropriate fire protection district shall be provided on the Improvement Plans. **(ESD)**

19. The Improvement Plans shall include the message details, placement, and locations showing that all storm drain inlets and catch basins within the project area shall be permanently marked/embossed with prohibitive language such as "No Dumping! Flows to Creek." or other language /graphical icons to discourage illegal dumping as approved by the County. County-approved signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, shall be posted at public access points along channels and creeks within the project area. The project owner is responsible for maintaining the legibility of stamped messages and signs. **(ESD)**

20. The Improvement Plans shall show that all stormwater runoff shall be diverted around trash storage areas to minimize contact with pollutants. Trash container areas shall be screened or walled to prevent off-site transport of trash by the forces of water or wind. Trash containers shall not be allowed to leak and must remain covered when not in use. **(ESD)**

21. The Improvement Plans shall show that materials with the potential to contaminate stormwater that are to be stored outdoors shall be placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system, or protected by secondary containment structures such as berms, dikes, or curbs. The storage area shall be paved to contain leaks and spills and shall have a roof or awning to minimize collection of stormwater within the secondary containment area. **(ESD)**

## **ROADS/TRAILS**

22. The Improvement Plans shall show the construction of a public road entrance/driveway onto Cabin Creek to an R-17, Land Development Manual (LDM) standard unless otherwise approved by the County. The design speed of Cabin Creek Road shall be 30 miles per hour (mph), unless an alternate design speed is approved by the Department of Public Works (DPW). The improvements shall begin at the outside edge of any future lane(s) as directed by the DPW and the County. An Encroachment Permit shall be obtained by the applicant from the County. The Plate R-17 structural section within the main roadway shall be designed for a Traffic Index of 6 but said section shall not be less than 3 inches Asphalt

Concrete (AC)/8 inches Class 2 Aggregate Base (AB) unless otherwise approved by the County. **(ESD)**

23. Prior to Improvement Plan approval, final approval of on-site and off-site waterline, sewer line, storm drain routes, and road locations must be obtained from the Development Review Committee. **(ESD)**

24. The Improvement Plans shall show that all on-site parking and circulation areas shall be improved with a minimum asphaltic concrete or Portland cement surface capable of supporting anticipated vehicle loadings.

It is recommended that the pavement structural section be designed in accordance with recommendations of a soils/pavement analysis and should not be less than 2-inch Aggregate Concrete (AC) over 4-inch Class 2 Aggregate Base (AB) or the equivalent. **(ESD)**

#### **PUBLIC SERVICES**

25. Prior to Improvement Plan approval provide to the Development Review Committee "will-serve" letters from the following public service providers , as required:

- a) Liberty Electric
- b) Tahoe City PUD

26. Prior to the approval of the plans, provide the County with proof of notification (in the form of a written notice or letter) of the proposed project to:

- a) Tahoe Truckee Joint School District
- b) The Placer County Sheriff's Office

#### **GENERAL DEDICATIONS/EASEMENTS**

27. Provide the following easements/dedications on the plans to the satisfaction of the County:

- a) Public utility easements as required by the serving utilities, excluding wetland preservation easements (WPE). **(ESD)**
- b) Drainage easements as appropriate. **(ESD)**
- c) Provide private easements for existing or relocated water lines, service/distribution facilities, valves, etc., as appropriate. **(ESD)**

## **VEGETATION & OTHER SENSITIVE NATURAL AREAS**

28. a) To reduce the loss of Jeffrey pine forest and protect individual trees on the project site, the Applicant shall conduct a tree survey to determine the number and size of trees to be removed. The number of trees to be removed shall be minimized to the extent feasible.

b) The Applicant shall obtain a tree permit from the County, as per the County's Tree Ordinance. As stated in the Tree Ordinance (12.16.080 Replacement program and penalties), the County may condition any tree permit or discretionary approval involving removal of a protected tree upon (a) the replacement of trees in kind, (b) implementation of a revegetation plan, or (c) payment into the County's Tree Preservation Fund. Because the project site would not support replacement trees or the implementation of a revegetation plan, the Applicant shall either replace trees at an offsite location or contribute to the County's Tree Preservation Fund; this will be determined by the County.

The replacement requirement may be calculated based upon an inch for an inch replacement of the removed tree(s) and may require minimum 15 gallon size trees. The total of replacement trees may be required to have a combined diameter of the tree(s) removed. A minimum of 50% of replacement trees will be of a similar native tree. Replacement trees may be planted onsite or in other areas to the satisfaction of the County Planning Services Division. Such replanting must not result in the over-planting of a site such that an unsafe fire condition is created.

The County may decide that if the project site is not capable of supporting all of the replacement trees, the Applicant shall pay the County the current market value, as established by an arborist, forester, or registered landscape architect, of the replacement trees, including cost of installation, to go into a Tree Preservation Fund.

Before Improvement Plans are approved, the Applicant shall provide proof to the County that one, or a combination, of the mitigation options described above has been completed and/or funded. Proof of mitigation fulfillment will also be provided to DFG. **(PSD MM 5-2)**

29. To avoid impacts to nesting birds, trees and other vegetation shall be removed from the project site during the non-breeding season (September 1 to March 30) to the extent feasible.

If vegetation removal is scheduled to occur during the nesting season (April 1 to August 31), the Applicant shall retain a qualified biologist to conduct preconstruction surveys in suitable habitat on the project site. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction. Survey results shall be sent immediately to Placer County Planning Services Division and to the California Department of Fish and Game (CDFG). If active nests are present on or immediately

adjacent to the project site, Planning Services Division staff shall initiate consultation with CDFG to determine appropriate avoidance measures.

If no nests are found, no further mitigation is required. **(PSD MM 5-1)**

## **CULTURAL RESOURCES**

30. If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains) is made during construction activities at the project site, ground disturbances in the area of the find shall be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant per the California Register of Historic Resources (CRHR) and CEQA Guidelines Section 15064.5 and will develop appropriate mitigation to protect the integrity of the resource and ensure that no additional resources are affected. Mitigation could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery. **(PSD MM 6-1)**

31. Before the start of grading and/or excavation, the Applicant shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, regarding the possibility of encountering paleontological resources at the site, the appearance and types of paleontological resources likely to be seen during project construction, and proper notification procedures should such resources be encountered.

In the event that paleontological resources are discovered during ground disturbing activities, grading and construction work within 100 feet of the find shall be suspended until the significance of the features can be determined by a qualified professional paleontologist as appropriate. A qualified professional paleontologist shall then make recommendations for measures necessary to protect the find, or to undertake data recovery, excavation, analysis, and curation of paleontological materials as appropriate. **(PSD MM 6-3)**

32. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, potentially damaging excavation in the area of the burial shall be halted and the Applicant shall contact the Placer County Coroner and a professional archaeologist to determine the nature and extent of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code, Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code, Section 7050[c]).

If the remains are determined to be those of a Native American, then the following shall occur:

- a. The (State Historic Preservation Office (SHPO), the Applicant, an archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code.
- b. The SHPO shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. Assembly Bill (AB) 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the Applicant shall implement one or more of the following measures:
  - i. record the site with the NAHC or the appropriate Information Center,
  - ii. utilize an open space or conservation zoning designation or easement, and/or
  - iii. record a document with the county in which the property is located.
- c. The County or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify a MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The County may also reinter the remains in a location not subject to further disturbance if the County rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the County. **(PSD MM 6-4)**

## **FEES**

33. This project will be subject to the payment of traffic impact fees that are in effect in this area (Tahoe Resorts Fee District), pursuant to applicable Ordinances and Resolutions.

The applicant is notified that the following traffic mitigation fee(s) will be required and shall be paid to Placer County DPW prior to issuance of any Building Permits for the project:

- a) County Wide Traffic Limitation Zone: Article 15.28.010, Placer County Code

The actual fees paid will be those in effect at the time payment occurs. **(ESD)**

## **ENVIRONMENTAL HEALTH**

34. Prior to the start of operations the proposed facility will comply with requirements as specified by Placer County Environmental Health, the Local Enforcement Agency (LEA), and of the Department of Resources Recycling and Recovery (CalRecycle) in regards to solid woody biomass handling and storage requirements. **(EHS)**

35. The proposed facility will be available for LEA and/or CalRecycle inspection during normal business hours per Title 14 § 17855(a). **(EHS)**

36. All proposed building construction at the proposed project site will comply with Title 27 § 21190(g). **(EHS)**

37. Contact Environmental Health Services, pay required fees, obtain required permits and approvals and drill an additional public water well, to provide a reliable source of water for the proposed project. A maximum day demand calculation, source capacity testing and water quality testing must be submitted to Environmental Health Services as a part of this approval. This condition must be completed prior to issuance of a Building Permit **(EHS)**.

38. The public water system serving the project shall meet all California Code of Regulations and Waterworks Standards. **(EHS)**

39. Prior to final occupancy or use of the additional public water well, contact Environmental Health Services, pay required fees and obtain an amended domestic water supply permit to add a new source to the Eastern Regional Landfill Public Water System. **(EHS)**

40. Submit to Environmental Health Services a “will-serve” letter from the Tahoe City Public Utility District indicating that the district can and will provide sewerage service to the project. The project shall connect the project to this public sewer. **(EHS)**

41. The Applicant shall regularly compact the fuel piles to minimize fire risk in storage piles. The Applicant shall also prepare detailed written procedures for the management of biomass piles to prevent inadvertent combustion and fires, and that

minimize vectors, odors, litter, and human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms. The written procedures shall outline the specific measures that would be implemented to reduce the total pile storage area, and to prevent potential pile fires due to spontaneous combustion. The written procedures shall be subject to review and input by the County LEA, PCAPCD, and the Truckee Fire Protection District prior to initiating operations at the site. These measures shall include at a minimum the following:

- a) A schedule for periodic and random load checks of incoming biomass truckloads;
- b) Restricted public access to the facility (e.g., fencing);
- c) Fire prevention, protection, and control measures, including, but not limited to temperature monitoring of piles at least weekly, adequate water supply for fire suppression, and the isolation of potential ignition source from the biomass piles;
- d) Fire lanes between piles shall be provided to allow fire control equipment access to all operational areas;
- e) Daily visual inspections of the storage piles to observe whether temperature-related effects are occurring (e.g., steam); and
- f) Leachate shall be controlled to prevent contact with the public.

As necessary, measures such as moisture management (e.g., wetting), pile aeration, tarping, among others could be implemented to optimally manage the storage piles.

**(EHS)(MM16-4)**

42. If during site preparation and construction activities, previously undiscovered or unknown evidence of hazardous materials contamination is observed or suspected through either obvious or implied measures (e.g., stained or odorous soil, unknown storage tanks, etc.), construction activities in the area of the find shall immediately cease. Placer County Environmental Health Division staff shall be immediately consulted and a qualified consultant registered in DTSC's Registered Environmental Assessor Program will be contracted to assess the situation. Based on the assessment, the Applicant shall implement necessary remediation activities including but not limited to removal of soil and debris, treatment of contaminated groundwater, and capping the site prior to development. All required remediation shall include a DTSC Remedial Action Work Plan or equivalent. Based on consultation between the Registered Environmental Assessor and DTSC, remediation of the site shall be conducted consistent with all applicable regulations.

**(EHS)(MM 16-1)**

43. Include the following standard note on the Improvement Plans: If at any time during the course of constructing the proposed project, evidence of soil and/or groundwater contamination with hazardous material is encountered, the applicant shall immediately stop the project and contact the Environmental Health Services (EHS) Hazardous Materials Section. The project shall remain stopped until there is resolution of the contamination problem to the

satisfaction of EHS and to the Central Valley Regional Water Quality Control Board/ Lahontan Water Quality Control Board. (EHS)

44. If Best Management Practices are required by the Engineering and Surveying for control of urban runoff pollutants, then any hazardous materials collected during the life of the project shall be disposed of in accordance with all applicable hazardous materials laws and regulations. (EHS)

### **AIR POLLUTION**

45. As indicated in the EIR, biomass material shall be hauled out of USDA forests in chip vans, which have a capacity of 12.5 BDT or 93 cubic yards and forest material would only be recovered from locations that are accessible by chip vans using existing roads. A maximum of 1,360 truckloads (in chip vans) are allowed to be delivered per year, or a maximum of 22 chip van truck loads per day. In addition to the large delivery vehicles, smaller biomass material delivery from state and local agency Wildland Urban Interface (WUI) projects and biochar haul out trucks could be used as long as the cumulative air emission based on 1,360 12.5 BDT volume chip vans is not exceeded.

46. A maximum continuous flow of water required by the gasification system would be 10 gallons per minute (gpm), and 14,400 gallons per day (gpd).

47. All forest sourced material used at the facility is required to meet the following fuel specifications:

- a) The maximum moisture content for the wood fuel shall be 50 percent by weight. Moisture content prior to consumption must be determined in accordance with the American Society for Testing and Materials (ASTM) specifications and procedures, or equivalent. Should wood fuel be delivered that exceeds 50 percent moisture, it shall be stored onsite for additional drying until such time that the moisture content specification is met.
- b) The Higher Heating Value (HHV) of the fuel must be a minimum average of 8,300 British Thermal Units (BTU) per dry pound on an average annual basis. The ash content cannot exceed three percent by dry weight of each delivery. Periodic and representative samples of fuel delivered to the Cabin Creek facility would be collected and tested by a third party testing service, and submitted to the County on an annual basis, to confirm that fuel specifications for heat and ash content are being met. If fuel is delivered that does not meet minimum specifications, the applicant would work directly with fuel suppliers to improve collection and processing procedures to assure that delivered fuel meets specifications. If fuel specifications are not met after repeated attempts to improve

fuel quality, then fuel deliveries from non-complying supplier(s) will be discontinued.

