

3.9 Socioeconomics, Population, and Housing

This section presents information on regional and local socioeconomic conditions, population, and housing and the potential impacts of the Proposed Action and alternatives on these resources. A detailed discussion of poverty rates and population by race and ethnicity is included in Section 3.13, Environmental Justice. Much of this section has been taken directly from Trinity County 2004: Economic and Demographic Profile (Center for Economic Development 2004).

Under CEQA, the “[e]conomic or social impacts of a project shall not be treated as significant impacts on the environment” (CEQA Guidelines Section 15131). Consequently, this section addresses CEQA issues only to the extent that potential social or economic impacts of the Proposed Action would have either a direct impact or would result in reasonably foreseeable indirect impacts on the physical environment.

3.9.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

Regional Setting

Regional Labor Market

Trinity County is a rural region with substantial amounts of public land. As a result, the region is largely dependent on natural resources and tourism for its economic base.

Data for labor force, employment, and unemployment were obtained from the California Employment Development Department (EDD), which estimates labor force and employment statistics for all counties in the state. Data for employment by industry were collected from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) through the Regional Economic Information System (REIS). Differences in calculation methods and differences regarding what is considered employment may account for differences in EDD and REIS employment data (Center for Economic Development 2001).

Labor Force

Labor force refers to the total civilian labor force and is the number of non-institutionalized people age 16 and older who are working or looking for work and who are not in the military. Total labor force includes wage and salary workers, proprietors, and household workers. Annual average labor force is the 12-month average labor force for a given year. In general, the average total labor force trend in Trinity County between 1991 and 2002 was upwards, having increased from 5,130 in 1991 to 5,300 in 2002, an overall 3 percent increase (Center for Economic Development 2004). The majority of the total labor force is concentrated in Weaverville and Hayfork. The primary communities within Trinity County are shown in Figure 3.9-1.

Employment

Employment refers to total civilian employment as calculated by the EDD. Total civilian employment is the number of people employed in both the private sector and the non-military public sector. Employment includes wage and salary workers, proprietors, and household workers.

Employment rates in Trinity County between 1990 and 2001 showed a significant decline, dropping by approximately 20 percent (a loss of 1,090 jobs). A decline in the timber industry and associated jobs accounted for this drop. However, between 2001 and 2002, total employment rates increased by 3.9 percent (Center for Economic Development 2004) as opportunities arose for increased tourism- and transportation-related job growth. Despite mill closures in both Weaverville and Hayfork, these two communities continue to be the county's largest employment centers.

Unemployment

Unemployment refers to the annual average civilian unemployment rate and represents the percentage of the total civilian labor force that is not employed. According to the California EDD, unemployment in the county declined slightly between 1990 and 2004. The annual average unemployment rate in the county generally remains far above the unemployment rate for California as a whole. Since 1990, unemployment within the county has been high, averaging 13.9 percent compared to the statewide average of 7.5 percent.

The county's labor market depends on such factors as distance to SR 299 and distance to Weaverville, the county's business center and largest labor market. Ruth/Mad River, Hayfork, Zenia/Kettenpom, and Hyampom are rural communities that do not have ready access to SR 299 or Weaverville. Subsequently, these communities have fewer job opportunities and a larger unemployment rate. In contrast, communities located on SR 299, such as Helena, Junction City, and Douglas City, from which Weaverville can be accessed directly, have smaller unemployment rates.

Employment by Industry

In this section, industries are defined using the Standard Industrial Classification Manual, published by the Executive Office of the President, U.S. Office of Management and Budget (1987). The measurement of employment by industry is based on the type of industry and the annual average number of full-time and part-time jobs for a given industry in a particular year.

The industrial employment trend in Trinity County is a function of the county's ample recreational opportunities and tourism. Consequently, service industries, including hotels and lodging, recreation services, museums, auto repair, and engineering and management services, continue to experience growth. The industry with the highest earnings is government and public administration.

Income

Per Capita Income

Data from the U.S. Bureau of the Census (Census) and the BEA show that per capita income levels in Trinity County tend to be significantly below state levels. Per capita income is the average income computed for every man, woman, and child in a particular group. The Census derives per capita income by dividing the total income of a particular group by the total population in that group (excluding patients or inmates in institutional quarters). Per capita income data for Trinity County and California are depicted in Table 3.9-1.

