CEQA requires an EIR to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents discussion of CEQA-mandated analysis for cumulative impacts, irreversible impacts, and growth inducement associated with the proposed project.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

…the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

1) Either:

> (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,
>
> (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

CUMULATIVE SETTING

Unless otherwise specified, the cumulative setting is the unincorporated area of Shasta County, which includes the Sphere of Influence surrounding the City of Anderson. Under CEQA, the discussion of cumulative impacts should focus on the severity of the impacts and the likelihood of their occurrence. This cumulative scenario includes all development envisioned through 2030, with a development pattern consistent with the Shasta County General Plan and the City of Anderson General Plan.

CUMULATIVE EFFECTS OF THE PROJECT

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]). Cumulative impact analysis may be less detailed than the analysis of the project's individual effects (State CEQA Guidelines 15130[b]).

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. This EIR uses the projection approach for the cumulative analysis and considers the development anticipated to occur upon buildout of the Shasta County General Plan and the City of Anderson General Plan.

Cumulative Impacts

Effects associated with agricultural resources, land use planning, mineral resources, population growth and housing were discussed in the Initial Study and determined to not have an impact or to

have a less than significant impact. The analysis in the Initial Study has identified that these impacts will not contribute any substantial incremental effects, no comments were received in response to the NOP regarding these issues, and the analysis performed for preparation of this Draft EIR did not indicate that the project would have a considerable contribution to significant cumulative effects in these issue areas; therefore, the project is determined to have a less than considerable contribution to cumulative impacts associated with agricultural resources, land use planning, mineral resources, population growth and housing.

Cumulative impacts for most issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. Exceptions to this are traffic, noise and air quality (the latter two of which are associated with traffic volumes and operational emissions from the cogeneration facility), which may be quantified by estimating future traffic patterns, pollutant emitters, etc. and determining the combined effects that may result. In consideration of the cumulative scenario described above, the proposed project may result in the following cumulative impacts.

AESTHETICS

Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region (Considerable Contribution and Significant and Unavoidable)

The cumulative setting for aesthetics is the Anderson Planning Area in the unincorporated portion of Shasta County. Under cumulative conditions, buildout of the Anderson and Shasta General Plans would result in changes to the visual character of the Planning Area from a more rural setting to one that is more characterized by urban uses. Despite the General Plan's policies and actions, in conjunction with adopted State, County and City regulations to enhance "hometown feel" and preserve open space, development permitted under the proposed General Plans would result in a significant impact to the existing visual identity and character of the area due to the amount of growth allowed.

As described in Section 3.1- Aesthetics, implementation of the proposed project would change the visual character of the project site by introducing structures that are taller than all other structures currently on the site, which will be visible from a wide area surrounding the site. This project-specific impact was determined to be significant and unavoidable. The proposed project would contribute to a cumulative change in visual character of the area by introducing visually prominent buildings and features. While mitigation measures MM 3.1-1 and MM 3.1-2 would reduce the project's contribution to cumulative increases in visual impacts by requiring the use of non-reflective building materials and lighting that is shielded and directed downward, the project's contribution to visual resource impacts under cumulative conditions is **cumulatively considerable** and **significant and unavoidable**.

AIR QUALITY

Impact 4.2: Cumulative Impact on the Region's Air Quality (Considerable Contribution and Significant and Unavoidable)

The cumulative setting for air quality impacts is the Northern Sacramento Valley Air Basin. Under buildout conditions in the Shasta County General Plan, the Northern Sacramento Valley Air Basin would continue to experience increases in criteria pollutants and efforts to improve air quality throughout the basin would be hindered.

As discussed under Impact 3.2-2, the proposed project would result in increased emissions associated with vehicle miles travelled and operation of the proposed cogeneration facility. Mitigation measures, which include BACT, have been implemented into the project's design in order to reduce operational emissions levels to the greatest extent feasible. However, as further discussed under Impact 3.2-2, operation of the proposed cogeneration facility would exceed the SCAQMD thresholds of significance for Beryllium. There are no additional feasible mitigation measures that would reduce this cumulative impact to a less than significant level. The project's contribution to cumulative air quality impacts is **cumulatively considerable** and **significant and unavoidable**.

Impact 4.3: Increased Project-Related Greenhouse Gas Emissions May Contribute to Climate Change (Cumulatively Considerable and Significant and Unavoidable)

As discussed under Impact 3.2-6, the proposed project would have a **significant and unavoidable** contribution to cumulative impacts associated with climate change and global warming. Section 3.2.4 of the Air Quality Chapter of this EIR includes a full discussion and analysis of the cumulative GHG impacts associated with project implementation.