48. All "Wildland Urban Interface" (WUI) sourced material used at the facility would be required to meet the following fuel specifications:

- a) The maximum moisture content for the wood fuel must be 30 percent by weight. Moisture content with respect to any delivery wood would be determined in accordance with ASTM specifications and procedures, or equivalent. Should wood fuel be delivered that exceeds 30 percent moisture, it would be stored onsite for additional drying until that time that the moisture content specification is met.
- b) The Higher Heating Value (HHV) of the fuel must be a minimum of 7,900 BTU per dry pound on an *average* annual basis. The ash content must not exceed four percent by dry weight of each delivery. Periodic and representative samples of fuel delivered to the Cabin Creek facility would be collected and tested by a third party testing *service*, and submitted to the County on an annual basis, to confirm that fuel specifications for heat and ash content are being met. If fuel is delivered that does not meet minimum specifications, the Applicant would work directly with fuel suppliers to improve collection and processing procedures to assure that delivered fuel meets specifications. If fuel specifications are not met after repeated attempts to improve fuel quality, then fuel deliveries from the non-complying supplier(s) would be discontinued.

49. The Applicant shall not perform any chipping of biomass at the project site.

50. The Applicant shall require haulers who transport biochar from the plant to fully contain all the biochar by *covering* haul trucks or containing the material in closed containers during transport to *prevent* any dust emissions during transport and handling.

51. The Applicant shall prohibit the loader in the fuel yard and diesel trucks that visit the site to idle for more than *five* minutes at the fuel yard, weigh scale, or other areas of the plant. The Applicant shall install a sign that is clearly visible to trucks entering the site that states "Diesel Engine Idling Limited to a Maximum of Five Minutes." The location of this sign shall be clearly demarcated on the building plans.

52. The applicant shall install energy efficient lighting in interior and exterior spaces, including the fuel storage area and the parking lot. In addition, the applicant shall install energy efficient lighting control systems and design buildings to use daylight as an integral part of lighting systems.

53. The applicant shall incorporate additional measures that are consistent with the U.S. Green Building Council's LEED standards in the final project design determined such

as low-flow water fixtures, energy efficient cooling, and water-and energy-efficient landscaping.

54. Include the following standard notes on the Improvement/Grading Plan:

- a) Construction equipment exhaust emissions shall not exceed Placer County APCD Rule 202 Visible Emission limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified by APCD to cease operations and the equipment must be repaired within 72 hours.
- b) The contractor shall suspend all grading operations when fugitive dust exceeds Placer County APCD Rule 228 (Fugitive Dust) limitations. The prime contractor shall be responsible for having an individual who is CARB-certified to perform Visible Emissions Evaluations (VEE). This individual shall evaluate compliance with Rule 228 on a weekly basis. It is to be noted that fugitive dust is not to exceed 40% opacity and not go beyond the property boundary at any time. Lime or other drying agents utilized to dry out wet grading areas shall not exceed Placer County APCD Rule 228 Fugitive Dust limitations. Operators of vehicles and equipment found to exceed opacity limits will be notified by APCD and the equipment must be repaired within 72 hours.
- c) The prime contractor shall be responsible for keeping adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall "wet broom" the streets (or use another method to control dust as approved by the individual jurisdiction) if silt, dirt, mud or debris is carried over to adjacent public thoroughfares.
- d) During construction, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less.
- e) In order to minimize wind driven dust during construction, the prime contractor shall apply methods such as surface stabilization, establishment of a vegetative cover, paving, (or use another method to control dust as approved by the individual jurisdiction).
- f) The contractor shall apply water or use other method to control dust impacts offsite. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.
- g) During construction, no open burning of removed vegetation shall be allowed unless permitted by the PCAPCD. All removed vegetative material shall be either chipped on site or taken to an appropriate recycling site, or if a site is not available, a licensed disposal site.
- h) A person shall not discharge into the atmosphere volatile organic compounds (VOC's) caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance, unless such manufacture or use complies with the provisions Rule 217.

- i) Processes that discharge 2 pounds per day or more of air contaminants, as defined by Health and Safety Code Section 39013, to the atmosphere may require a permit. Permits may be required for both construction and operation. Developers/contractors should contact the District prior to construction and obtain any necessary permits prior to the issuance of a Building Permit. (Based on the California Health & Safety Code section 39013: <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=39001-40000&file=39010-39060>)
- j) Include the following standard note on the Improvement/Grading Plan: During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel powered equipment. (APCD)
- k) Include the following standard note on the Improvement/Grading Plan: During construction the contractor shall utilize existing power sources (e.g., power poles) or clean fuel (i.e. gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators. (APCD)

55. a) Prior to approval of Grading or Improvement Plans, (whichever occurs first), on project sites greater than one acre, the applicant shall submit a Construction Emission / Dust Control Plan to the Placer County APCD. If APCD does not respond within twenty (20) days of the plan being accepted as complete, the plan shall be considered approved. The applicant shall provide written evidence, provided by APCD, to the local jurisdiction (city or county) that the plan has been submitted to APCD. It is the responsibility of the applicant to deliver the approved plan to the local jurisdiction. The applicant shall not break ground prior to receiving APCD approval, of the Construction Emission / Dust Control Plan, and delivering that approval to the local jurisdiction issuing the permit.

b) Include the following standard note on the Grading Plan or Improvement Plans: The prime contractor shall submit to the District a comprehensive inventory (i.e. make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact the APCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the District with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.

c) Prior to approval of Grading or Improvement Plans, whichever occurs first, the applicant shall provide a written calculation to the Placer County APCD for approval by the District demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB statewide fleet average emissions.”

Acceptable options for reducing emissions may include use of newer model year engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The following link shall be used to calculate compliance with this condition and shall be submitted to the Placer County APCD as described above: <http://www.airquality.org/ceqa/> (click on the current "Roadway Construction Emissions Model"). (APCD)

56. Include the following standard note on all building plans approved in association with this project: Stationary sources or processes (i.e. certain types of engines, boilers, heaters, etc.) associated with this project shall be required to obtain an Authority to Construct (ATC) permit from the Placer County Air Pollution Control District prior to the construction of these sources. In general, the following types of sources shall be required to obtain a permit: 1). Any engine greater than 50 brake horsepower, 2). Any boiler that produces heat in excess of 1,000,000 Btu per hour, or 3) Any equipment or process which discharge 2 pounds per day or more of pollutants. Note that equipment associated with residential structures containing no more than 1 to 4 residential units are exempt from this requirement. Developers / contactors should contact the District prior to construction for additional information. *(Based on APCD Rule 501 and the California Health & Safety Code, Section 39013).* (APCD)

57. As required by the Placer County APCD, Landscape Plans shall include native drought-resistant species (plants, trees and bushes) in order to reduce the demand for irrigation and gas powered landscape maintenance equipment. In addition, a maximum of 25% lawn area is allowed on site. As a part of the project design, the applicant shall include irrigation systems which efficiently utilize water (e.g., prohibit systems that apply water to non- vegetated surfaces and systems which create runoff). (APCD)

#### **MISCELLANEOUS CONDITIONS**

58. The applicant shall, upon written request of the County, defend, indemnify, and hold harmless the County of Placer, the County Board of Supervisors, and its officers, agents, and employees, from any and all actions, lawsuits, claims, damages, or costs, including attorney's fees awarded by a certain development project known as the Cabin Creek Biomass Facility (PCPJ20110376). The applicant shall, upon written request of the County, pay or, at the County's option, reimburse the County for all costs for preparation of an administrative record required for any such action, including the costs of transcription, County staff time, and duplication. The County shall retain the right to elect to appear in and defend any such action on its own behalf regardless of any tender under this provision. This indemnification obligation is intended to include, but not be limited to, actions brought by third parties to invalidate any determination made by the County under the California Environmental Quality Act (Public Resources Code Section 21000 et seq.)

for the Project or any decisions made by the County relating to the approval of the Project. Upon request of the County, the applicant shall execute an agreement in a form approved by County Counsel incorporating the provision of this condition. **(CC)**

59. The Improvement Plans shall show for the review and approval by the Development Review Committee the location of any entrance structure proposed by the applicant and shall be located such that there is no interference with driver sight distance as determined by the County, and shall not be located within the right-of-way. Any entrance monument or structure erected within the front setback on any lot, within certain zone districts, shall not exceed 3 feet in height (Ref. Chapter 17, Article 17.54.030, Placer County Zoning Ordinance). **(ESD)**

60. The Improvement Plans shall include a note stating that: During project construction, staking shall be provided pursuant to Section 5-1.07 of the County General Specifications. **(ESD)**

#### **EXERCISE OF PERMIT**

61. The applicant shall have 24 months to exercise this Conditional Use Permit. Unless exercised or extended through approval of an Extension of Time application, this Conditional Use Permit (PCPJ20110376) shall expire on May 7, 2015.



**COUNTY OF PLACER**  
**Community Development/Resource Agency**

Michael J. Johnson, Agency Director

**PLANNING**  
**SERVICES DIVISION**

Paul Thompson  
Deputy Planning Director

**HEARING DATE:** December 20, 2012

**ITEM:** 3

**TIME:** 9:30 AM

**TO:** Placer County Planning Commission  
**FROM:** Development Review Committee  
**DATE:** December 12, 2012  
**SUBJECT: CONDITIONAL USE PERMIT (PCPJ20110376)**  
**CABIN CREEK BIOMASS FACILITY PROJECT**  
**FINAL ENVIRONMENTAL IMPACT REPORT (FEIR)**

**GENERAL PLAN:** Placer County General Plan

**GENERAL PLAN DESIGNATION:** Agriculture/Timberland – 80 Acre Minimum

**ZONING:** FOR-SP (Forest, combining Special Purpose)

**ASSESSOR'S PARCEL NUMBER:** 080-070-016

**STAFF PLANNER:** Gerry Haas, Senior Planner

**LOCATION:** The site is located approximately two miles south of Interstate 80 (I-80) and the Town of Truckee at 900 Cabin Creek Road, 0.30 miles west of State Route (SR) 89.

**APPLICANT:** Placer County

**PROPOSAL:**

Placer County is requesting approval of a Conditional Use Permit to allow for the construction and operation of a two-megawatt (MW) electric power generation facility at the Eastern Regional Materials Recovery Facility (MRF) and Transfer Station. The facility would utilize gasification technology to convert woody biomass material into a synthesis gas, which would then fuel an internal combustion engine/generator that would generate electricity. The proposed project would be located on a 3.7-acre site in the southernmost portion of a County-owned parcel, entirely within Assessor's Parcel Number 080-070-016.

**CEQA COMPLIANCE:**

An Environmental Impact Report has been prepared for this project and has been finalized consistent with the requirements of the California Environmental Quality Act (CEQA). The Draft EIR was released for a 45-day public comment period that started on July 27, 2012 and ended on September 10, 2012. Additionally, the Planning Commission conducted a public hearing to receive comments on the Draft EIR on August 30, 2012. A total of 20 comment letters were provided by State and local agencies, public interest groups and residents. Two individuals also provided verbal

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**ATTACHMENT 5**

comments at the August 2012 Planning Commission hearing. All comments were responded to in the Final EIR, which was made available for public review at the Planning Services Division (Community Development/Resource Agency), The County Clerk's Office, the Tahoe Customs House (County offices), the Truckee Library, the Tahoe City Library and on the County's website. A Notice of Availability of the Final EIR was included in the Sacramento Bee and in the Sierra Sun.

The Final EIR (SCH2011122032) was completed and distributed for a ten-day review period from December 7, 2012 through December 18, 2012. The Planning Commission is required to certify the Final EIR and adopt the Statement of Findings (Attachment D) for the approval of the Conditional Use Permit.

The Draft EIR prepared for the Cabin Creek Biomass Facility project identified the following project impacts as "significant" or "potentially significant":

- Visual Resources
- Biological Resources
- Transportation (cumulatively)
- Hazards and Hazardous Materials
- Geology and Soils
- Hydrology and Water Quality
- Cultural Resources

The Final EIR concluded that the implementation of the mitigation measures described in the Draft EIR would reduce all of these identified impacts to less than significant levels.

**PUBLIC NOTICES AND REFERRAL FOR COMMENTS:**

The project was presented as an Action Item to the Squaw Valley Municipal Advisory Council (SVMAC) on December 6, 2012 and at the North Tahoe Regional Advisory Council (NTRAC) on December 13, 2012. The SVMAC took action (5-0) (O'Keefe, Adriani, Lange, Sheehan and Haneveld) to recommend approval of the project to the Planning Commission. At the time of distribution of this staff report, the NTRAC had not yet taken action on the recommendation. Staff will present the NTRAC recommendation to the Planning Commission at the public hearing for this project on December 20, 2012.

Public notices were mailed to property owners of record within 300 feet of the project site and to all individuals and agencies who provided comment on the DEIR. In addition, a public hearing notice was published in the Sacramento Bee, the Sierra Sun and on the County's website. Copies of the project plans and application were transmitted to the Community Development Resource Agency staff and the Departments of Public Works and Environmental Health Services, the Air Pollution Control District and Facility Services for their review and comment.