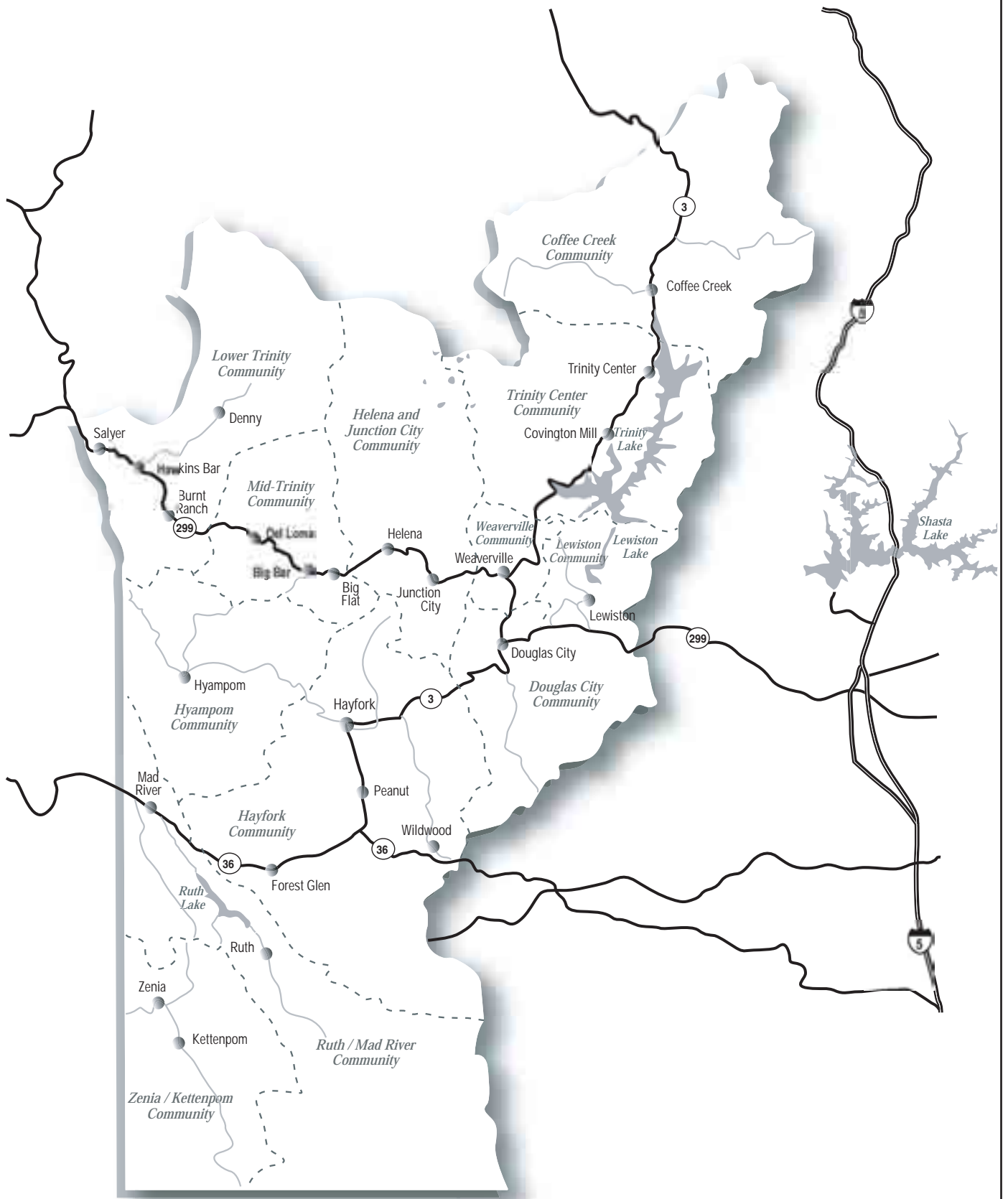


Figure 3.9-1
Trinity County Communities

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TABLE 3.9-1
PER CAPITA INCOME, TRINITY COUNTY AND CALIFORNIA

Year	Trinity County	California
1990	\$14,469	\$21,882
1991	\$14,824	\$21,983
1992	\$15,605	\$22,650
1993	\$15,842	\$22,833
1994	\$15,863	\$23,348
1995	\$16,445	\$24,339
1996	\$16,999	\$25,373
1997	\$17,693	\$26,521
1998	\$18,208	\$28,240
1999	\$19,084	\$29,698
2000	\$19,995	\$32,334
2001	\$21,223	\$32,877

Source: Adapted from Center for Economic Development 2004

The data in Table 3.9-1, compiled by the CED using the Census and the California Department of Finance databases, show that while the per capita income of Trinity County and the state are both increasing, Trinity County continues to lag far behind the state, with its per capita income as much as 36 percent below that of the state in 2001.

Median Household Income

Median household income is the midpoint of the distribution of household incomes. Half of all households have incomes above this level, and half have incomes below this level. Median household income in Trinity County, though increasing, is lower than the state median household income. From 1989 to 1999, median household income in the county increased by 26 percent, which is comparable to the 25 percent increase in median household income for the state, measured over the same period (Center for Economic Development 2004). However, median household income in Trinity County continues to lag behind the state median by approximately 42 percent (based on 1999 data). This represents an average of \$19,782 less money available for each household in the county than for each household in the rest of the state.

Regional Population

The population of Trinity County is generally characterized by stagnant growth, with higher proportions of white and retirement-age persons and lower proportions of Hispanic and young working-age persons. The county's demographics are influenced by the fact that approximately 75 percent of its land is federally owned and 10 percent is in private industrial timber production, much of which is restricted from development by Timber Production Zone zoning. Thus, only 15 percent of the county is private land usable for development purposes. The county's rugged terrain and remote location also influence its

demographics by limiting the developable area. Education levels of residents are typical of most of rural northern California, with a greater proportion of high school graduates and a smaller proportion of college graduates.

Total Population/Population Density

Population estimates are based on the number of people who were residing within the county boundaries, either permanently or temporarily, on January 1 of the given year. Total population includes foreign and domestic migrant workers. Trinity County's population continues to grow at a considerably lower rate than California on average, and was projected by the U.S. Census Bureau in 2000 to be ranked 54th in total population out of 58 California counties by 2004 (U.S. Census Bureau). Between 1990 and 2003, the county experienced only a 3 percent increase in population compared to an estimated 16 percent increase in California's population during the same period (U.S. Census Bureau 2005). A decline in the timber industry and an attendant loss of jobs has had a significant effect on the county's population.

Trinity County has a population density well below the population density of California as a whole. The population density of the county in 2003 was estimated at 4.2 persons per square mile, while the population density of California was estimated at approximately 230 persons per square mile (Center for Economic Development 2004). Most of the population of Trinity County is concentrated in Weaverville, Hayfork, and Lewiston (Figure 3.9-1). The communities with the lowest population concentrations, Coffee Creek and Zenia/Kettenpom, are in some of the most remote areas of the county (Figure 3.9-1).

Demographics related to Trinity County's racial and ethnic composition are discussed in detail in Section 3.13, Environmental Justice.

Housing

Each year, the California Department of Finance, Demographic Research Unit estimates the number of housing units located in each county and incorporated place, as well as California as a whole. Housing units are estimated by adding new construction and units included in annexations and subtracting demolitions from the Census benchmark. The total number of housing units in Trinity County in 2006 is estimated at 8,346. The total number of occupied housing units is estimated at 5,843 (State of California 2006).

Local Setting

Douglas City offers limited services, including several commercial enterprises, a U.S. Post Office, a Trinity River treatment plant, and Douglas City Elementary School. It also includes a few recreation-based businesses such as Douglas City Campground, Trinity Island Resort, Indian Creek Trailer and RV Park, Indian Creek Lodge and Trinity River Outfitters. These businesses provide economic benefits to the local community and the county; however, the Douglas City community is primarily residential and does not provide significant socioeconomic benefit to Trinity County beyond property tax revenues and revenues from mining operations. Existing land uses in the area of the rehabilitation site are primarily rural residential. There are 43 privately-owned parcels within the site boundary, all of which are devoted to residential uses with the exception of the parcels containing the Indian Creek Lodge and Dave's Taxidermy.

Planned Developments in Indian Creek Vicinity

Zoning designations within the project area are largely residential, with a minimum parcel size ranging from one to 10 acres. Located directly adjacent to the river, a portion of many of these parcels fall into the Flood Hazard and Open Space designation zones, making further development in these areas difficult. There is little likelihood that any parcels in the project vicinity will be further subdivided in the future due to minimal county services (i.e., community water service); therefore, there is little potential for increased development densities. Most of the public land in the area is managed by the BLM consistent with the WSRA and their adopted land management plan for the area. Rural Residential zoning within the Douglas City community requires a minimum parcel size of 1 to 2.5 acres to provide for both individual water and sewer systems.

3.9.2 RELEVANT PLANS AND POLICIES

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

Persons and businesses displaced as a result of construction and/or operation of the Proposed Action are protected under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended April 2, 1987. This law was designed to mitigate adverse impacts experienced by private property owners in the public taking of land. Under this Act, persons or businesses displaced would receive compensation from the public entity that funds the project. Listed below are some of the major costs a public entity must compensate a displaced person for as part of the cost of acquisition of real property for a public use. A public entity is required by law to provide these and other compensation as outlined in the relocation assistance guidelines:

- actual and reasonable expense in moving him/herself, a family, a business, or a farm operation, including expense in moving personal property;
- actual direct losses of tangible personal property as a result of moving or discontinuing a business or farm operation;
- actual and reasonable expenses in searching for a replacement business or farm; and
- a fixed or in-lieu payment to compensate eligible displaced businesses for a substantial loss of existing patronage.