BIOLOGICAL RESOURCES

Impact 4.4: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Less than Considerable Contribution)

The cumulative setting for biological resources includes the bioregions within Shasta County, as described in greater detail in Section 3.3. Development associated with implementation of the Anderson and Shasta General Plans would contribute to the ongoing loss of natural and agricultural lands in the area, which currently provide habitat for a variety of species. Cumulative development would result in the conversion of existing biological habitat to urban uses. The Shasta County General Plan, in addition to regional, State and federal regulations, includes policies and measures that mitigate impacts to biological resources associated with General Plan buildout.

As described in Section 3.3- Biological Resources, construction and operation of the proposed project would not result in direct or indirect impacts to biological resources. Mitigation measures presented within this EIR would further reduce potential impacts to biological resources and sensitive habitat. The project would not result in any off-site biological resource impacts that would contribute to cumulative impacts throughout the region. Therefore, the project's contribution to cumulative biological resource impacts is **less than cumulatively considerable**. No further mitigation is required.

CULTURAL RESOURCES

Impact 4.5: Cumulative Impacts on Known and Undiscovered Cultural Resources (Less than Cumulatively Considerable)

The cumulative setting for cultural resources includes the unincorporated areas of Shasta County. Cumulative development anticipated in the greater Shasta County area, including growth projected by adopted general plans, may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. As discussed in Section 3.4- Cultural Resources, there are no known cultural or historic resources present on the project site. Mitigation measures provided in Section 3.4 would require the proposed project to evaluate any resources discovered during construction activities. Any significant finds would be required to be preserved, either through relocation or documentation and the project is not anticipated to considerably contribute to a significant reduction in cultural resources. Therefore, the project would have a **less than cumulatively considerable** contribution to impacts to cultural resources and no further mitigation is required.

GEOLOGY AND SOILS

Impact 4.6: Cumulative Impact on Geologic and Soils Characteristics (Less than Cumulatively Considerable)

The cumulative setting for geology and soils includes the unincorporated areas of Shasta County. As discussed in Section 3.5- Geology and Soils, implementation of the proposed project would not result in any significant impacts related to this environmental topic. Geologic and soils impacts tend to be site-specific and project-specific. Implementation of the proposed project would not result in increased risks or hazards related to geologic conditions in the cumulative setting area, nor would it result in any off-site or indirect impacts. This is considered to be a **less than cumulatively considerable** impact, and no further mitigation is required.

HAZARDS AND HAZARDOUS MATERIALS

Impact 4.7: Cumulative Impact Related to Hazards and Hazardous Materials (Less than Cumulatively Considerable)

The cumulative setting for hazards includes the unincorporated areas of Shasta County. As discussed in Section 3.6- Hazards and Hazardous Materials, implementation of the proposed project would not result in any significant impacts related to this environmental topic. Hazard-related impacts tend to be site-specific and project-specific. Implementation of the proposed project would not result in increased risks of hazards in the cumulative setting area, nor would it result in any off-site or indirect impacts. Mitigation measures have been included to reduce the risk of on-site hazards, fires, and to reduce potential risks associated with flooding. This is considered to be a **less than cumulatively considerable** impact, and no further mitigation is required.

HYDROLOGY AND WATER QUALITY

Impact 4.8: Cumulative Impacts to Groundwater Levels, Groundwater Recharge, Off Site Flooding and Water Quality (Less than Cumulatively Considerable)

The cumulative setting for hydrology and water quality includes the unincorporated areas of Shasta County. Future development throughout the County, as identified in the County General Plan, will increase demand for groundwater, increase the amount of impervious surfaces in the County, which may impact groundwater recharge rates, and increase runoff throughout the County, which may impact surface water quality.

As described in Section 3.7, mitigation measures have been included in this EIR that would ensure that any stormwater discharged from the project site would first be treated with BMPs to ensure less than significant impacts to area surface water resources, consistent with the requirements of the Regional Water Quality Control Board.

The analysis under Impact 3.7-2 in Section 3.7 of this EIR demonstrates that under cumulative (2030) conditions, the water demands from the proposed project would not result in significant impacts to groundwater levels, interfere with groundwater recharge, or interfere with productivity of area wells. Therefore, this impact is considered to be **less than cumulatively considerable**.