**SITE CHARACTERISTICS:**

The project site is in the southernmost 3.7-acre portion of a 148-acre County-owned parcel that is adjoined on the north and west by three other County-owned parcels. The four parcels collectively include 292 acres developed with the Eastern Regional Materials Recovery Facility (MRF) and Transfer Station. The property also includes a former landfill site (approximately 65 acres in size) that was closed and buried in 1995. With the on-site landfill being unavailable for disposal, the MRF and Transfer Station now function to separate, process and deliver recyclable solid wastes to the open market and (in cases of non-recyclable materials) to the Lockwood Regional Landfill in Nevada.

The MRF and Transfer Station buildings, as well as the Placer County Department of Public Works (DPW) road maintenance and Tahoe Area Regional Transit (TART) facilities, are all located within

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the southern portion of the property. The County DPW and TART facilities consist of vehicle storage and maintenance facilities, administrative offices, sand storage for road maintenance, and a compressed natural gas (CNG) fueling station for TART buses. The County DPW and TART facilities are located outside of the fenced MRF and Transfer Station facility, as is the 3.7-acre project site. The project would be located adjacent and south of these facilities.

The natural topography of the project site slopes downhill from the north to the south. Although about one-third of the former landfill site contains coniferous forest, the remainder of the site is heavily impacted by the landfill and surrounding industrial uses. The project site is developed with a caretaker's residence, but is otherwise undisturbed forest, bordered on the east and south by National Forest Service land, managed by the United States Forest Service.

**EXISTING LAND USE AND ZONING:**

	<b>LAND USE</b>	<b>ZONING</b>
<b>SITE</b>	Eastern Regional Materials Recovery Facility and Transfer Site, Former Landfill, Department of Public Works and Tahoe Area Regional Transit Facilities (ERL)	FOR-SP (Forest, combining Special Purpose)
<b>NORTH</b>	ERL	FOR-SP (Forest, combining Special Purpose)
<b>SOUTH</b>	Undeveloped	FOR (Forest)
<b>EAST</b>	Undeveloped	FOR (Forest)
<b>WEST</b>	ERL	FOR-SP (Forest, combining Special Purpose)

**BACKGROUND:**

Many of the forests in Placer County are overgrown with an accumulation of woody biomass due to decades of fire suppression activities. This woody biomass is often in the form of thick undergrowth and dense stands of trees, and contributes to poor forest health in a number of ways. By retaining water in the vegetation, excessive biomass reduces the amount of water that flows out of the forests and into regional water bodies. Overgrown forests can also stress individual trees competing for nutrients and water, increasing the potential for pests and diseases. In addition to impacts on forest health, a lack of wildfires or forest thinning practices encourages the creation of ladder fuels, which can send forest fires into the tree canopies, greatly increasing the risk of catastrophic wildfire. Ultimately, more biomass fuel means hotter and more aggressive fires that are more difficult to contain and more devastating to the land.

Forest thinning practices have been employed in Placer County for many years by agencies such as the US Forest Service and fire districts, as well as by private property owners. Presently, most excess biomass fuels that are removed from overgrown stands are burned in open piles near their place of origin by the land management entities. This open burning creates air and water pollution and reduces the biomass fuels to ash, thereby eliminating any potential to capture the energy stored in the material.

To address the need for forest fuels management, Placer County established the Wildfire Protection and Biomass Utilization Program (hereafter referred to as "Program"). The main goals of the Program are to:

- Reduce the risk of catastrophic wildfires in Placer County
- Protect Placer County citizens and visitors from the consequences of catastrophic wildfires
- Find one or more beneficial uses for excess biomass in Placer County
- Improve air quality in Placer County

The Program represents Placer County's proactive approach in addressing biomass management and has provided the County with the opportunity to lead the state by being the first county to implement elements of the California Bio-Energy Action Plan. It also provides the County with the opportunity to develop partnerships and capitalize on state and federal funding for biomass programs.

The Cabin Creek Biomass Facility project has emerged as a component of the overall Program. The project would implement the Program by providing a biomass to energy facility that will complement existing forest management procedures and enhance the forest ecosystem by offering a viable ecological and economically sustainable program to eliminate forest waste without open burning while providing a low-carbon, non-fossil fuel derived long term source of electrical energy to the community. Utilizing the excess biomass in the generation of clean energy as opposed to open burning would also reduce overall air and water pollution in the region.

Placer County has received a federal grant from the U.S. Department of Energy (DOE) to design and construct a biomass power generating facility within the County, specifically the Cabin Creek site. The proposed Cabin Creek Biomass Facility project will meet many of the objectives spelled out in the DOE biomass program, particularly in providing environmental benefits in reducing air emissions (by diverting biomass from being open burned) and greenhouse gases (replacing fossil fuel use with low carbon biomass). In addition, the biomass project could serve as a model for other communities in forested areas for both economic development and as a significant aid in efforts to reduce catastrophic wildfires.

#### **PROJECT DESCRIPTION:**

The proposed project would include construction of an approximately 11,000 square-foot two-story structure that would house the power generating and emissions control equipment, and an approximately one-acre fuel material storage area. The storage area would include a 7,000 square-foot open canopy structure to allow materials drying before use in the energy generation process. Additional on-site improvements would include eight parking spaces, a paved vehicle circulation area that includes new driveways on Cabin Creek Road and the access road to Tahoe Area Regional Transit (TART) and County Department of Public Works facilities located on the site, a paved haul road south of the material storage area, storm water treatment facilities (including an infiltration trench and detention basin), retaining walls and utility improvements/extensions.

The proposed project would utilize woody biomass that is currently being removed from surrounding United States Forest Service (USFS), State and private land as a result of ongoing wildfire fuels reduction practices. Currently, the USFS, State and private landowners burn this excess material in piles on the site of the forest maintenance activity. The proposed project would capture this renewable source of biomass and, without burning it, would convert the material to gas, which in turn would power an internal combustion engine, turning turbines to produce electricity.

Biomass materials (woody chips utilized as fuel for the plant) would be processed at the locations from which they are removed (such as U.S. Forest Service wildfire fuels reduction sites) and delivered via haul truck to the project site. No additional wood material processing would occur at the project site beyond that which is already occurring in association with current Eastern Regional MRF and Transfer Station wood waste handling activities. As needed, additional fuel for the plant

(potentially during extended winters) could include wood waste materials (forest waste biomass) already being processed at the Eastern Regional MRF and Transfer Station.

### Technology Overview

As mentioned above, the project would utilize a gasification technology for the conversion of the biomass fuels into electricity. Gasification systems generate electricity through transformation of the solid woody biomass into a "syngas" (synthesis gas) and combustion of the syngas in an internal combustion (IC) engine or turbine. Gasification is the thermo-chemical conversion of woody biomass into a syngas under controlled temperature and oxygen conditions; woody biomass materials are not "burned" in a gasification system. Gasification also produces a solid carbon char (also known as biochar). Biochar is a valuable fertilizer and soil amendment, and serves as a highly effective sequestration medium for carbon.

### **DISCUSSION OF ISSUES:**

#### Air Quality

The Draft EIR analyzed the potential air emissions that could be generated by all project components; truck deliveries, employee commute trips, chipping of biomass, power plant emissions, etc. The combined emissions would fall short of the 84 pounds per day (lbs/day) mass emission thresholds established by the Placer County Air Pollution Control District (PCAPCD). Therefore, long-term operational emissions of criteria air pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with air quality planning efforts.

The significance determination described above does not account for the fact that operation of the biomass plant would result in a reduction in the open burning of forest-sourced biomass and associated emissions. While the level of open burning that would occur on any particular day is unknown, the quantity of biomass that would be consumed by the proposed plant and, thus, not open burned in the forests, is known. As shown on Table 9-8 in the DEIR, operation of the biomass facility would result in a net reduction of 78 tons per year of Nitrogen Oxide, 102 tons per year of reactive organic gases, 167 tons per year of particulate matter (PM10) and 142 tons per year of fine particulate matter (PM2.5). As a result, not only would the biomass facility fail to generate significant air pollution emission itself, it would also prevent a significant amount of future air pollutants related to open pile burns from being released in the region.

#### Biological Resources

##### *Forestry Resources*

In the larger context of region-wide and statewide forestry resources, the project would not result in substantial impacts to forestry resources because the project site is small and contains minimal forestry resources and substantial forestry resources are and would continue to be available surrounding the site. In addition, the project would not generate a need for biomass fuels beyond that which is currently being produced through ongoing forest management activities. As stated in the project description, the fuel source for the proposed biomass facility would be woody biomass acquired primarily from hazardous fuel removal, forest thinning, and other forest management activities. Removal of woody biomass from the surrounding forests could modify habitat for common and special-status species, degrade sensitive habitats, and/or result in fill of jurisdictional waters of the United States. However, forest projects that would generate the woody biomass are separate projects independent from the proposed project, and are subject to separate environmental review and permitting. The generation of woody biomass would occur regardless of the proposed biomass project. Disposal of the woody biomass at the proposed facility in lieu of other disposal methods such as pile burning would not have a substantial effect on biological resources. Therefore, the use of the forest residuals as a fuel source for the project is considered to have a less-than-significant impact on biological resources.

### Climate Change/Greenhouse Gasses

As described in Chapter 10 of the Draft EIR, the project would result in a net increase in greenhouse gas (GHG) emissions. However, the efficiency at which the power plant would produce electricity would be consistent with the state-wide efficiency of electricity generation needed to achieve the level GHG reductions identified for the electric power sector and would be consistent with AB 32's GHG emission reduction target and applicable provisions of the AB 32 Scoping Plan. Thus, the project's contribution of GHG emissions would not be cumulatively considerable. Also, as discussed in the Air Quality section, the open pile burns that would continue to occur if the project is not constructed would release a significant amount of GHG emissions into the atmosphere. These emissions are considered "avoided emissions" in the DEIR, because they would not occur to a large extent if the project is constructed.

In addition the quantitative analysis presented in Table 10-3 of the DEIR does not account for the possibility that, if left in the forest, this forest-sourced material might otherwise serve as ladder fuels in forest fires of the more catastrophic variety that include crown fires and the burning of fully mature trees and roots. If these factors could be incorporated into the quantitative analysis, the net change in emissions would be substantially lower.

### Land Use/Community Plan Consistency

The project site is designated Agriculture-Timberland in the Placer County General Plan, which is a land use designation that allows for public utility facilities. The site is zoned FOR-SP (Forestry, combining Special Purpose). The FOR zone district allows for electric generating facilities with approval of a Conditional Use Permit. The combining Special Purpose zone district requires additional review for all new land uses proposed within the vicinity of existing facilities "important to the general welfare of the public". In this case, the important facility is the former landfill and the MRF/transfer station. Because the existing uses of the site are industrial in nature and not generally sensitive to the impacts associated with a biomass energy facility, and because the biomass facility would not be negatively impacted by the operation of the existing uses of the site, the project is determined to be compatible with surrounding land uses. In addition, the project is determined to be consistent with the General Plan and the underlying zoning for the site, subject to approval of the Conditional Use Permit.

### Transportation and Circulation

As discussed in the DEIR, the traffic generated by the project would include truck deliveries of biomass fuels (during those months when forest maintenance operations are occurring), shipments of biochar and facility employee trips. Table 8-8 identifies the total number of daily trips that would be generated by the project. During the summer, the project is expected to generate a total of 36 daily and 10 peak hour trips including delivery truck trips, employee trips, and biochar trips. During the winter, the project would generate 14 daily and 5 peak hour trips (employee trips and biochar trips only). The level of traffic that would be generated by the project would not require off-site improvements, intersection upgrades or any changes to existing vehicular circulation. The cumulative impacts associated with the addition of daily vehicle trips would be mitigated through payment of traffic impact fees as set forth in Mitigation Measure 18-1.

### Alternatives

The DEIR considered the following three alternatives considered for the proposed project:

- No Project Alternative;
- Direct Combustion Technology Alternative; and
- Alternative Site with Gasification Technology Alternative.

The following summary provides brief descriptions of the three alternatives to the proposed project that are evaluated in this Draft EIR. For a more thorough discussion of project alternatives, please refer to Chapter 18, Other CEQA Sections.

**No Project Alternative**

With implementation of the No Project Alternative, the site's current environmental conditions would remain unchanged. The baseline environmental conditions for the site documented in this Draft EIR would continue into the future with this alternative. The project's anticipated grading, excavation and site construction activities would not occur and the environmental impacts associated with these activities would be avoided. However, this alternative would result in a potentially significant impact associated with the continued burning of wood biomass by resource management agencies such as TNF and LTBMU. With the project, a portion of the woody biomass currently burned would be diverted and sent to the biomass facility where substantially reduced emissions would occur. Under this alternative, woody biomass would continue to be burned at management sites. This ongoing activity represents a potentially significant impact that would not occur under the project. While this alternative would reduce the project's significant environmental impacts, it would not meet any of the project's objectives especially those related to improving air quality and GHG emissions associated with open burning of woody biomass. Overall, this alternative would result in environmental tradeoffs compared to the project.

**Direct Combustion Technology Alternative**

The Direct Combustion Technology Alternative would include construction of a two MW biomass energy facility at the proposed 3.7-acre project site that utilizes a direct combustion technology for wood-to-energy production rather than the gasification technology associated with the project. Similar to the proposed project, this alternative would require approval of a Conditional Use Permit by Placer County. Facility ownership and employment and many of the site improvements would be the same as the project.