The Act also stipulates that a public entity shall not participate in a project that will displace individuals from their homes unless comparable replacement dwellings will be available within a reasonable period before displacement.

A comparable replacement is defined as one that is

- decent, safe, and sanitary;
- functionally equivalent to the displaced dwelling;
- an adequate size to accommodate the family being relocated;
- in an area not subject to unreasonable adverse environmental conditions;

- generally not less desirable than the location of the displacement dwelling with respect to accessibility to public utilities, commercial and public facilities, and place of employment; and
- on a site that is typical in size for residential development with normal size improvements.

Implementation of the Proposed Action would not result in the displacement of any individual from his or her home or business.

Trinity County General Plan Goals

The following General Plan goals have been established by the County:

1. To provide more diverse sources of income and stabilize the economy.
2. To provide a higher average in income levels.

Land Use Element Goals and Objectives

Cultural

Goal: Retain the rural character of Trinity County by:

- Limiting dwelling density based on retention of rural character and conservation of important resources, including historic sites and structures, and wildlife.
- Considering the “rights” of the individual when making decisions as well as the “rights” of the community.

Goal: Encourage adequate housing and residential space to keep pace with a moderate population growth by:

- Clearly designating those areas in which additional housing is necessary and desirable.
- Minimizing the “bureaucratic machinery” a landowner faces when attempting to develop housing that is consistent with this plan.
- Avoiding the need for increased public services.
- Keeping density, and thus demand, as low as possible in the most rural areas.
- Determining “threshold” densities that require expensive public services.
- Exploring outside funding possibilities available to the County when new or improved services must be provided.

Economic

Goal: Maintain and enhance a viable economic base for Trinity County by:

- Maintaining as many privately owned prime timber, agricultural, mineral, sport and commercial fishery, and animal-producing lands as possible.
- Encouraging tourism.

- Implementing the General Plan so that it is applied fairly and consistently and by stabilizing land-use regulations.

Douglas City Community Plan Goals

This plan includes the area centered on the Trinity River from Grass Valley Creek to slightly downstream of Steiner Flat.

Economic Development

Goal: To recognize and encourage, as a priority, the small business activities located throughout the Plan area.

- Insure that State, Federal, or County projects provide every opportunity for small contractors to favorably compete against large contractors.

Goal: To encourage recreation development as a viable section of the local economy.

- Ensure that publicly owned access areas are developed with sufficient services to meet the needs of visitors.

Goal: To ensure that resource production lands continue to be utilized for such purposes.

- Protect resource areas from encroachment by incompatible uses.

Trinity County Housing Policies

In order to provide an adequate supply of housing, the County has established the following policies:

1. Encourage the overall production of housing.
2. Encourage the production of housing opportunities for all income groups.
3. Work towards improving infrastructure capacity.
4. Encourage the production of housing for persons with special housing needs.
5. Encourage the repair and rehabilitation of existing housing stock.
6. Ensure that there are adequate sites available to support future housing needs.
7. Prevent discrimination in housing.
8. Encourage citizen participation during the preparation of the housing element and other general and community plan documents.

Project Consistency with the Trinity County General Plan and Community Plans

The goals and objectives described in Chapter 1 are generally compatible with the applicable General Plan goals and policies summarized above. The overall goal of the Proposed Action is to rehabilitate the sites so that they function in a manner that is closer to historic conditions (i.e., pre-Lewiston Dam).

Enhancement of river recreation and tourism opportunities associated with the Trinity River would contribute to the local economy by creating new job and business opportunities, increasing the business

volume of existing businesses, and adding to the current tax base. The County's General Plan and the Douglas City Community Plan have set goals aimed at moderate increases in population growth, encouraging area tourism, improving the condition of existing homes, and encouraging housing production. Implementation of the Proposed Action would provide a basis for economic growth and is thus consistent with local and county planning goals and objectives.

3.9.3 ENVIRONMENTAL CONSEQUENCES/IMPACTS AND MITIGATION MEASURES

Methodology

The following section provides a brief overview of the analytic methods used to assess the potential socioeconomic impacts of the Proposed Action and associated alternatives. These methods included qualitative assessments of potential impacts associated with employment, income, conflicts with county and local plans, population growth, displacement of persons and businesses, and community disruption. For the purpose of this assessment, Trinity County is considered to be the area of potential socioeconomic impact.

The generation of employment results in social benefits, even if the employment is short-lived. Implementation of the Proposed Action would generate new, temporary employment opportunities for Trinity County residents. Income generation is one measure of economic activity in a community. Income growth spurs secondary economic impacts that ultimately result in increased employment activities. The Proposed Action could directly generate income growth through the payment of wages and salaries. The duration of income growth, however, is an important consideration in determining the significance of an income change. Little increased long-term economic activity may result from short-term income growth unless such growth is substantial.

Significant increases in population concentration or growth can produce negative socioeconomic impacts, such as a lack of affordable housing, or can result in socioeconomic benefits, such as increased local revenues. The potential for the Proposed Action to result in an increase in population concentration or an increase in population growth has been qualitatively assessed.

The displacement of people (through loss of residences or places of employment) generally results in negative socioeconomic impacts, such as a decrease in the local work force and loss of employment opportunities, in addition to the direct impact to the people concerned. The potential of the Proposed Action to result in the displacement of people has been qualitatively assessed as a potential impact associated with the project.

Significance Criteria

For NEPA purposes, changes in employment and incomes rates are considered significant only if the change is equal to or greater than a minimum threshold of 10 percent. This is the minimum threshold at which there may be a regional impact. Other criteria used in the analysis and relevant under NEPA include:

- The project would result in the displacement of an existing business;
- The project would induce substantial growth or concentration of population; or

- The project would displace a large number of people.

For purposes of CEQA, under which “[e]conomic or social impacts of a project shall not be treated as significant impacts on the environment,” project impacts on population and housing are relevant only if they either (i) directly relate to an impact on the physical environment, in which case a lead agency may, but need not, consider economic or social impacts in determining whether such physical impacts are significant, or (ii) would result in a reasonably foreseeable indirect impact on the physical environment (See CEQA Guidelines, § 15131). Under CEQA, a proposed project would have a significant impact on population and housing if it

- induces substantial growth in an area, either directly or indirectly;
- displaces substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; and/or
- displaces substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Impacts and Mitigation Measures

Table 3.9-2 summarizes the potential socioeconomic impacts resulting from construction and operation of the project.