NOISE

Impact 4.9: Cumulative Exposure of Existing and Future Noise- Sensitive Land Uses to Increased Noise Resulting from Cumulative Development (Less than Cumulatively Considerable)

The cumulative setting for noise includes the unincorporated areas of Shasta County. Cumulative development conditions associated with General Plan buildout would result in increased cumulative roadway noise levels, and would also result in increased noise associated with future development. As described in greater detail in Section 3.8- Noise, ambient noise levels in the project area are influenced primarily by traffic noise emanating from area roadways and existing sawmill and cogeneration activities on the SPI site. The primary factor for cumulative noise impact analysis is, therefore, the consideration of future traffic noise levels and operation of the proposed cogeneration facility.

As described in greater detail in Section 3.8, the noise levels associated with the proposed plant will be approximately 3 dBA lower than the existing plant. This is due to the fact that the equipment is new and more efficient, the boiler and the turbine will be located within metal buildings, and the boiler will be fitted with a silencer on the steam vent. In addition, the noise levels associated with the proposed power plant are less than the measured daytime and nighttime ambient noise levels shown in Table 3.8-2. Additionally, traffic noise generated by the proposed project would result in increases of less than 1 dBA on area roadways under cumulative conditions. A noise increase of this size would not be perceptible to the human ear. Therefore, under cumulative conditions, the project would result in **less than cumulatively considerable** impacts to noise.

PUBLIC SERVICES, RECREATION AND UTILITIES

Impact 4.10: Cumulative Impact on Public Services, Recreation and Utilities (Less than Cumulatively Considerable)

The cumulative setting for public services consists of the unincorporated areas of Shasta County. Cumulative growth that would occur within Shasta County over the life of the General Plan will result in increased demand for fire protection services, recreational resources and utilities. As discussed in greater detail in Section 3.19- Public Services, implementation of the proposed project would not result in the need to construct new or expanded fire protection facilities recreational facilities or off site utilities infrastructure in order to serve the proposed project. Additionally, as detailed in Section 3.9, implementation of the proposed project would not result in decreased service levels for fire projection services. As growth within the Shasta County Planning Area continues under cumulative conditions, fire services, recreational resources and utilities will be expanded on an as-needed basis in order to maintain adequate staffing levels, response times and public service levels. As demonstrated in Section 3.9, project implementation would not result in adverse impacts to public services, recreational resources or utilities. Therefore, under cumulative conditions, the project would result in **less than cumulatively considerable** impact.

TRANSPORTATION AND CIRCULATION

Impact 4.11: Cumulative Impact on the Transportation Network (Cumulatively Considerable and Significant and Unavoidable)

The cumulative setting for transportation and circulation impacts includes the study roadways and intersections identified in Section 3.10 and shown in Figure 3.10-1. Under cumulative conditions, the increase in development associated with General Plan buildout is anticipated to result in increased traffic congestion on local and regional roadways and intersections

Cumulative Conditions refer to analysis scenarios that would exist following assumed build out of the local General Plans, and typically refer to analysis scenarios approximately 20 years in the future. Within this analysis, Cumulative Conditions are assumed as those that will exist in the year 2030 consistent with the Shasta County Regional Travel Demand Model.

As described under Impact 3.10-2, under cumulative conditions, the following intersections would operate unacceptably:

I-5 SB Ramps/Riverside Avenue: This two-way stop controlled unsignalized intersection would operate at unacceptable LOS during both the AM and PM peak hour periods under Cumulative Plus Project conditions. This unacceptable LOS would be caused by the delay experienced by vehicles exiting I-5 that are waiting to find gaps in the uncontrolled traffic flow on Riverside Avenue. This intersection would meet the peak hour signal warrant volume under both AM and PM peak hour conditions. The addition of project generated traffic would increase the delay at this intersection by more than 5 seconds (the delay was reported as overflow, because calculated delay is over 999 seconds) under AM and PM peak hour periods.

I-5 NB Ramps/Riverside Avenue: This two-way stop controlled unsignalized intersection would operate at unacceptable LOS during both the AM and PM peak hour periods under Cumulative Plus Project conditions. This unacceptable LOS would be caused by the delay experienced by vehicles exiting I-5 that are waiting to find gaps in the uncontrolled traffic flow on Riverside Avenue. This intersection would meet the peak hour signal warrant volume under both AM and PM peak hour conditions. The addition of project generated traffic would increase the delay at this intersection by more than 5 seconds (the delay was reported as overflow, because calculated delay is over 999 seconds) under AM and PM peak hour periods.