As detailed in the Draft EIR (Chapter 18), the Direct Combustion Technology Alternative would result in similar environmental impacts as the project for most environmental resources. However, this alternative would result in greater environmental impacts in the areas of criteria air pollutant emissions, GHG emissions, and potential groundwater impacts. While this alternative would meet all of the project's objectives especially those related to improving air quality and GHG emissions associated with open burning of woody biomass, it would result in three new potentially significant impacts that would not occur under the project. Overall, this alternative would not be environmentally superior to the project.

**Alternative Site with Gasification Technology Alternative**

This alternative includes the development of a two MW biomass energy facility at an alternative location within the boundaries of the Eastern Regional MRF and Transfer Station site that would distance the plant from existing residences and would eliminate the need to remove an existing temporary caretaker's residence.

The alternative site is entirely within APN 080-070-017, with the exception of the redundant well, which would be located in the same area as proposed by the project. The Draft EIR (Exhibit 18-2) illustrates the approximate limits of the alternative site and the conceptual location of the power generation building, covered storage facility, and materials storage area. The alternative site is located nearly 0.5 mile northwest of the project site and adjacent to the haul road that provides access to site operations in the northern part of the site.

Access to the site would be via Cabin Creek Road, and vehicles traveling to and from the site would be required to pass through the MRF and Transfer Station scale house. The alternative would be construction on about the same area as the project (i.e., 3.7 acres); however, the alternative site is located closer (about 300 feet) to former landfill operations, which occurred east of the haul road.

As with the project, this alternative would meet all of the basic project objectives and would require approval of a Conditional Use Permit by Placer County. Facility ownership and employment and many of the site improvements would be the same as the project.

The onsite equipment, water and wastewater demands, and operational characteristics (e.g., hours, fuel sourcing, processing and handling, storage, and recordkeeping) for this alternative would be the same as the project. Improvements at the alternative site would include a paved access road extending from the haul road to the site, and improvements to the haul road that is partially unpaved. This alternative would include longer connections (i.e., for water, wastewater, and electricity) than the project. Given that the alternative site is located uphill (an elevation approximately 50 feet higher) from the existing MRF and Transfer Station facilities that receive water from a gravity-fed water line extending from the water storage tanks, new pumping facilities would be required to bring water to the alternative site for use.

The Alternative Site with Gasification Technology Alternative would result in similar environmental impacts as the project for most environmental resources. Because this alternative is shifted slightly within the study area, this alternative would not disturb existing uses located on the proposed project site and would reduce the concentrations of TAC exposure to nearby residences. However, these impacts were determined to be less-than-significant for the project; therefore, this alternative would not reduce or eliminate any of the projects significant effects. Further, this alternative would require greater construction activities associated with utility line extensions and a new water pump, and a greater number of trees would need to be removed from the site compared to the project. Nonetheless, this alternative would meet all of the project's objectives and would reduce some environmental impacts. Therefore, this alternative would be environmentally superior to the project.

**Environmentally Superior Alternative**

Although the Alternative Site with Gasification is the environmentally superior alternative, there are logistic complications associated with constructing the facility within the boundaries of the Eastern Regional Landfill. Chiefly, there are contractual obligations with the operators of the ERL (Tahoe Truckee Sanitation District) that could potentially preclude construction in the alternative location. In addition, there would be higher construction cost associated with connecting utilities 0.5 miles further away from the primary project site. Based on these concerns, the primary project site remains the most viable location.

**RECOMMENDATION:**

The Development Review Committee recommends that the Planning Commission:

1. certify the Environmental Impact Report (EIR) for the Cabin Creek Biomass Facility project and adopt the Statement of Findings (Attachment D) and the Mitigation Monitoring and Reporting Program (Attachment E) and;
2. approve a Conditional Use Permit to allow for the construction of a two megawatt biomass electric generating plant, subject to the following findings and attached recommended conditions of approval.

**FINDINGS:**

**CEQA: Final Environmental Impact Report**

The Planning Commission, having considered the Final Environmental Impact Report (FEIR) for the Cabin Creek Biomass Facility project, the staff report, public comments (both oral and written), and all written materials in the record connected therewith, makes the following findings relating to the environmental impacts of the Project as set forth in the FEIR (State Clearinghouse Number 2011122032), prepared by the County for the Project:

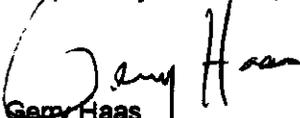
1. The FEIR has been prepared in accordance with all requirements of CEQA and the Guidelines.
2. The FEIR was presented to and reviewed by the Planning Commission, and the Planning Commission has reviewed the FEIR, and bases its findings on such review and other substantial evidence in the record. The FEIR was prepared under supervision by the County and reflects the independent judgement of the County.
3. The Planning Commission hereby certifies the FEIR as complete, adequate and in full compliance with CEQA as a basis for considering and acting upon the Project approvals, and exercising its independent judgment, makes the specific findings with respect to the FEIR as set forth in Attachment D, attached to the staff report and adopted herein by reference.
4. All mitigation measures proposed in the FEIR are incorporated into the Mitigation Monitoring and Reporting Program (MMRP), which is hereby adopted. Said MMRP will implement all mitigation measures adopted with respect to the development pursuant to all of the Project approvals. The mitigation measures have been incorporated into the conditions of approval and thus become part of and limitations upon the entitlements conferred by the Project approvals.

**Conditional Use Permit:**

The Planning Commission, having considered the Final Environmental Impact Report (FEIR) for the Cabin Creek project, the staff report, public comments (both oral and written), and all written materials in the record connected therewith, makes the following findings and approves a Conditional Use Permit for the Project, subject to the Conditions of Approval for the Project as set forth in Attachment C.

1. The proposed uses are consistent with all applicable provisions of Chapter 17 and 18 of the Placer County Code.
2. The proposed uses are consistent with the objectives, policies, general land uses and programs as specified in the Placer County General Plan. The Cabin Creek Biomass Facility project is in an appropriately zoned area and is compatible with the existing industrial uses on the project site. The Project will not generate excessive noise or traffic. Moreover, the proposed Project will provide a new source of renewable energy to the area.
3. The establishment, maintenance or operation of the proposed uses will not be detrimental to the health, safety, and general welfare of people residing or working in the neighborhood of the proposed use, and will not be detrimental or injurious to property or improvements in the neighborhood or the general welfare of the County.
4. The proposed use is consistent with the character of the immediate vicinity and will not be contrary to its orderly development.

Respectfully submitted,

  
 Gary Haas  
 Senior Planner

GH:KH

**ATTACHMENTS:**

- Attachment A – Vicinity Map
- Attachment B – Site Plan
- Attachment C – Conditions of Approval
- Attachment D – Statement of Findings

**Attachment E – Mitigation Monitoring and Reporting Plan  
Attachment F – Final EIR (provided under separate cover)**

**cc: Applicant – Brett Storey, Senior Management Analyst  
Sarah Gillmore – Engineering and Surveying Department  
Stephanie Holloway – Department of Public Works  
Janelle Heinzler – Special Districts  
Justin Hansen – Environmental Health Services  
Andy Fisher – Placer County Parks Division  
Tom Thompson – Air Pollution Control District  
Brad Albertazzi – Placer County Fire/CDF  
David Boesch – Placer County Chief Executive Officer  
Karin Schwab – County Counsel’s Office  
Michael Johnson – CDRA Director  
Paul Thompson – Deputy Planning Director  
George Rosasco – Supervising Planner  
Subject file**

# Cabin Creek Biomass Facility Project

Findings of Fact for the Environmental Impact Report  
SCH# 2011122032



PREPARED FOR:  
Placer County  
Community Development Resource Agency  
Environmental Coordination Services  
3091 County Center Drive, Suite 190  
Auburn, CA 95603

April 2013

**ATTACHMENT 6**



**Cabin Creek Biomass Facility Project**  
**Findings of Fact for the Environmental Impact Report**  
**SCH # 2011122032**

**PREPARED FOR:**

**Placer County**  
**Community Development Resource Agency**  
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**April 2013**

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# STATEMENT OF FINDINGS

## INTRODUCTION

Placer County has prepared an Environmental Impact Report (EIR) that presents an evaluation of the environmental effects associated with construction and operation of the proposed Cabin Creek Biomass Facility Project located at the Eastern Regional Material Recovery Facility (MRF) and Transfer Station site in eastern Placer County as described in detail in the EIR and summarized herein.

The environmental analysis contained in the EIR provides a thorough evaluation of significant and potentially significant effects on the environment that would occur as a result of implementing the proposed Cabin Creek Biomass Facility Project.

When approving a project, CEQA and the State CEQA Guidelines provide that:

*[N]o public agency shall approve or carry out a project for which an environmental impact report has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless both of the following occur:*

*(a) The public agency makes one or more of the following findings with respect to each significant effect:*

*(1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.*

*(2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.*

*(3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.*

*(b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment. [Public Resources Code Section 21081]*

Because the Draft EIR identified significant effects that may occur as a result of the project and in accordance with the provisions of the State CEQA Guidelines, the County hereby adopts the findings contained herein as part of the approval of the proposed project.

## RECORD OF PROCEEDINGS

For all purposes of CEQA compliance, including these Findings of Fact, the administrative record of all Placer County Board of Supervisors proceedings and decisions regarding the environmental analysis of the Cabin Creek Biomass Facility Project include but are not limited to:

- ▲ The Draft and Final EIR and Addendum, together with all appendices and technical reports referred to therein, whether separately bound or not;
- ▲ The Mitigation Monitoring and Reporting Program (MMRP) for the Cabin Creek Biomass Facility Project, December 2012;
- ▲ All reports, letters, applications, memoranda, maps or other planning documents relevant to the Cabin Creek Biomass Facility Project prepared by Placer County, their environmental consultant, or others and presented to or before the decision-makers or staff;

- ▲ All minutes or notes of any public workshops, meetings or hearings regarding the Cabin Creek Biomass Facility Project, and any recorded or verbatim transcripts or videotapes thereof;
- ▲ Any letters, reports or other documents or evidence regarding the Cabin Creek Biomass Facility Project submitted into the record at any public workshops, meetings or hearings; and,
- ▲ Matters of common general knowledge to Placer County relevant to the Cabin Creek Biomass Facility Project that Placer County may consider, including applicable state or local laws, ordinances, and policies.

Documents or other materials that constitute the record of proceedings upon which these Findings are made are located at the following location:

Placer County  
Community Development Resource Agency  
Environmental Coordination Services  
3091 County Center Drive, Suite 190  
Auburn, CA 95603

Contact: Maywan Krach  
Community Development Technician  
Phone: (530) 745-3132/Fax: (530) 745-3003

## DESCRIPTION OF APPROVED PROJECT

The proposed Cabin Creek Biomass Facility Project consists of a two-megawatt (MW) wood-to-energy biomass facility to be located at the Eastern Regional MRF and Transfer Station. The proposed facility would use a gasification technology, which generates electricity through transformation of the solid woody biomass into a "syngas" (i.e., synthetic gas) and combustion of the syngas in an internal combustion (IC) engine or turbine. Gasification is the thermochemical conversion of woody biomass into a syngas under controlled temperature and oxygen conditions; woody biomass materials are not "burned" in a gasification system. Gasification also produces a solid carbon char (also known as biochar).

The entire Eastern Regional MRF and Transfer Station site is approximately 292 acres and includes four County-owned parcels (APNs: 080-010-031, 080-010-033, 080-070-017, and 080-070-016). The proposed project would be located on a 3.7-acre site in the southernmost area of the property. The site is located within the unincorporated portion of Placer County, California, approximately 2 miles south of Interstate 80 (I-80) at 900 Cabin Creek Road, west of State Route (SR) 89.

The proposed project would include construction of an approximately 11,000 square-foot, two-story structure that would house the power generating and emissions control equipment and an approximately one-acre material storage area. The storage area would include a 7,000 square-foot open air pole barn structure to allow materials to dry before use in the energy generation process. Additional onsite improvements would include eight parking spaces, a paved vehicle circulation area that includes new driveways on Cabin Creek Road and the access road to the Tahoe Area Regional Transit (TART) and County Department of Public Works (DPW) facilities located on the site, a paved haul road south of the material storage area, storm water treatment facilities (including an infiltration trench and detention basin), retaining walls, and utility improvements/extensions.

Biomass materials (fuel for the plant) would be processed (ground and screened) at the locations from which they are removed (such as U.S. Forest Service [USFS] fuels reduction sites) and delivered via haul truck to the project site. No additional wood material processing would occur at the project site beyond that which is already occurring in association with current Eastern Regional MRF and Transfer Station wood waste handling activities.

## **SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE PROJECT**

The EIR identifies a number of significant or potentially significant impacts including impacts associated with biological resources, cultural resources, paleontological resources, light and glare, geologic hazards, water quality, hazardous materials, wildland fires, and transportation (cumulative). As described below under the Findings of Fact header, mitigation measures are available to reduce each of these impacts to a less-than-significant level, and Placer County has adopted such measures. The EIR did not identify any significant and unavoidable impacts.

## **ALTERNATIVES**

### **NO PROJECT ALTERNATIVE**

The 3.7-acre project site contains one temporary existing caretaker's residence and an existing cell tower. The site is otherwise undeveloped and contains undeveloped and forested land. There are no plans to expand existing Eastern Regional MRF and Transfer Station operations, County DPW and TART facilities, or any other uses at this site if the project were not implemented. Therefore, this alternative assumes that the site would remain in its current state with no changes to the existing environment.