TABLE 3.9-2
 SUMMARY OF IMPACTS ON SOCIOECONOMICS FOR THE PROPOSED ACTION, ALTERNATIVE 1, AND ALTERNATIVE 2

No-Action Alternative	Proposed Action	Alternative 1	Alternative 2	Proposed Action with Mitigation	Alternative 1 with Mitigation	Alternative 2 with Mitigation
3.9-1 Construction of the project would provide temporary employment opportunities for construction workers in Trinity County.						
NI	B	B	B	B	B	B
3.9-2 Implementation of the project could result in the disruption or displacement of local businesses.						
NI	NI	NI	NI	N/A ¹	N/A ¹	N/A ¹
3.9-3 Implementation of the project would result in an increased demand for housing during construction.						
NI	LS	LS	LS	N/A ¹	N/A ¹	N/A ¹
3.9-4 Implementation of the project would result in concentrated population growth.						
NI	LS	LS	LS	N/A ¹	N/A ¹	N/A ¹

Notes:

LS = Less than Significant S = Significant SU = Significant Unavoidable
 NI = No Impact B = Beneficial N/A = Not Applicable

¹Because this potential impact is less than significant, no mitigation is required.

Impact 3.9-1: Construction of the project would provide temporary employment opportunities for construction workers in Trinity County. ***No Impact for No-Action Alternative; Beneficial Impact for Proposed Action, Alternative 1, and Alternative 2***

No-Action Alternative

Under the no-action alternative, no employment opportunities would be created because the project would not occur.

Proposed Action

Project implementation would generate temporary construction-related employment in Trinity County. The number of design, construction, and clerical positions required to complete the Proposed Action is undetermined, but it is expected to add a small percentage to existing local jobs. However, the duration of employment would be dependent on the length of the contracting and construction period (anticipated to be approximately 6 months). In addition, the Proposed Action would provide direct local employment opportunities only if workers are hired from the local labor force.

Alternative 1

Impacts associated with temporary employment opportunities under Alternative 1 would be similar to those of the Proposed Action.

Alternative 2

Impacts associated with temporary employment opportunities under Alternative 2 would be similar to or less than those of the Proposed Action.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: N/A.

Impact 3.9-2: Implementation of the project could result in the disruption or displacement of local businesses. ***No Impact for No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2***

No-Action Alternative

Under the No-Action Alternative, no disruption or displacement of local businesses would take place because the project would not occur.

Proposed Action

Two existing businesses are located within or directly adjacent to the project study area. However, local businesses in the vicinity of the rehabilitation site will not be disrupted or displaced by the project. Construction equipment and vehicle access will not impair access to these local businesses.

Alternative 1 and Alternative 2

Impacts associated with disruption or displacement of local businesses under Alternative 1 and Alternative 2 would be similar to those of the Proposed Action.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: N/A

Impact 3.9-3: Implementation of the project would result in an increased demand for housing during construction. *No Impact for No-Action Alternative; Less-than-Significant Impact for Proposed Action, Alternative 1, and Alternative 2*

No-Action Alternative

Under the No-Action Alternative, no increased demand for housing during construction would take place because the Proposed Action would not occur.

Proposed Action

The area surrounding the community of Douglas City is a rural residential area. Few rental opportunities exist within the Douglas City Community Plan area. What rental property does occur in adjacent rural residential areas is typically seasonal rental property available for recreational pursuits. More affordable and more readily available short-term rentals are concentrated in the nearby community of Weaverville. A short-term increase in the demand for housing in Weaverville could occur as a result of construction workers seeking lodging during the construction period. This would be a less-than-significant impact because of the short time during which the housing demand would potentially be increased.

Alternative 1 and Alternative 2

Temporary increases in the demand for housing during construction associated with Alternative 1 and Alternative 2 would be similar to those of the Proposed Action.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: N/A

Impact 3.9-4: Implementation of the project would result in concentrated population growth. *No Impact for No-Action Alternative; Less-than-Significant Impact for Proposed Action, Alternative 1, and Alternative 2*

No-Action Alternative

Under the No-Action Alternative, there would be no population increases during or after construction because the Proposed Action would not occur.

Proposed Action

Implementation of the Proposed Action would have a less-than-significant effect on the population numbers of any Trinity County community either during or after construction. Since the majority of workers employed by the project would be drawn from the local work force and because the work is anticipated to be completed in a relatively short period of time, there would be no concentrated population increases associated with the Proposed Action.

Alternative 1 and Alternative 2

Temporary increases in population concentrations associated with Alternative 1 and Alternative 2, particularly in the Douglas City and Weaverville communities, would be similar to those of the Proposed Action.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: N/A

3.10 Tribal Trust

The United States has a trust responsibility to protect and maintain rights reserved by, or granted to, federally recognized tribes and individual Indians by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations. The trust responsibility requires that all federal agencies, including Reclamation, take all actions reasonably necessary to protect Indian trust assets.

Indian trust assets are legal interests in property held in trust by the federal government for federally recognized Indian tribes or individual Indians. “Assets” are anything owned that has monetary value. “Legal interest” means there is a property interest for which there is a legal remedy, such as compensation or injunction if there is improper interference. Indian trust assets do not include things in which a tribe or individual Indians have no legal interest.

Indian trust assets can be real property, physical assets, or intangible property rights, such as a lease or a right to use something. Indian trust assets cannot be sold, leased, or otherwise alienated without the approval of the United States. While most Indian trust assets are located on-reservation, they can also be located off-reservation. Examples of things that can be Indian trust assets are land, minerals, hunting and fishing rights, water rights, and instream flows.

3.10.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

The need to restore and maintain the natural production of anadromous fish in the Trinity River mainstem originates partly from the federal government’s trust responsibility to protect the fishery resources of the region’s Indian tribes. The Trinity River Basin Fish and Wildlife Restoration Act of 1984 (Public Law 98-541) expressly acknowledges tribal interest in the basin’s fishery resources by declaring that the measure of successful restoration of the Trinity River fishery includes the “ability of dependent tribal...fisheries” to participate fully, through enhanced in-river “harvest opportunities, in the benefits of restoration.” In addition, the 1992 CVPIA specifically recognizes the federal trust responsibility in regard to the Trinity River fishery. The project could potentially affect anadromous fish, non-anadromous fish, water, wildlife, vegetation, and overall riverine health. These impacts could consequently affect the sociocultures and economies of tribes.

This section focuses principally on the interests of the Hoopa Valley and Yurok Tribes since, of the Indian tribes of the Klamath/Trinity Region, their interests could be the most directly affected by the project. It should be understood, however, that potential project impacts are pertinent to the Karuk and Klamath people as well, since they share a common regional heritage.

Regional Setting

The United States’ recognition of the importance of rivers and fish to the Indian people of the Klamath/Trinity Region is exemplified by the very shape and location of the lands first set aside for their reservations. The Secretary’s own instructions at the time were “to select these reservations from such ‘tracts of land adapted as to soil, climate, water privileges, and timber, to the comfortable and permanent accommodation of the Indians’” (U.S. Fish and Wildlife Service et al. 2000). In 1855, Indian Agent S.