Mitigation Measures 3.10-1 and 3.10-2 identify improvements that would reduce these impacts to a less than significant level. However, as described in greater detail in Section 3.10, these intersections are under the jurisdiction of Caltrans, and Shasta County cannot guarantee that the recommended improvements will be implemented. Therefore, the project's contribution to these cumulative intersection impacts is considered **cumulatively considerable and significant and unavoidable.** There is no additional feasible mitigation available to reduce the significance of these impacts.

4.2 GROWTH-INDUCING EFFECTS

INTRODUCTION

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

> *The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.*

Based on the CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand *(Napa Citizens for Honest Government v. Napa County Board of Supervisors)*. Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

Components of Growth

The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

Direct Population Growth

No housing is proposed as part of this project, and therefore project implementation would not lead to direct population growth.

Indirect Population Growth

As described above, projects that do not directly induce population growth still have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the proposed project would not lead to significant job growth in Shasta County. As described in Section 2.0, project implementation would increase employment demand at the SPI facility by six (6) employees. This increase in employment demand would not lead to indirect population growth in the region.

The project would not require the extension of infrastructure (water, sewer, and roads) to connect the site to the surrounding infrastructure network. Therefore, the project would not lead to indirect population growth as a result of the extension of infrastructure to an area that would not previously served. As described in Section 2.0, any excess electricity generated by the project would be sold to a local electricity utility. There provision of this additional supply of electricity

would not lead to indirect population growth, as there is currently an ample supply of electricity resources from other sources to meet existing and future demand in the project area.

4.3 SIGNIFICANT IRREVERSIBLE EFFECTS

Legal Considerations

CEQA Section 15126.2(c) and Public Resources Code Sections 21100(b)(2) and 21100.1(a), requires that the EIR include a discussion of significant irreversible environmental changes which would be involved in the proposed action should it be implemented. Irreversible environmental effects are described as:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Determining whether the proposed project would result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed such that there would be little possibility of restoring them. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Analysis

A variety of resources, including land, energy, water, construction materials, and human resources would be irretrievably committed for the project's initial construction, infrastructure installation and connection to existing utilities, ongoing operation and its continued maintenance. Construction of the project would require the commitment of a variety of other non-renewable or slowly renewable natural resources such as lumber and other forest products, sand and gravel, asphalt, petrochemicals, and metals.

Additionally, a variety of resources would be committed to the ongoing operation, maintenance and life of the proposed project. An increase in the amount of wood-pulp and lumber by-products burned at the SPI site would occur as a result of project implementation. However, project implementation would not result in an increase in logging operations or tree removal in the region. All of the fuel that would be burned in the proposed boiler would come from existing SPI sources and other sources of wood or agricultural waste that would occur regardless of whether or not the project were implemented. For example, the project may burn agricultural waste (orchard

branches, etc), but would not result in increased generation of these resources. Fossil fuels will be used during project operations, primarily through the use of heavy equipment to transport biomass materials to the project site, within the project site, and to haul away ash from the project site. Natural gas will be used during the initial startup of the cogeneration facility and after periods of inactivity for maintenance. These energy resource demands relate to initial project construction, project operation and site maintenance and the transport of people and goods to and from the project site.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the proposed project are discussed in Chapters 3.1 through 3.10 (project-level) and previously in this chapter (cumulative-level). Refer to those discussions for further details and analysis of the significant and unavoidable impact identified below:

- Impact 3.1-2: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character
- Impact 3.2-2: Project implementation may conflict with, or obstruct, the applicable air quality plan, cause a violation of air quality standards, contribute substantially to an existing air quality violation, or result in a cumulatively considerable net increase of a criteria pollutant in a non-attainment area
- Impact 3.2-6: Project implementation could result in cumulative effects on climate change and global warming or conflict with a locally adopted plan to reduce climate change impacts
- Impact 3.10-2: Project implementation would result in unacceptable levels of service at study area intersections under Cumulative Plus Project Conditions
- Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region (Considerable Contribution and Significant and Unavoidable)
- Impact 4.2: Cumulative Impact on the Region's Air Quality (Considerable Contribution and Significant and Unavoidable)
- Impact 4.3: Increased Project-Related Greenhouse Gas Emissions May Contribute to Climate Change (Significant and Unavoidable)
- Impact 4.11: Cumulative Impact on the Transportation Network (Cumulatively Considerable and Significant and Unavoidable)

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