The No Project Alternative would avoid the project's potentially significant environmental impacts (i.e., biological resources, cultural resources, paleontological resources, light and glare, geologic hazards, water quality, hazardous materials, wildland fires, and traffic (cumulative)). However, this alternative would result in a potentially significant impact associated with the continued burning of wood biomass by resource management agencies such as the USFS, Tahoe National Forest and Lake Tahoe Basin Management Unit. With the project, a portion of the woody biomass currently burned would be diverted and sent to the biomass facility where substantially reduced emissions would occur. Under this alternative, woody biomass would continue to be burned at management sites. This ongoing activity represents a potentially significant impact that would not occur under the project.

While this alternative would reduce the project's significant environmental impacts, it would not meet any of the project's objectives especially those related to improving air quality and greenhouse gas (GHG) emissions associated with open burning of woody biomass.

### **DIRECT COMBUSTION TECHNOLOGY ALTERNATIVE**

The Direct Combustion Technology Alternative would include construction of a two-MW biomass energy facility at the proposed 3.7-acre project site that would utilize a direct combustion technology for wood-to-energy production. Similar to the project, this alternative would require approval of a Conditional Use Permit by Placer County. The buildings and site improvements would be the same as the project, except that a direct combustion system would require that a baghouse, ash container, and cooling tower be located outside of the building.

Except for the increases in water demands, other utility improvements and connections would be the same as the project. As with the project, water service to the site with a direct combustion system would be provided by onsite water storage tanks. A direct combustion system requires a greater amount of water than a gasification system, because water is required for condensing steam and supplying the boiler and cooling tower. Depending on the manufacturer, a direct combustion system would require water at a continuous flow between 15 and 20 gallons per minute (gpm), or 21,600 to 28,800 gallons per day (gpd) (compared to up to 14,400 gpd under the proposed project). Under this alternative, outgoing wastewater flows would be between 7.5 and 10 gpm, which

proposed project). Under this alternative, outgoing wastewater flows would be between 7.5 and 10 gpm, which equates to approximately 10,800 to 14,400 gpd, which would be similar to the peak day discharge for the proposed project.

Hazardous materials use and storage during construction would be the same as the project. The sources of fuel for this alternative would be the same as the project (solely renewable woody biomass). Direct combustion systems are not typically as efficient as gasification systems. To generate two MW of power using a direct combustion system, the plant would consume between 15,000 and 20,000 bone dry tons (BDT) of woody biomass fuel annually, as compared to the 14,000 to 17,000 BDT of fuel required for the project.

Assuming 235 delivery days, an estimated 64 to 85 BDT of biomass material would be delivered to the site on a typical weekday. Based on the volume of material required to fuel the facility on a yearly basis and the number of days that material could be delivered, it is estimated that up to 1,600 truck trips would occur annually under this alternative, compared to an estimated 1,360 annual trips with the proposed project. All other fuel sourcing, processing, handling, storage, and recordkeeping details would be the same as the project.

With forest-sourced woody biomass, generally there would be approximately three to five percent ash produced per volume of woody biomass input (similar to the amount of biochar produced in a gasification system) associated with this alternative. Therefore, the 15,000 to 20,000 BDT of woody biomass used in power generation under the Direct Combustion Technology Alternative would yield an estimated 450 to 1,000 tons of ash per year, or between about 8 and 19 tons per week. This alternative's volume of ash would be slightly more than the proposed project's volume of biochar, which would be 420 to 850 tons, or between 8 and 16 tons per week of biochar.

The Direct Combustion Technology Alternative would result in similar environmental impacts as the project for most environmental resources. However, this alternative would result in greater environmental impacts in the areas of criteria air pollutant emissions, GHG emissions, and potential groundwater impacts.

While this alternative would meet all of the project's objectives especially those related to improving air quality and GHG emissions associated with open burning of woody biomass, it would result in three additional potentially significant impacts (criteria air pollutant emissions, GHG emissions, and potential groundwater impacts) that would not occur under the project.

## **ALTERNATIVE SITE WITH GASIFICATION TECHNOLOGY ALTERNATIVE**

This alternative includes the development of a two MW biomass energy facility at an alternative location within the study area (i.e., Eastern Regional MRF and Transfer Station site) that would distance the plant from existing residences and would eliminate the need to remove a temporary existing caretaker's residence. The alternative site is located nearly 0.5 mile northwest of the project site and adjacent to the haul road that provides access to site operations in the northern part of the site. This alternative would occupy the same area (i.e., 3.7 acres) as the proposed project. Access to the site would be via Cabin Creek Road, and vehicles traveling to and from the site would be required to pass through the Eastern Regional MRF and Transfer Station scale house.

Improvements at the alternative site would include a paved access road extending from the haul road to the site, and improvements to the haul road (e.g., paving a portion of roadway that is currently unpaved). This alternative would include longer connections (i.e., for water, wastewater, and electricity) than the project; the underground extension would be approximately 2,000 linear feet, whereas the existing utility lines are in Cabin Creek Road, adjacent to the proposed project site. Because the alternative site is located uphill (an elevation approximately 50 feet higher) from the existing well and water storage tanks, new pumping facilities would be required to bring water to the alternative site. Tree removal associated with this alternative would be more extensive than the project because this alternative would result in the removal of approximately 3 acres of

Jeffrey pine forest (an estimated 94 trees), compared to approximately 1.87 acres (an estimated 44 trees) that would be removed with the project. Nonetheless, this alternative would meet all of the project's objectives and would slightly reduce some environmental impacts (biological resources, and noise and air quality effects on the existing caretaker residence). While some environmental impacts would be reduced, these impacts were determined to be less-than-significant for the project. Therefore, this alternative would not reduce or avoid any of the project's significant impacts. Considering this, Placer County rejects this alternative primarily because it would be within the fenced boundaries of the Eastern Regional MRF and Transfer Station site and it was the desire of the Placer County Department of Facility Services that oversees MRF and Transfer Station operations, that the proposed location would be preferable for facility operations. Further, it would require more costly utility line extensions, a new water pump, and would require removal of a greater number of trees.

## FINDINGS OF FACT

The Placer County Board of Supervisors has reviewed the Final EIR for the Cabin Creek Biomass Facility Project, consisting of the Cabin Creek Biomass Facility Project Draft EIR (July 2012) and the Cabin Creek Biomass Facility Project responses to comments on the Draft EIR (Chapter 2) and Revisions and Corrections to the Draft EIR (Chapter 3) (December 2012). The Placer County Board of Supervisors has also considered the public record on the project, identified under "Record of Proceedings" above, and this Statement of Findings.

To the extent that these findings conclude that proposed mitigation measures outlined in the Final EIR are feasible and have not been modified, superseded, or withdrawn, Placer County hereby binds itself to implementing or ensuring the Applicant implements these measures. These findings, in other words, constitute a binding set of obligations that will come into effect when the Placer County Board of Supervisors formally approves the Cabin Creek Biomass Facility Project.

CEQA requires that when a public agency has made the findings under CEQA Guidelines Section 15091(a)(1) relative to an EIR, the public agency must also adopt a program for monitoring or reporting on the revisions and mitigation measures that will avoid significant impacts. The mitigation measures required of the Cabin Creek Biomass Facility Project are outlined and identified in the document entitled Mitigation Monitoring and Reporting Program (MMRP) for the Cabin Creek Biomass Facility Project, December 2012. The MMRP is adopted concurrently with these findings as required by Section 21081.6(a)(1) of the Public Resources Code.

The Board of Supervisors has reviewed the MMRP and finds that it meets the requirements of Section 21081.6 of the Public Resources Code by providing a monitoring plan designed to ensure compliance during project implementation with mitigation measures adopted by this Board.

Pursuant to Public Resources Code Section 21081, for each significant effect identified in the EIR, the Placer County Board of Supervisors must make one or more of the findings stated on page 1 of this document.

After reviewing the public record, composed of the aforementioned elements, the Placer County Board of Supervisors hereby makes the following findings regarding the significant effects of the proposed project, pursuant to Public Resources Code Section 21081 and Section 15091 of the State CEQA Guidelines. The numeric references for each impact refer to the impact/mitigation label included in the EIR.

## BIOLOGICAL RESOURCES

### SIGNIFICANT IMPACT: DISTURBANCE TO NESTING BIRDS AND POTENTIAL LOSS OF INDIVIDUALS (IMPACT 5-1)

Construction activities related to the proposed project would include disturbance and/or removal of approximately 1.87 acres of Jeffrey pine forest that could provide nesting sites for common and special-status birds that are protected under Section 3503.5 of the California Fish and Game Code. Special-status birds that could nest on site include white-headed woodpecker and olive-sided flycatcher. Both of these species are considered Birds of Conservation Concern by U.S. Fish and Wildlife Service. Olive-sided flycatcher is also considered a species of special concern by the California Department of Fish and Game (CDFG). Common species such as western tanager (*Piranga ludoviciana*) and pine siskin (*Carduelis pinus*) could nest in the study area. If active bird nests are present during tree removal and other ground disturbing activities in and adjacent to the Jeffrey pine forest, project construction could disturb nesting birds. Disturbance to nesting birds could result in nest abandonment by the adults and mortality of young or eggs. This impact would be **significant**.

#### Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

#### Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects to nesting birds and loss of individual birds. Placer County or its vendor will implement the following:

#### Mitigation Measure 5-1

*To avoid impacts to nesting birds, trees and other vegetation shall be removed from the project site during the non-breeding season (September 1 to March 30) to the extent feasible.*

*If vegetation removal is scheduled to occur during the nesting season (April 1 to August 31), the Applicant shall retain a qualified biologist to conduct preconstruction surveys in suitable habitat on the project site. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction. Survey results shall be sent immediately to Placer County Planning Services Division and to the CDFG. If active nests are present on or immediately adjacent to the project site, Planning Services Division staff shall initiate consultation with CDFG to determine appropriate avoidance measures.*

*If no nests are found, no further mitigation is required.*

Implementation of this mitigation measure would reduce significant impacts associated with the disturbance to nesting birds and potential loss of individuals to a less-than-significant level by removing vegetation during the non-breeding season and minimizing potential for loss of active nests.

### POTENTIALLY SIGNIFICANT IMPACT: CONFLICT WITH PLACER COUNTY TREE ORDINANCE (IMPACT 5-2)

With implementation of the proposed project, approximately 1.87 acres of Jeffrey pine forest on the project site would be cleared and graded in preparation for construction of proposed project facilities. Approximately 44 trees would be removed from the project site.

The *Placer County General Plan* contains policies that aim to preserve and protect the valuable vegetation resources of Placer County. Specifically, General Plan Policy 6.D.6 directs the County to ensure the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining

abundant and diverse wildlife. General Plan Policy 6.D.8 requires that new development preserve natural woodlands to the maximum extent possible. Jeffrey pine forest is considered both native and natural woodland.

The County's Tree Ordinance is applicable to all native, landmark trees, riparian zone trees, and certain commercial firewood operations. In accordance with the Tree Ordinance, a tree permit is required if a project would remove more than 50% of existing native trees, 6 inches diameter at breast height (dbh) or greater. As noted above, the proposed project would remove all trees from the site, approximately 44 trees. Therefore, a tree permit would be required before any trees could be removed from the project site for project development.

The removal of approximately 1.87 acres of Jeffrey pine forest would not represent a substantial reduction of habitat, and the surrounding area provides similar and abundant habitat; however, their removal would represent a conflict with the County's Tree Ordinance. Therefore, this impact would be **potentially significant**.

### **Finding**

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

### **Facts in Support of Finding**

Placer County has adopted the following mitigation measure that will reduce to a less-than-significant level conflicts with the Placer County Tree Ordinance.

### **Mitigation Measure 5-2**

- (a) *To reduce the loss of Jeffrey pine forest and protect individual trees on the project site, the Applicant shall conduct a tree survey to determine the number and size of trees to be removed. The number of trees to be removed shall be minimized to the extent feasible.*
- (b) *The Applicant shall obtain a tree permit from the County, as per the County's Tree Ordinance. As stated in the Tree Ordinance (12.16.080 Replacement program and penalties), the County may condition any tree permit or discretionary approval involving removal of a protected tree upon (a) the replacement of trees in kind, (b) implementation of a revegetation plan, or (c) payment into the County's Tree Preservation Fund. Because the project site would not support replacement trees or the implementation of a revegetation plan, the Applicant shall either replace trees at an offsite location or contribute to the County's Tree Preservation Fund; this will be determined by the County.*

*The replacement requirement may be calculated based upon an inch for an inch replacement of the removed tree(s) and may require minimum 15 gallon size trees. The total of replacement trees may be required to have a combined diameter of the tree(s) removed. A minimum of 50% of replacement trees will be of a similar native tree. Replacement trees may be planted onsite or in other areas to the satisfaction of the County Planning Services Division. Such replanting must not result in the over-planting of a site such that an unsafe fire condition is created.*

*The County may decide that if the project site is not capable of supporting all of the replacement trees, the Applicant shall pay the County the current market value, as established by an arborist, forester, or registered landscape architect, of the replacement trees, including cost of installation, to go into a Tree Preservation Fund.*

*Before Improvement Plans are approved, the Applicant shall provide proof to the County that one, or a combination, of the mitigation options described above has been completed and/or funded. Proof of mitigation fulfillment will also be provided to CDFG.*

Implementation of these mitigation measures (a and b) would reduce potentially significant impacts associated with the loss of trees to a less-than-significant level by replacing trees that are removed by site development or contributing to the County's Tree Preservation Fund, which would fund the planting and maintenance of new trees or conservation efforts directed at conserving or restoring existing functional value offsite.