Whipple, when speaking of the Yurok, noted that, “The river is abundantly supplied with Salmon. A fine large fish quite easily taken by the Indians and which is very properly regarded by the Indian as his staff of life” (U.S. Fish and Wildlife Service et al. 2000).

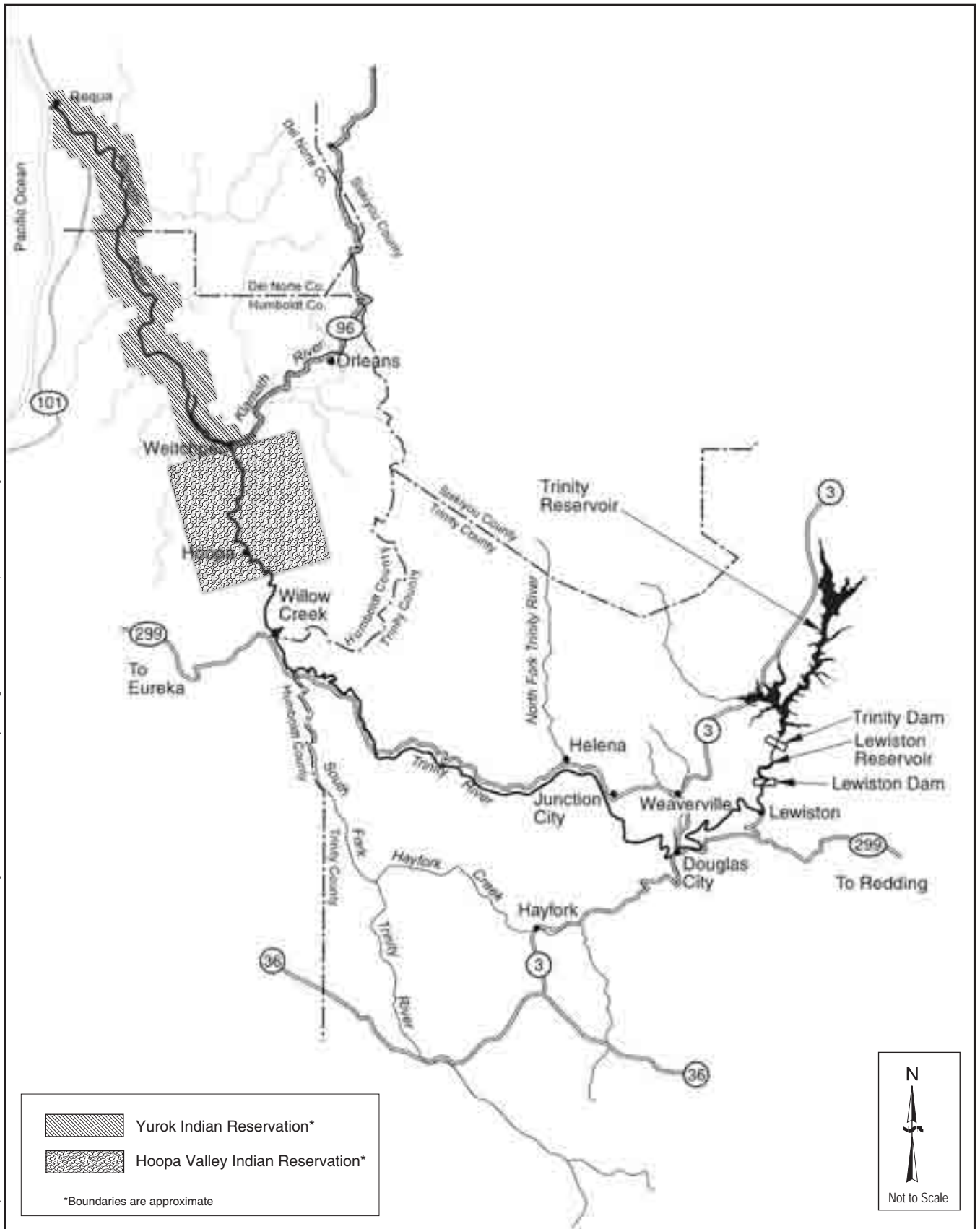
In that same year, President Pierce established the Klamath River Reservation. The reservation (not to be confused with the Klamath Reservation in Oregon) was designated as a strip of territory commencing at the Pacific Ocean and extending 1 mile in width on each side of the Klamath River for a distance of approximately 20 miles. This reservation was created entirely within the aboriginal territory of the Yurok. Although the federal government’s intent was to eventually move all the region’s Indians onto the Klamath River Reservation, only some Yurok and Tolowa were moved. Flooding along the Klamath River in 1862 led to the closing of the area’s Indian Bureau office and contributed to the erroneous belief that the reservation had been abandoned, though it was still occupied by the Yurok (U.S. Fish and Wildlife Service et al. 2000).

On August 21, 1864, the DOI issued a proclamation and instructions that established the Hoopa Valley Reservation on the Trinity River pursuant to legislation enacted by Congress that same year. The reservation is 12 miles square and bisected by 15 miles of the river (it has often been called the Square or the 12-mile Square). In 1876, President Grant issued an Executive Order formally establishing the boundaries of the Hoopa Valley Reservation, and provided that the land contained within those boundaries “be withdrawn from public sale, and set apart in California by act of Congress approved April 8, 1864” (U.S. Fish and Wildlife Service et al. 2000).

Efforts soon began to provide a single contiguous homeland for the region’s Indian people by connecting the Klamath River Reservation to the Hoopa Valley Reservation. Paris Folsom, a Special Agent for the DOI, proposed that the two reservations be connected in his “Report of Special Agent on Conditions and Needs of Non-Reservation Klamath Indians,” sent to the Commissioner of Indian Affairs in 1885.

In 1891, President Harrison extended the Hoopa Valley Reservation from the mouth of the Trinity River to the ocean, thereby encompassing and including the Hoopa Valley Reservation, the original Klamath River Reservation, and the connecting strip between. By that time, as a result of the Dawes Act of 1887, much of the Klamath River Reservation and extension lands (the 20-mile strip that connected the two reservations is commonly referred to as the “Connecting Strip” or “Extension”) not already claimed as allotments by resident Indians had been opened up to non-Indian settlement. This led to checkerboard ownership of the Yurok portions of both the Extension and former Klamath River Reservation. Through various means, several timber companies quickly consolidated and heavily logged much of this land.

From 1891 through 1988, the Hoopa Valley Reservation was composed of the Hoopa Valley Square, the Extension, and the original Klamath River Reservation. In 1988, Congress, under the Hoopa-Yurok Settlement Act, separated the Hoopa Valley Reservation into the present Yurok Reservation (a combination of the original Klamath River Reservation and Extension) and Hoopa Valley Reservation. Figure 3.10-1 shows the current reservation boundaries.