## CULTURAL RESOURCES

### POTENTIALLY SIGNIFICANT IMPACT: IMPACTS TO HISTORICAL RESOURCES (IMPACT 6-1)

The project site is located in a historic transportation corridor that contained the Lake Tahoe Railway and Transportation Company (LTR&TCo) Railroad and the 1860 Tahoe-Truckee Toll Road. Therefore, the biomass facility site could potentially contain remnants of a segment of these cultural resources or could contain historic artifacts associated with these transportation facilities. While the field reconnaissance conducted on the project site did not discover any evidence of historic resources, it is possible that buried or concealed historic resources could be present and detected during project ground disturbing activities. Disturbance of previously undiscovered historic resources would result in **potentially significant** impacts.

#### Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

#### Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects to historical resources.

#### Mitigation Measure 6-1

*If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains) is made during construction activities at the project site, ground disturbances in the area of the find shall be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant per the California Register of Historic Resources (CRHR) and CEQA Guidelines Section 15064.5 and will develop appropriate mitigation to protect the integrity of the resource and ensure that no additional resources are affected. Mitigation could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.*

Implementation of the mitigation measure described above would reduce potential impacts that could occur due to the discovery of previously unrecorded historic or prehistoric archaeological resources, to less-than-significant levels because if resources are discovered adequate measures would be implemented to protect and preserve the resources.

### POTENTIALLY SIGNIFICANT IMPACT: IMPACTS TO ARCHAEOLOGICAL RESOURCES (IMPACT 6-2)

The project area falls within the center of Washoe territory, with primary use by the northern Washoe. Archaeological evidence of their ancient subsistence activities are found along the mountain flanks as temporary small hunting camps containing flakes of stone and broken tools. In the high valleys more permanent base camps are represented by stone flakes, tools, grinding implements, and house depressions. While the archaeological field reconnaissance conducted on the project site did not discover any evidence of archaeological resources, it is possible that buried or concealed cultural resources could be present and detected during project ground disturbing activities. Disturbance of previously undiscovered archaeological resources would result in **potentially significant** impacts.

## Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

## Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects to archaeological resources.

## Mitigation Measure 6-2

*The Applicant shall implement Mitigation Measure 6-1 and 6-4.*

Implementation of the Mitigation Measures 6-1 (above) and 6-4 (below) would reduce potential impacts that could occur due to the discovery of previously unrecorded historic or prehistoric archaeological resources, to less-than-significant levels because if resources are discovered adequate measures would be implemented to protect and preserve the resources.

## POTENTIALLY SIGNIFICANT IMPACT: IMPACTS TO PALEONTOLOGICAL RESOURCES OR UNIQUE GEOLOGIC FEATURES (IMPACT 6-3)

According to standard procedures published by the Society of Vertebrate Paleontology (2010), rock units with a high potential for containing significant nonrenewable paleontological resources are those determined by previous studies to contain vertebrate or significant invertebrate fossils. Paleontological resources have been identified in the Truckee Basin area, in the vicinity of the project site including resources located four miles southwest of Downtown Truckee and 5 miles northeast of Downtown Truckee near the Boca Reservoir. While no paleontological resources have been recorded on the project site, because geologic units in the area have been known to support these resources, it is possible that buried or concealed paleontological resources could be present and detected during ground disturbing activities. Disturbance of previously undiscovered paleontological resources would result in **potentially significant** impacts.

## Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

## Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects to paleontological or unique geologic resources.

## Mitigation Measure 6-3

*Before the start of grading and/or excavation, the Applicant shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, regarding the possibility of encountering paleontological resources at the site, the appearance and types of paleontological resources likely to be seen during project construction, and proper notification procedures should such resources be encountered.*

*In the event that paleontological resources are discovered during ground disturbing activities, grading and construction work within 100 feet of the find shall be suspended until the significance of the features can be determined by a qualified professional paleontologist as appropriate. A qualified professional paleontologist shall then make recommendations for measures necessary to protect the find, or to undertake data recovery, excavation, analysis, and curation of paleontological materials as appropriate.*

Implementation of the mitigation measure described above would reduce potential impacts that could occur due to the discovery of previously unrecorded paleontological resources, to less-than-significant levels because appropriate preservation measures would be implemented to preserve significant paleontological resources if they are discovered during project construction activities.

### **POTENTIALLY SIGNIFICANT IMPACT: DISTURBANCE TO HUMAN REMAINS (IMPACT 6-4)**

No known burials are present on the project site. Nevertheless, it is possible that buried remains could be present and detected as a result of project ground disturbing activities. Disturbance of previously undiscovered burials would result in **potentially significant** impacts.

#### **Finding**

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

#### **Facts in Support of Finding**

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects to human remains.

#### **Mitigation Measure 6-4**

*In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, potentially damaging excavation in the area of the burial shall be halted and the Applicant shall contact the Placer County Coroner and a professional archaeologist to determine the nature and extent of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code, Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code, Section 7050[c]).*

*If the remains are determined to be those of a Native American, then the following shall occur:*

- (a) *The (State Historic Preservation Office (SHPO), the Applicant, an archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code.*
- (b) *The SHPO shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. Assembly Bill (AB) 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the Applicant shall implement one or more of the following measures:*

- i. record the site with the NAHC or the appropriate Information Center,
  - ii. utilize an open-space or conservation zoning designation or easement, and/or
  - iii. record a document with the county in which the property is located.
- (c) The County or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify a MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The County may also reinter the remains in a location not subject to further disturbance if the County rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the County.

Implementation of the mitigation measure described above would reduce potential impacts that could occur due to the discovery of human remains, to less than-significant levels because appropriate measures would be implemented to properly handle and inter any remains during project construction activities.

## VISUAL RESOURCES

### POTENTIALLY SIGNIFICANT IMPACT: LIGHT AND GLARE IMPACTS (IMPACT 7-3)

Because of the 24-hour operations at the proposed biomass facility, exterior lighting would be required for the main building, which would be up to 50 feet tall, parking, and other vehicle access areas, and the fuel yard area. Security lighting would be wall-mounted along the perimeter of the biomass building and would be mounted under the roof of the pole-barn structure. The project site is located in a remote area, and nighttime lighting would not affect significant numbers of people in the immediate area. Two employee residences would be located adjacent to the project site. One of the residences would receive substantial shielding from the Eastern Regional MRF building. While the site and adjacent areas currently support nighttime lighting sources, the project would increase the number and distribution of these sources. Depending on their design, intensity, and location, the additional lighting associated with the project could potentially increase sky glow effects that would be noticeable from some distance. This impact would be considered **potentially significant**.

#### Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

#### Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects related to light and glare.

#### Mitigation Measure 7-3

*The Applicant shall ensure that exterior lighting installed at the facility will conform to an approved lighting plan. The exterior lighting plan shall be prepared prior to the issuance of a building permit, and submitted to the County with the project Improvement Plans for approval. Exterior lighting shall be limited to lighting required for safe operations and security purposes. The exterior lighting plan will require at a minimum the following:*

- › Identification of location of lighting, height, and positioning of all light fixtures, and type and style of light fixtures;

- › *Lighting shall be directed downward using fully shielded fixtures or fixtures otherwise designed to prevent light trespass or projection of light above the horizontal, except as needed for safe operations and security;*
- › *The height of light poles shall be limited to 20 feet except as needed for operational and safety purposes. Light fixtures are not to exceed the height of adjacent structures.*
- › *Ground level illumination levels shall not exceed two foot candles at the project property line.*

Implementation of the mitigation measure would reduce the project's lighting impacts to a less-than-significant level because a lighting plan and installation of fully shielded lighting fixtures would be required and the project could not exceed two foot candles of illumination at ground level at the property line.

## GEOLOGY, SEISMICITY, AND SOILS

### POTENTIALLY SIGNIFICANT IMPACT: SEISMIC HAZARD IMPACTS (IMPACT 12-1)

Construction period seismic hazard risk would result from fault rupture that would cause ground displacement or collapse or groundshaking that would collapse partially constructed buildings. As described above in the Environmental Setting section of this chapter, the project site is located in a seismically active region; however, no Alquist-Priolo zones have been established on or adjacent to the project area. Therefore, the potential for fault rupture on the project site is considered low. Peak ground acceleration values for the project area are also considered low (0.26g for firm rock, 0.28g for soft rock, and 0.32g for alluvium). Risks to people and structures from seismic hazards during construction are considered less than significant.

Risks to people can also result from failure to design and construct facilities to withstand seismic activity. According to previous soil sampling in the area adjacent to the project site, the soil matrix in the project area includes sand layers that may provide potential avenues for groundwater movement and potential liquefaction during a seismic event. All projects within the County are required to be designed in accordance with seismic standards of the CBC, which includes regulation of construction on unstable soils, such as areas subject to liquefaction. Foundation design and engineering would be based on site-specific conditions. However, a geotechnical study has not been prepared for the project site and the presence of unstable soil conditions on the site, including the potential for liquefaction has not been determined. Because soils near the project site exhibit liquefaction properties, it is possible that similar soils exist on the project site. Therefore, this impact is considered **potentially significant**.

#### Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

#### Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects related to seismic hazards.

#### Mitigation Measure 12-1

*The Improvement Plan submittal shall include a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:*

- A) *Road, pavement, and parking area design;*

- B) Structural foundations, including retaining wall design (if applicable);
- C) Grading practices;
- D) Erosion/winterization;
- E) Special problems discovered onsite, (i.e., groundwater, expansive/unstable soils, etc.); and
- F) Slope stability.

If the soils report indicates the presence of critically expansive or other soils problems that, if not corrected, could lead to structural defects, a certification of completion of the requirements of the soils report shall be required prior to approval of the Improvement Plans. It is the responsibility of the Applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.

Implementation of these mitigation measures would reduce significant impacts associated with seismic hazards and slope instability to a less-than-significant level by requiring that grading and construction follows recommendations of a site-specific geotechnical report and that earthwork is monitored by a geotechnical engineer.

### **POTENTIALLY SIGNIFICANT IMPACT: IMPACTS ASSOCIATED WITH LANDSLIDE, LATERAL SPREADING, SUBSIDENCE, OR COLLAPSE (IMPACT 12-2)**

The site generally slopes from northwest to southeast at between 5 and 25 percent grade. The site earthwork is expected to total 12,000 cubic yards of export, with approximately 30,000 cubic yards of cut and 18,000 cubic yards of fill. Because the site is sloping and grading will involve cut and fill, there is a potential for grading activities to create slope instability if not properly designed. A site-specific geotechnical study and the final grading plan have not been prepared for the project; therefore, the potential exists for unstable slopes or other soil hazards to occur. Impacts associated with landslides, lateral spreading, subsidence, or collapse would be considered **potentially significant**.

#### **Finding**

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

#### **Facts in Support of Finding**

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects related to landslide, lateral spreading, subsidence, or collapse.

#### **Mitigation Measure 12-2**

*The Applicant shall implement Mitigation Measure 12-1.*

Implementation of Mitigation Measures 12-1 (above) would reduce significant impacts associated with unstable slopes or other soils hazards to a less-than-significant level by requiring that grading and construction follows recommendations of a site-specific geotechnical report and that earthwork is monitored by a geotechnical engineer.

## HYDROLOGY AND WATER QUALITY

### POTENTIALLY SIGNIFICANT IMPACT: CONSTRUCTION-RELATED EROSION AND SEDIMENTATION IMPACTS (IMPACT 13-1)

The project area is located on a sloped site adjacent to the Eastern Regional MRF and Transfer Station at an elevation ranging from about 6,290 to about 6,320 feet above sea level. The site generally slopes from north to south at between 5 and 25 percent and drains by natural overland flow and drainage swales that traverse the property.

Construction of the proposed improvements would disturb site soils through vegetation removal, grading, excavation, and building construction. Earthwork at the site would result in the export of approximately 12,000 cubic yards of material, with approximately 30,000 cubic yards of cut and 18,000 cubic yards of fill. It is anticipated that the excess soil excavated from the project site would be deposited on the adjacent landfill site.

If not properly controlled, intense rainfall and associated storm water runoff that occurs during construction could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If uncontrolled, these soil materials could flow off the site and to surrounding water bodies including the Truckee River. Further, the compaction of soils by heavy construction equipment may reduce the infiltration capacity of soils and increase the potential for runoff and downstream sedimentation.

Construction activities could also result in substantial storm water discharges of suspended soils and other pollutants from the project construction site. Construction-related chemicals (fuels, paints, adhesives, etc.) could be washed into surface waters by storm water runoff. The deposition of pollutants (gas, oil, etc.) onto the ground surface by construction vehicles could similarly result in the transport of pollutants to surface waters by storm water runoff or seepage of such pollutants into groundwater. Non-storm water discharges could result from activities such as discharge or accidental spills of hazardous substances such as fuels, oils, concrete, paints, or other construction materials. Because the proposed project could contribute substantial additional sources of soil erosion and sedimentation and the release of other pollutants during construction activities, this would be a **potentially significant** impact.

#### Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment. Also, those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

#### Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects resulting from construction-related erosion and sedimentation impacts.