Indian Creek Rehabilitation Site: Trinity River Mile 93.7 to 96.5

Figure 3.10-1
Trinity Basin Indian Reservations

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Indian Federally Reserved Rights

By first creating reservations “for Indian purposes,” the United States sought to provide the Hoopa Valley and Yurok Tribes with the opportunity to remain mostly self-sufficient, exercise their rights as sovereigns, and maintain their traditional ways of life (U.S. Fish and Wildlife Service 2000). Implicit in this objective was an expectation that the federal government would protect the Tribes and their resources, a protection that extended beyond reservation borders.

The United States has a trust responsibility to protect tribal trust resources. In general, this tribal trust responsibility requires that the United States protect tribal fishing and water rights, which are held in trust for the benefit of the tribes (U.S. Department of the Interior 1995). This trust responsibility is one held by all federal agencies. For the project, Reclamation is obligated to ensure that project operations do not interfere with the tribes’ senior water rights. Pursuant to its trust responsibility and consistent with its other legal obligations, Reclamation must also prevent activities under its control that would adversely affect Tribal fishing rights, even when those activities take place off-reservation.

Federally Reserved Indian Fishing Rights

Salmon, steelhead, sturgeon, and lamprey that spawn in the Trinity River pass through the Hoopa Valley and Yurok Reservations and are harvested in tribal fisheries. The fishing traditions of these tribes stem from practices that far pre-date the arrival of non-Indians. Accordingly, when the federal government established what are today the Hoopa Valley and Yurok Indian Reservations on the Trinity and lower Klamath Rivers, it reserved for the benefit of the Indian tribes of those reservations a right to the fish resources in the rivers running through them. The Yurok and Hoopa Valley Tribes’ federally reserved fishing rights entitle them to take fish for ceremonial, subsistence, and commercial purposes. The United States has long recognized the rights of the Hoopa Valley and Yurok Tribes of the Klamath/Trinity River basin to fish. The federal government, as trustee, has an affirmative obligation to manage federally reserved Indian rights for the benefit of federally recognized Indian tribes. Federally reserved Indian fishing rights are vested property rights held in trust by the United States for the benefit of the Indians. These rights have been acknowledged and confirmed by the executive, legislative, and judiciary branches of the federal government in a number of authorities including: (1) Secretarial Issue Document on Trinity River Fishery Mitigation, issued January 14, 1981; (2) Opinion of the Solicitor of the DOI re: Fishing Rights of the Yurok and Hoopa Valley Tribes (M-36979: October 4, 1993); (3) the CVPIA (3406 (b) (23)); and (4) *Parravano v. Babbitt*, 837 F. Supp. 1034 (N.D. Calif. 1993), 861 F. Supp. 914 (N.D. Calif. 1994), affirmed 70 F.3d 539 (9th Cir. 1995), cert. denied, 518 U.S. 1016 (1996).

In most cases, federally reserved Indian fishing rights cannot be supplanted by state or federal regulation. The above-referenced 1993 Solicitor’s opinion: (1) reaffirms the historic and legal basis of the federally reserved fishing rights of the Hoopa Valley and Yurok Tribes; (2) acknowledges the federal government’s cognizance of the importance of fish to these Indians at the time it first established reservations on their behalf; (3) concludes that the tribes’ federally reserved fishing rights entitle them to harvest quantities of fish on their reservations sufficient to support a moderate standard of living, or 50 percent of the harvestable share of the Klamath-Trinity basin fishery, whichever is less; (4) recognizes that under the current depleted condition of the fishery, a 50 percent allocation does not adequately meet the tribes’ needs; and (5) argues that it was the degree of the Hoopa Valley and Yurok tribes’ dependence on

assets. A partial list of trust assets is presented in Table 3.10-1. While each tribe has its own uses for the species and resources listed, the table provides a general summary of what these uses are.

TABLE 3.10- 1 { TC "Table 3.10-1 Partial List of Klamath/Trinity Region Tribal Assets" \f B \l "1" }
PARTIAL LIST OF KLAMATH/TRINITY REGION TRIBAL ASSETS

Asset	Primary Uses by Tribes
<i>Aquatic Resources^a</i>	
Water	Subsistence, ceremonial, commercial, medicine
Fall Chinook salmon	Subsistence, ceremonial, commercial
Spring Chinook salmon	Subsistence, ceremonial, commercial
Summer steelhead	Subsistence, ceremonial, commercial
Fall steelhead	Subsistence, ceremonial, commercial
Winter steelhead	Subsistence, ceremonial, commercial
Coho salmon	Subsistence, ceremonial, commercial
Pacific lamprey	Subsistence, ceremonial, commercial
Sturgeon	Subsistence, ceremonial, commercial
Eulachon	Subsistence, ceremonial, commercial
<i>Terrestrial Resources</i>	
Willow shoots	Basketry, ceremonial
Cottonwood	Basketry
Wild grape	Basketry
Bulrush	Basketry
Hazel sticks	Basketry and weaving, ceremonial
Tules	Medicine
Spearmint	Medicine, subsistence
Blackberries	Subsistence
Bear	Subsistence
Bald eagle	Ceremonial
Blue heron	Ceremonial
Mallard	Ceremonial

^aWhile many of the fish listed are not currently commercially harvested by the tribes of the region, all these trust species were historically used for commercial purposes and the tribes continue to have the right of commercial harvest.

Cultural Environment

Native uses of natural resources and the cultural significance of those resources have developed over many centuries. Since time immemorial, native people have lived in the heavily forested drainages of the Klamath and Trinity rivers and adjacent streams in northwestern California. Over time, they learned to efficiently use the natural bounty of their territories; hunting, fishing, and gathering were the foundation of their societies. Tribes in the area included the Chilula, Hoopa Valley, Nongatl, Tsnungwe, and Whilkut, which spoke Athabascan languages; the Chimariko, Karuk, and Shasta, which spoke Hoka languages; the Wintun, which spoke a Penutian language; and the Wiyot and Yurok, which spoke Algonkian languages.

Some of these tribes, such as the Chilula, no longer exist. Others, including the Chimariko and Wintu, have not been officially recognized by the United States as a distinct and sovereign people. In fact, among the Indian peoples still present within the region, only the Hoopa Valley, Karuk, Klamath, and Yurok Tribes have received this recognition.

The aboriginal lands of the Hupa people are centered on the drainages of the Hoopa Valley of the Trinity River. The aboriginal lands of the Yurok were generally centered on the Klamath River drainage from the mouth of the river at the Pacific Ocean up to and including the Slate Creek drainage. Yurok ancestral territory also extends up the Trinity River to Tank Creek and includes the village of Oslegoits, 6 miles from the Trinity's confluence with the Klamath.

There have always been strong social, cultural, and economic ties among the tribes of the Klamath/Trinity basin, based in large part on a shared reliance on the region's rivers and associated resources, particularly salmon. This reliance extends well beyond subsistence and commerce to the cultural and social fabric of their societies, as evidenced by their traditional, ceremonial, and spiritual ways of life that focus and center on the rivers and the fish, wildlife, and vegetation they support. For Indians of the Klamath/Trinity Region, the interaction and identification with the natural environment defines their cultures, lifestyles, and religions; therefore, the degradation of the natural environment has had a profoundly devastating impact.

Local Setting

Based on consultation with the Tribes and Reclamation, the project site contains Trust assets, including fish, vegetation, and wildlife. Please refer to section 3.6 (Fishery Resources) and section 3.7 (Vegetation and Wildlife) for a discussion of these resources. While no specific use of the site by the Tribes has been identified, the Trinity River provides a valuable corridor that connects these resources to the Hoopa Valley and Yurok Tribes.

3.10.2 ENVIRONMENTAL CONSEQUENCES/IMPACTS AND MITIGATION MEASURES

The purpose of this section is to evaluate the potential impacts of the alternatives on tribal trust assets and the subsequent effects those impacts may have on the Indian tribes of the Klamath/Trinity basin.

Methodology

While the project is aimed at improving the river’s anadromous fisheries, an assessment of how project construction may actually affect the Indian trust assets of the Hoopa Valley and Yurok Tribes must be performed, as directed in the DOI Departmental Manual, Part 512, Chapter 2, and Reclamation’s Indian Trust Asset Policy. Toward this end, the Indian trust asset impact evaluation focuses on the potential effect of the project on the health of the Trinity River because the river’s overall health is a primary factor in determining the availability of fish and, therefore, the ability of the Hoopa Valley and Yurok Tribes to exercise their federally reserved fishing rights. Thus, increased numbers of Chinook salmon and Pacific lamprey, and the rejuvenation of other trust assets, represent an expected beneficial byproduct of improved riverine health. The potential tribal trust impacts are not evaluated on a trust asset by trust asset basis.

Significance Criteria

No specific significance criteria were applied in the evaluation of potential consequences on tribal trust assets, although any potential modification of, or change in, the quantity or quality of downstream tribal trust assets is evaluated. Notably, nothing in CEQA expressly requires lead agencies to consider projects’ impacts on tribal trust assets as a distinct category of impacts. Instead, with its focus on the physical environment, CEQA requires agencies to focus on impacts to specific natural or environmental resources, some of which, such as fish, wildlife, and water quality, might be indirectly related to tribal trust values.

Although CEQA does not expressly require the application of specific significance criteria for potential impacts to Indian trust assets, NEPA requires the evaluation of potential impacts to Indian trust assets as a distinct category. This evaluation assessed the impacts of the project from any modification or change in the value, use, quantity, quality, or enjoyment of downstream Indian trust assets.

Impacts and Mitigation Measures

Table 3.10-2 summarizes potential impacts on Indian trust assets that would result from implementation of the project.

TABLE 3.10- 2 { TC "Table 3.10-2 Summary of Tribal Trust Impacts" \f B \l "1" }
 SUMMARY OF TRIBAL TRUST IMPACTS FOR THE PROPOSED ACTION, NO-ACTION ALTERNATIVE, ALTERNATIVE 1, AND ALTERNATIVE 2

No-Action Alternative	Proposed Action	Alternative 1	Alternative 2	Proposed Action with Mitigation	Alternative 1 with Mitigation	Alternative 2 with Mitigation
3.10-1. Implementation of the project may reduce the quantity or quality of trust assets.						
NI	LS	LS	LS	N/A ¹	N/A ¹	N/A ¹

Notes:
 LS = Less than Significant S = Significant SU = Significant Unavoidable
 NI = No Impact B = Beneficial N/A = Not Applicable
¹Because this potential impact is less than significant, no mitigation is required.

fisheries at the time their reservations were first created or expanded, and not the tribes' specific uses of the fish, that is relevant in quantifying their federally reserved fishing rights.

Today, the reserved fishing right includes the right to harvest quantities of fish that the Indians require to maintain a moderate standard of living, unless limited by the 50 percent allocation. Specifically, the tribes have a right to harvest all trust species of Klamath and Trinity River fish for their subsistence, ceremonial, and commercial needs. Tribal harvest of these species is guided by conservation requirements outlined in carefully developed tribal harvest management plans.

Water Rights

In addition to fish, the tribes have reserved rights to water. The concept of reserved rights in general, and Indian reserved water rights specifically, originated just after the start of the 20th Century with *Winters v. United States*, 207 U.S. 564 (1908). The ruling in this case, commonly referred to as the Winters Doctrine, states that when the federal government established a reservation, it implicitly reserved a quantity of water necessary to fulfill the purposes of said reservation. Generally, all original documents related to the establishment of reservations—treaty, executive order, or statute—indicate, at a minimum, that the purpose of the reservations is to provide a permanent home for the tribe(s) in question. In cases where reservations have been created with specific language stating or implying reserved fishing, hunting, gathering, or other rights, the Winters Doctrine has been interpreted to mean that adequate water supplies for these purposes have been reserved (even in addition to more general uses; see *U.S. v. Adair*, 723 F.2d 1410 [9th Cir. 1983]).

The DOI Solicitor's office reaffirmed these rights with respect to Reclamation's activities, stating that "Reclamation is obligated to ensure that project operations not interfere with the Tribes' senior water rights. This is dictated by the doctrine of prior appropriations as well as Reclamation's trust responsibility to protect tribal trust resources" (U.S. Department of the Interior 1995). Furthermore, the Solicitor's office notes that the Secretary, "through Reclamation, must operate reclamation projects consistent with vested, fairly implied senior Indian water rights" (U.S. Department of Interior 1995). Further, absent a "completed adjudication or other determination of the senior water rights," projects must be "operated based on the best available information."

Rights to Wildlife and Vegetation Resources

While the focus of the legal history surrounding Indian rights to resources has concentrated on water and fisheries, it is important to recognize that other resources, such as wildlife and vegetation, are extremely important to the tribes, and the tribes have assessed that these are no less reserved. In the case of the Hoopa Valley and Yurok Tribes, the decline in the health of the region's rivers has limited the availability of grasses and other plants important to traditional basketry, art, and medicine. Thus, while anadromous fish are the focus of the TRRP, other trust assets such as vegetation are embodied in the federal government's trust responsibility and, accordingly, need to be considered in the decision-making process.

Potentially Affected Indian Trust Assets

Indian tribes of the Klamath/Trinity Region have firmly established federally protected rights to numerous natural resources. These general resource groupings represent culturally important Indian trust

Impact 3.10-1: Implementation of the project may reduce the quantity or quality of Indian trust assets.
No Impact for No-Action Alternative, Less-than-Significant Impact for Proposed Action, Alternative 1, and Alternative 2

No-Action Alternative

Under the No-Action Alternative, the project would not be implemented, and no impacts to a tribal trust asset would occur.