#### Mitigation Measure 13-1

*Final design of the detention facilities shall be included in the Final Drainage Report submitted with the Improvement Plans for the project. The final improvement plans shall contain the following information regarding stormwater drainage.*

- (a) *The Applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the County for review and approval. The plans shall show all physical improvements as required by the conditions for the project as well as pertinent topographical features both on and off*

site. All existing and proposed utilities and easements, onsite and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The Applicant shall pay plan check and inspection fees with the first Improvement Plan submittal. (NOTE: Prior to plan approval, all applicable recording and reproduction costs shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the Applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or Development Review Committee (DRC) review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the Applicant's expense and shall be submitted to the County in both hard copy and electronic versions in a format to be approved by the County prior to acceptance by the County of site improvements.

Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety.

- (b) The Improvement Plans shall show all proposed grading, drainage improvements, vegetation and tree removal and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by the County. All cut/fill slopes shall be at a maximum of 2:1 (horizontal: vertical) unless a soils report supports a steeper slope and the County concurs with said recommendation. Fill slopes shall not exceed 1.5:1 (horizontal: vertical)

The Applicant shall revegetate all disturbed areas. Revegetation, undertaken from April 1 to October 1, shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the Applicant's responsibility to ensure proper installation and maintenance of erosion control/winterization before, during, and after project construction. Soil stockpiling or borrow areas, shall have proper erosion control measures applied for the duration of the construction as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the County.

The Applicant shall submit to the County a letter of credit or cash deposit in the amount of 110 percent of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the Applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the County for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the County to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

- (c) The Improvement Plan submittal shall include a drainage report in conformance with the requirements of Section 5 of the Land Development Manual that are in effect at the time of submittal, to the County for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all

*appropriate calculations, a watershed map, increases in downstream flows, proposed on- and offsite improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" measures shall be provided to reduce erosion, water quality degradation, and prevent contamination.*

- (d) *Water quality Best Management Practices (BMPs), shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the County.*

*Storm drainage from on- and offsite impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the County. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.*

*All BMPs shall be maintained as required to insure effectiveness. The Applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to County upon request.*

- (e) *Prior to Improvement Plan approval, the Applicant shall obtain a State Regional Water Quality Control Board National Pollutant Discharge Elimination System (NPDES) construction stormwater quality permit and shall provide to the County evidence of a state-issued Waste Discharge Identification (WDID) number or filing of a Notice of Intent and fees.*

With implementation of the above mitigation measure, the project's construction-related water quality impacts would be reduced to a less-than-significant level because erosion from site soils would be minimized and pollutants would be captured on the site. Also, the implementation of identified spill prevention and cleanup plans would limit the potential for hazardous material spills to adversely affect storm water quality.

### **POTENTIALLY SIGNIFICANT IMPACT: POTENTIAL LONG-TERM DEGRADATION OF WATER QUALITY (IMPACT 13-3)**

Implementation of the project would increase the intensity of use currently present on the project site, which would alter the types, quantities, and timing of contaminant discharges in storm water runoff relative to existing conditions. If this storm water runoff is uncontrolled and not treated, the water quality of the discharge could affect offsite surface water resources.

Water quality degradation from the discharge of industrial runoff occurs when storm water or landscaping irrigation runoff enters the downstream water bodies and/or groundwater carrying contaminants. Storm water may encounter oil, grease, or fuel that has collected on roadways and parking lots and convey these contaminants surface water and/or groundwater. The potential discharges of contaminated industrial runoff from the site could increase or could cause or contribute to adverse effects on aquatic organisms in receiving waters. Industrial contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a "first flush" of runoff.

The amount of contaminants discharged in stormwater from development areas varies based on a variety of factors, including the intensity of industrial uses such as vehicle traffic, types of activities occurring onsite (e.g.,

snow removal services), types of chemicals used onsite (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts), the pollutants on paved surfaces, and the amount of rainfall.

Depending on the specific gasification technology chosen for the project, there may be need for pretreatment of gasification-created wastewater prior to discharge to the regional sewer system. Some gasification systems require syngas conditioning with water scrubbing. This scrubbing removes the tars from the syngas stream, and transfers them to the water medium. Although the scrubber water is recycled to the maximum extent possible, ultimately some wastewater would require discharge. Prior to discharge, this water would be pre-treated to the standards required by T-TSA through the use of activated charcoal filters. Compliance with the pre-treatment requirements of T-TSA would prevent significant environmental impacts to water quality from any wastewater discharged to the T-TSA system.

The potential for the project to contribute substantial additional sources of polluted runoff and to substantially degrade water quality during site operations would be considered a **potentially significant** water quality impact.

### **Finding**

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment. Also, those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

### **Facts in Support of Finding**

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects resulting from long term degradation of water quality.

### **Mitigation Measure 13-3**

*The Applicant shall implement Mitigation Measures 13-1a through e.*

Implementation of Mitigation Measures 13-1a through 13-1e (above) would require construction and operational features of the project to provide sufficient water quality control measures to ensure that the quality of the storm water would not be substantially degraded. With implementation of the above mitigation measures, the project's operational water quality impacts would be reduced to a less-than-significant level.

## **HAZARDOUS MATERIALS AND HAZARDS**

### **SIGNIFICANT IMPACT: IMPACTS FROM EXPOSURE TO UNKNOWN HAZARDOUS MATERIALS (IMPACT 16-1)**

Due to the prior landfill use north of the project site, the presence of VOCs has been detected in groundwater underlying the adjacent closed landfill site. Although the excavation for utilities, trenching, backfilling, and construction of proposed facilities associated with project development would not be expected to encounter VOCs, construction workers and the general public could be exposed to previously undiscovered hazardous materials contamination. These hazardous materials could include petroleum hydrocarbons, pesticides, herbicides, and fertilizers; contaminated debris; elevated levels of chemicals that could be hazardous; or hazardous substances that could be inadvertently spilled or otherwise spread. Because the release of hazardous materials into the environment could result in a safety hazard for people residing or working in the project area, this impact is considered **significant**.

## Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

## Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects resulting from exposure to hazardous materials.

## Mitigation Measure 16-1

*If during site preparation and construction activities, previously undiscovered or unknown evidence of hazardous materials contamination is observed or suspected through either obvious or implied measures (e.g., stained or odorous soil, unknown storage tanks, etc.), construction activities in the area of the find shall immediately cease. County staff shall be immediately consulted and a qualified consultant registered in DTSC's Registered Environmental Assessor Program shall be contracted to assess the situation. Based on the assessment, the Applicant shall implement necessary remediation activities including but not limited to removal of soil and debris, treatment of contaminated groundwater, and capping the site prior to development. All required remediation shall include a DTSC Remedial Action Work Plan or equivalent. Based on consultation between the Registered Environmental Assessor and DTSC, remediation of the site shall be conducted consistent with all applicable regulations.*

Implementation of this mitigation measure would reduce potentially significant impacts associated with the potential exposure of construction workers and the general public to previously undiscovered hazardous materials contamination to a less-than-significant level because construction activities would stop and appropriate remediation activities would be implemented to remove the potential hazard.

## POTENTIALLY SIGNIFICANT IMPACT: IMPACTS FROM EXPOSURE OF PEOPLE OR STRUCTURES TO WILDLAND FIRES (IMPACT 16-4)

Operation of the proposed facility would result in the storage of potentially combustible woody biomass materials that could result in or be combustible during a wildland fire. During the winter months primarily, there would be extensive storage of woody biomass fuel on the site. Biomass stored in piles could be subject to biodegradation internal to the piles creating heat build-up, spontaneous combustion, and risk of fire. In addition, the operation of the facility equipment, including the turbine, the boiler, the bag house, and the fuel feed system and storage area could contribute to this fire risk due to the potential for an explosion or electrical fire.

As described in detail in Chapter 15, Public Services and Utilities of this document, the project would be required to incorporate all California Fire Code requirements, Placer County's Local Hazard Mitigation Plan requirements, Placer County's fire and life safety regulations identified in Placer County Code Chapter 9, Article 9.32 including provisions that would prevent wildland fires. The USFS requires a minimum building setback of 30 feet from surrounding properties. A minimum of 50 feet of setback would be provided with the project. Further, hazard reduction thinning would be implemented on adjacent national forest land to reduce wildfire potential. The project would not be expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. However, because of the extensive storage of woody biomass fuel on the site the risk of impacts from exposure of people or structures to fire from this source is considered **potentially significant**.

## Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

## Facts in Support of Finding

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects resulting from exposure of people or structures to wildland fire.

### Mitigation Measure 16-4

*The Applicant shall regularly compact the fuel piles to minimize fire risk in storage piles. The Applicant shall also prepare detailed written procedures for the management of biomass piles to prevent inadvertent combustion and fires, and that minimize vectors, odors, litter, and human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms. The written procedures shall outline the specific measures that would be implemented to reduce the total pile storage area, and to prevent potential pile fires due to spontaneous combustion. The written procedures shall be subject to review and input by the County LEA, PCAPCD, and the Truckee Fire Protection District prior to initiating operations at the site. These measures shall include at a minimum the following:*

- a) *A schedule for periodic and random load checks of incoming biomass truckloads;*
- b) *Restricted public access to the facility (e.g., fencing);*
- c) *Fire prevention, protection, and control measures, including, but not limited to temperature monitoring of piles at least weekly, adequate water supply for fire suppression, and the isolation of potential ignition source from the biomass piles;*
- d) *Fire lanes between piles shall be provided to allow fire control equipment access to all operational areas;*
- e) *Daily visual inspections of the storage piles to observe whether temperature-related effects are occurring (e.g., steam); and*
- f) *Leachate shall be controlled to prevent contact with the public.*

*As necessary, measures such as moisture management (e.g., wetting), pile aeration, tarping, among others could be implemented to optimally manage the storage piles.*

Implementation of this mitigation measure would reduce potentially significant impacts associated with potential spontaneous combustion in woody biomass fuel piles stored on the project site because adequate control measures would be in place to monitor and prevent fires. This impact would be less than-significant with mitigation.

## CUMULATIVE IMPACTS: TRANSPORTATION

### SIGNIFICANT CUMULATIVE IMPACT: CUMULATIVE TRANSPORTATION IMPACTS (IMPACT 18-1)

The project's cumulative LOS impacts would not result in significant intersection impacts. Nonetheless, the project would contribute traffic trips to the County roadway system. On a long-term cumulative basis, the County requires that any project that contributes traffic trips would be required to pay the County's traffic impact fees. Therefore, County has determined that the project's contribution of trips to the roadway system would be a **cumulatively considerable** impact.

### Finding

Changes or alterations have been required in, or incorporated into, the project by the Placer County Board of Supervisors that mitigate or avoid the significant effects on the environment.

**Facts in Support of Finding**

Placer County has adopted the following mitigation measure that will reduce to less-than-significant levels effects resulting from the project's contribution to cumulative traffic trips on roadways.

**Mitigation Measure 18-1**

*Prior to the issuance of any building permits, the Applicant shall pay County traffic impact fees that are in effect for the Tahoe Resorts area pursuant to applicable Ordinances and Resolutions. Fees shall be paid to Placer County DPW. Final determination of the fees will be made once the final site plans are submitted and approved by DPW.*

Implementation of this mitigation measure, which requires payment of traffic fees, would reduce this impact such that the project's impact would not be cumulatively considerable.

# MITIGATION MONITORING AND REPORTING PROGRAM

The following Mitigation Monitoring and Reporting Program (MMRP) was prepared in compliance with the requirements of California Public Resources Code Section 21081.6 and Section 15097 of the California Environmental Quality Act (CEQA) Guidelines. This MMRP identifies specific funding, timing, and monitoring requirements for implementation of all mitigation measures identified in the Final EIR for the Cabin Creek Biomass Facility Project.

## STANDARD MITIGATION MONITORING PROGRAM

Placer County has adopted a standard mitigation monitoring program (Section 18.28.030 of the Placer County Environmental Review Ordinance) in order to implement California Public Resources Code Section 21081.6. This program requires that mitigation measures recommended for discretionary projects, such as the Cabin Creek Biomass Facility Project, be included in the conditions of approval monitored by the County through a variety of permit processes as listed below.

- ▲ Development Review Committee
- ▲ Improvements Plan Approval
- ▲ Improvements Construction Inspection
- ▲ Encroachment Permit
- ▲ Final Map Recordation
- ▲ Acceptance of Project as Complete
- ▲ Building Permit Approval
- ▲ Certificate of Occupancy

The issuance of any of the listed permits or County actions must be preceded by verification by County staff that certain conditions of approval/mitigation measures have been met. This verification shall serve as the required monitoring for those conditions of approval/mitigation measures. All of the mitigation measures for the Cabin Creek Biomass Facility Project included in the Final EIR would be monitored through the County's Standard Mitigation Monitoring Program. As indicated in the text of each mitigation measure, compliance with each would be verified by County staff prior to issuance of required approvals and permits. Table 1 identifies each mitigation measure that would be monitored through the County's Standard Mitigation Monitoring Program. In addition, some mitigation measures require ongoing implementation and would require monitoring after the point at which Certificates of Occupancy are issued. Table 1 also identifies the mitigation measures that require ongoing implementation, the party(ies) responsible for funding implementation, the necessary timing of implementation that would occur outside the scope of the County's Standard Mitigation Monitoring Program, and the mechanisms for monitoring compliance with each mitigation measure.

Table 1 Mitigation Monitoring and Reporting Program			
Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
<p><b>Mitigation Measure 5-1:</b> To avoid impacts to nesting birds, trees and other vegetation shall be removed from the project site during the non-breeding season (September 1 to March 30) to the extent feasible.</p> <p>If vegetation removal is scheduled to occur during the nesting season (April 1 to August 31), the Applicant shall retain a qualified biologist to conduct preconstruction surveys in suitable habitat on the project site. The surveys will be conducted no less than 14 days and no more than 30 days before the beginning of construction. Survey results shall be sent immediately to Placer County Planning Services Division and to the California Department of Fish and Game (CDFG). If active nests are present on or immediately adjacent to the project site, Planning Services Division staff shall initiate consultation with CDFG to determine appropriate avoidance measures. If no nests are found, no further mitigation is required.</p>	Placer County Planning Services Division	Prior to any vegetation removal or earthwork activities	At onset of vegetation removal or earthwork activities
<p><b>Mitigation Measure 5-2:</b></p> <p>a) To reduce the loss of Jeffrey pine forest and protect individual trees on the project site, the Applicant shall conduct a tree survey to determine the number and size of trees to be removed. The number of trees to be removed shall be minimized to the extent feasible.</p> <p>b) The Applicant shall obtain a tree permit from the County, as per the County's Tree Ordinance. As stated in the Tree Ordinance (12.16.080 Replacement program and penalties), the County may condition any tree permit or discretionary approval involving removal of a protected tree upon (a) the replacement of trees in kind, (b) implementation of a revegetation plan, or (c) payment into the County's Tree Preservation Fund. Because the project site would not support replacement trees or the implementation of a revegetation plan, the Applicant shall either replace trees at an offsite location or contribute to the County's Tree Preservation Fund; this will be determined by the County.</p> <p>The replacement requirement may be calculated based upon an inch for an inch replacement of the removed tree(s) and may require minimum 15 gallon size trees. The total of replacement trees may be required to have a combined diameter of the tree(s) removed. A minimum of 50% of replacement trees shall be of a similar native tree. Replacement trees may be planted onsite or in other areas to the satisfaction of the County Planning Services Division. Such replanting must not result in the over-planting of a site such that an unsafe fire condition is created.</p> <p>The County may decide that if the project site is not capable of supporting all of the replacement trees, the Applicant shall pay the County the current market value, as established by an arborist, forester, or registered landscape architect, of the replacement trees, including cost of installation, to go into a Tree Preservation Fund.</p>	Placer County Planning Services Division	Prior to any tree removal activities	All activities completed prior to approval of Improvement Plans

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Table 1 Mitigation Monitoring and Reporting Program			
Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
Before Improvement Plans are approved, the Applicant shall provide proof to the County that one, or a combination, of the mitigation options described above has been completed and/or funded. Proof of mitigation fulfillment will also be provided to DFG.			
<b>Mitigation Measure 6-1:</b> If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains) is made during construction activities at the project site, ground disturbances in the area of the find shall be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist will determine whether the resource is potentially significant per the California Register of Historic Resources (CRHR) and CEQA Guidelines Section 15064.5 and will develop appropriate mitigation to protect the integrity of the resource and ensure that no additional resources are affected. Mitigation could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.	Placer County Planning Services Division	During earthwork activities	Continuously during earthwork activities
<b>Mitigation Measure 6-2:</b> The County shall implement Mitigation Measures 6-1 and 6-4.	Placer County Planning Services Division	During earthwork activities	Continuously during earthwork activities
<b>Mitigation Measure 6-3:</b> Before the start of grading and/or excavation, the Applicant shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, regarding the possibility of encountering paleontological resources at the site, the appearance and types of paleontological resources likely to be seen during project construction, and proper notification procedures should such resources be encountered.  In the event that paleontological resources are discovered during ground disturbing activities, grading and construction work within 100 feet of the find shall be suspended until the significance of the features can be determined by a qualified professional paleontologist as appropriate. A qualified professional paleontologist shall then make recommendations for measures necessary to protect the find, or to undertake data recovery, excavation, analysis, and curation of paleontological materials as appropriate.	Placer County Planning Services Division	Prior to earthwork activities conduct training; during earthwork activities monitor for resources	Continuously during earthwork activities
<b>Mitigation Measure 6-4.</b> In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, potentially damaging excavation in the area of the burial shall be halted and the Applicant shall contact the Placer County Coroner and a professional archaeologist to determine the nature and extent of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code, Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that	Placer County Planning Services Division	Monitor during site construction activities	Continuously during site construction activities

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Table 1 Mitigation Monitoring and Reporting Program			
Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
<p>determination (Health and Safety Code, Section 7050[c]).</p> <p>If the remains are determined to be those of a Native American, then the following shall occur:</p> <p>(a) The State Historic Preservation Office (SHPO), the Applicant, an archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code.</p> <p>(b) The SHPO shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. Assembly Bill (AB) 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the Applicant shall implement one or more of the following measures:</p> <ul style="list-style-type: none"> <li>i. record the site with the NAHC or the appropriate Information Center,</li> <li>ii. utilize an open space or conservation zoning designation or easement, and/or</li> <li>iii. record a document with the county in which the property is located.</li> </ul> <p>(c) The County or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify a MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The County may also reinter the remains in a location not subject to further disturbance if the County rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the County.</p>			
<p><b>Mitigation Measure 7-3:</b> The Applicant shall ensure that exterior lighting installed at the facility will conform to an approved lighting plan. The exterior lighting plan shall be prepared prior to the issuance of a building permit, and submitted to the County with Improvement Plans for approval. Exterior lighting shall be limited to lighting required for safe operations and security purposes. The exterior lighting plan shall require at a minimum the following:</p>	Placer County Planning Services Division	Prepare lighting plan prior to issuance of building permit	None

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Table 1 Mitigation Monitoring and Reporting Program			
Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
<ul style="list-style-type: none"> <li>&gt; Identification of location of lighting, height, and positioning of all light fixtures, and type and style of light fixtures;</li> <li>&gt; Lighting shall be directed downward using fully shielded fixtures or fixtures otherwise designed to prevent light trespass or projection of light above the horizontal, except as needed for safe operations and security;</li> <li>&gt; The height of light poles shall be limited to 20 feet except as needed for operational and safety purposes. Light fixtures are not to exceed the height of adjacent structures.</li> <li>&gt; Ground level illumination levels shall not exceed two foot candles at the project property line.</li> </ul>			
<p><b>Mitigation Measure 12-1.</b> The Improvement Plan submittal shall include a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:</p> <ul style="list-style-type: none"> <li>A) Road, pavement, and parking area design;</li> <li>B) Structural foundations, including retaining wall design (if applicable);</li> <li>C) Grading practices;</li> <li>D) Erosion/winterization;</li> <li>E) Special problems discovered on-site, (i.e., groundwater, expansive/unstable soils, etc.); and</li> <li>F) Slope stability.</li> </ul> <p>If the soils report indicates the presence of critically expansive or other soils problems that, if not corrected, could lead to structural defects, a certification of completion of the requirements of the soils report shall be required prior to approval of the Improvement Plans. It is the responsibility of the Applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.</p>	Placer County Engineering and Surveying Department	Submit geotechnical report prior to issuance of building permit	Continuously during earthwork activities
<p><b>Mitigation Measure 12-2:</b> The Applicant shall implement Mitigation Measure 12-1 above.</p>	Placer County Engineering and Surveying Department	Submit geotechnical report prior to issuance of building permit	Continuously during earthwork activities
<p><b>Mitigation Measure 13-1.</b> Final design of the detention facilities shall be included in the Final Drainage Report submitted with the Improvement Plans for the project. The final improvement plans shall contain the following information regarding stormwater drainage.</p>	Placer County Engineering and Surveying	Submit improvement plans, including	Periodically during site construction

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**Table 1 Mitigation Monitoring and Reporting Program**

Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
<p>a) The Applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the County for review and approval. The plans shall show all physical improvements as required by the conditions for the project as well as pertinent topographical features both on and off site. All existing and proposed utilities and easements, onsite and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The Applicant shall pay plan check and inspection fees with the first Improvement Plan submittal. (NOTE: Prior to plan approval, all applicable recording and reproduction costs shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the Applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or Development Review Committee (DRC) review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the Applicant's expense and shall be submitted to the County in both hard copy and electronic versions in a format to be approved by the County prior to acceptance by the County of site improvements.</p> <p>Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety.</p> <p>b) The Improvement Plans shall show all proposed grading, drainage improvements, vegetation and tree removal and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by the County. All cut/fill slopes shall be at a maximum of 2:1 (horizontal: vertical) unless a soils report supports a steeper slope and the County concurs with said recommendation. Fill slopes shall not exceed 1.5:1 (horizontal: vertical)</p> <p>The Applicant shall revegetate all disturbed areas. Revegetation, undertaken from April 1 to October 1, shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the Applicant's responsibility to ensure proper installation and maintenance of erosion control/winterization before, during, and after project construction. Soil</p>	<p>Department</p>	<p>drainage report, prior to issuance of building permit; revegetate site prior to issuance of certificates of occupancy;</p>	<p>activities</p>

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Table 1 Mitigation Monitoring and Reporting Program			
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<p>stockpiling or borrow areas, shall have proper erosion control measures applied for the duration of the construction as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the County.</p> <p>The Applicant shall submit to the County a letter of credit or cash deposit in the amount of 110 percent of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the Applicant or authorized agent.</p> <p>If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the County for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the County to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.</p> <p>c) The Improvement Plan submittal shall include a drainage report in conformance with the requirements of Section 5 of the Land Development Manual that are in effect at the time of submittal, to the County for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" measures shall be provided to reduce erosion, water quality degradation, and prevent contamination.</p> <p>d) Water quality Best Management Practices (BMPs), shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the County.</p> <p>Storm drainage from on- and offsite impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the County. BMPs shall be designed at a minimum in accordance with the Placer County</p>			

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Table 1 Mitigation Monitoring and Reporting Program			
Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
<p>Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.</p> <p>All BMPs shall be maintained as required to insure effectiveness. The Applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to County upon request.</p> <p>e) Prior to Improvement Plan approval, the Applicant shall obtain a State Regional Water Quality Control Board National Pollutant Discharge Elimination System (NPDES) construction stormwater quality permit and shall provide to the County evidence of a state-issued Waste Discharge Identification (WDID) number or filing of a Notice of Intent and fees.</p>			
<p><b>Mitigation Measure 13-3:</b> The Applicant shall implement Mitigation Measures 13-1a through e.</p>	<p>Placer County Engineering and Surveying Department</p>	<p>Submit improvement plans, including drainage report, prior to issuance of building permit; revegetate site prior to issuance of certificates of occupancy;</p>	<p>Periodically during site construction activities</p>
<p><b>Mitigation Measure 16-1:</b> If during site preparation and construction activities, previously undiscovered or unknown evidence of hazardous materials contamination is observed or suspected through either obvious or implied measures (e.g., stained or odorous soil, unknown storage tanks, etc.), construction activities in the area of the find shall immediately cease. Placer County Environmental Health Division staff shall be immediately consulted and a qualified consultant registered in DTSC's Registered Environmental Assessor Program will be contracted to assess the situation. Based on the assessment, the Applicant shall implement necessary remediation activities including but not limited to removal of soil and debris, treatment of contaminated groundwater, and capping the site prior to development. All required remediation shall include a DTSC Remedial Action Work Plan or equivalent. Based on consultation between the Registered Environmental Assessor and DTSC, remediation of the site shall be conducted consistent with all applicable regulations.</p>	<p>Placer County Environmental Health Services</p>	<p>Monitor during site construction activities</p>	<p>Continuously during site construction activities</p>

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<b>Table 1 Mitigation Monitoring and Reporting Program</b>			
Mitigation Measure	Individual Responsible for Monitoring and Verifying Compliance	Timing of Initial Action	Frequency and Duration of Monitoring
<p><b>Mitigation Measure 16-4.</b> The Applicant shall regularly compact the fuel piles to minimize fire risk in storage piles. The Applicant shall also prepare detailed written procedures for the management of biomass piles to prevent inadvertent combustion and fires, and that minimize vectors, odors, litter, and human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms. The written procedures shall outline the specific measures that would be implemented to reduce the total pile storage area, and to prevent potential pile fires due to spontaneous combustion. The written procedures shall be subject to review and input by the County LEA, PCAPCD, and the Truckee Fire Protection District prior to initiating operations at the site. These measures shall include at a minimum the following:</p> <ul style="list-style-type: none"> <li>a) A schedule for periodic and random load checks of incoming biomass truckloads;</li> <li>b) Restricted public access to the facility (e.g., fencing);</li> <li>c) Fire prevention, protection, and control measures, including, but not limited to temperature monitoring of piles at least weekly, adequate water supply for fire suppression, and the isolation of potential ignition source from the biomass piles;</li> <li>d) Fire lanes between piles shall be provided to allow fire control equipment access to all operational areas;</li> <li>e) Daily visual inspections of the storage piles to observe whether temperature-related effects are occurring (e.g., steam); and</li> <li>f) Leachate shall be controlled to prevent contact with the public.</li> </ul> <p>As necessary, measures such as moisture management (e.g., wetting), pile aeration, tarping, among others could be implemented to optimally manage the storage piles.</p>	Placer County Environmental Health Services	Monitor during facility operations	Periodically during facility operations
<p><b>Mitigation Measure 18-1.</b> Prior to the issuance of any building permits, the Applicant shall pay County traffic impact fees that are in effect for the Tahoe Resorts area pursuant to applicable Ordinances and Resolutions. Fees shall be paid to Placer County DPW. Final determination of the fees will be made once the final site plans are submitted and approved by DPW.</p>	Placer County Department of Public Works	Prior to the issuance of any building permits	Completion prior to the issuance of any building permits

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