Proposed Action, Alternative 1, and Alternative 2

Under each alternative, the Trinity River would continue to support tribal trust assets. The short-term impacts described in Section 3.3 (Geology, Fluvial Geomorphology, and Soils); Section 3.5 (Water Quality); Section 3.6 (Fishery Resources); and Section 3.7 (Vegetation Wildlife and Wetlands) would occur if the project is implemented. These impacts are expected to be short-term and to be outweighed by the overall benefits to tribal trust assets through implementation of the TRRP. Therefore, this impact would be less than significant.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impact was identified for the alternatives, no mitigation is required.

Significance after Mitigation: N/A

3.11 Cultural Resources

This section describes the prehistory, ethnography, and history of the Trinity River region and summarizes the findings of a cultural resources records search and cultural resources report prepared by Reclamation. The information contained in this section provides a general context for understanding the importance, origin, and types of cultural resources that are located within and near the proposed Indian Creek rehabilitation site. Because neither the Proposed Action nor the alternatives would affect cultural resources outside of the Trinity River basin, the following discussion will address only those cultural resources associated with the Trinity River basin. Specific archaeological details of the Indian Creek project are discussed in a confidential report, Report 06-NCAP-023: Archaeological Investigation of the Indian Creek Channel Rehabilitation Project Area for the Trinity River Restoration Project, Trinity County, California (Lawrence et al. 2006).

3.11.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

Regional Ethnography

Five periods of prehistory have been described for California's northwest coastal region, which includes the Trinity River basin. These periods are the Paleo-Indian (10,000-6,000 B.C.), Lower Archaic (6,000-3,000 B.C.), Middle Archaic (3,000-1,000 B.C.), Upper Archaic (1,000 B.C.-A.D. 500), and Emergent (A.D. 500-1800). Periods are characterized by their "pattern," a term that refers to a culture's technology as revealed by the type and sophistication of its tools, such as stone or bone projectile points used for hunting, warfare, or fishing; stone metates and manos used to grind seeds; and mortars and pestles used to grind acorns.

At the time of Euro-American contact, the Chimariko, Hupa, Tsnungwe, Wintu, and Yurok Indian tribes inhabited the Trinity River region (to the Klamath River confluence) and the area near the present-day Trinity Lake. The Chimariko and Wintu are thought to have been the primary inhabitants of lands that now include the four Canyon Creek rehabilitation sites.

Chimariko

The Chimariko inhabited a 20-mile reach of the Trinity River extending from approximately Big Bar to the mainstem river's confluence with the South Fork Trinity River. The Chimariko lived in an area with abundant natural resources. The staples of their diet were salmon and acorns, but deer, elk, bear, pine nuts, seeds, berries, roots, and small mammals were also important food sources.

Little is known of the Chimariko social organization since their culture was destroyed at an early date. The information that remains indicates that the largest social unit was the village. Each village had a headman, which was a hereditary lifelong position passed through the male line. Status in Chimariko society was determined by wealth or a combination of wealth and birth. Only fragmentary data on Chimariko religion and myths exist. Although the Chimariko language no longer exists, it is thought to be of Hokan stock.

Hupa

The Hupa inhabited the lower reaches of the Trinity River in the region surrounding the river's confluence with the Klamath River. The Hupa relied heavily on salmon and acorns as food sources, but also used other fish, nuts, seeds, roots, deer, elk, rodents, and fowl.

As with many native groups of northwest California, the highest political entity was the village, but the Hupa had no formal chief or ruling council, and were instead ruled by individuals having prestige based on wealth. Wealth was defined in terms of the possession of nonsubsistence goods (usually imported items) gained by such means as trade, gambling, and indemnities. The Hupa excelled in woodworking and basket making (twined basketry).

The Hupas remained undisturbed until the 1850s, when the discovery of gold in the Trinity River basin attracted would-be miners into the area. In 1864, the Interior Department established the Hoopa Valley Reservation, centered near the confluence of the Trinity and Klamath rivers, followed by establishment of a boarding school in 1893. A business council was formed by the community in 1933, and that same year a public school was opened on the reservation. Today, the Hoopa Reservation is California's largest and most populous reservation. It is home to more than 2,000 members and maintains the largest accumulation of tribal funds in the state.

Wintu

At the time of Euro-American contact, most of the western side of the Sacramento Valley (north of Suisun Bay) was inhabited by Wintun-speaking people. Early in the anthropological study of the region, Powers (Powers 1976) had recognized a linguistic and cultural distinction between the southern membership of this large group (i.e., the Patwin) and the people occupying the northern half of the western valley. Subsequent linguistic analyses resulted in the present division of Wintuan into a southern (Patwin) group, a central (Nomlaki) group, and a northern (Wintu) Wintuan stock. Clearly, however, the central and northern Wintus are very closely related and share numerous cultural traits and attributes.

The Wintu were divided into nine subgroups distributed from Cottonwood Creek in the south, northward through Shasta County and into portions of Trinity and Siskiyou counties, and westward into portions of southern Trinity and northern Tehama counties. Within the general vicinity of the project boundary, the Wintu inhabited the area east of Junction City, including the area of what is now Trinity Lake.

Wintu subsistence was based on three main staples: deer, acorns, and salmon. All three of these food sources were abundant along the mainstem Trinity River and its primary tributaries, although acorns and deer were available only seasonally.

The available ethnographic information documents a complex pattern of land use, settlement, and subsistence. The salmon runs, the locations of seasonally available big game (especially deer), and the distribution of acorn-yielding oak trees made it necessary that the Wintu periodically travel far from their home territory. Although these extended forays were often arduous, they allowed the Wintu an opportunity to collect non-native raw materials, such as obsidian and other utilitarian materials that could not be obtained through trade.

The contemporary Wintu community is relatively small in terms of the number of individuals. Currently, there is only one federally recognized group of Northern Wintu, located on the Redding Rancheria, but at least four additional Northern Wintu groups dispersed throughout Shasta and Trinity counties are in various stages of seeking federal recognition.

Yurok

The Yurok inhabited California's northwestern coastline from Little River to Damnation Creek, although their ancestral territory included the Klamath River corridor from the estuary upstream to Slate Creek near present-day Trinity Lake. Food sources included salmon, ocean fish, sturgeon, sea lion, whale, elk, deer, and duck, with acorns, berries, bulbs, and grass seed rounding out the traditional diet.

Yurok life is defined by extended families affiliated with villages and represented by head spokespersons. Ceremonial wealth and rights to subsistence resource areas determine familial standing within Yurok social structure. Yurok are recognized for their highly stylized art forms and their skills in making redwood canoes, weaving fine baskets, hunting, and, especially, riverine salmon fishing. Many ancient traditions are continued through contemporary times.

Today, the Yurok Tribe is the largest Native American tribe in California, with nearly 5,000 enrolled members. The Yurok Reservation, which occupies 63,035 acres centered along the Klamath River corridor, is the size of many cities or counties, but does not have the tax base, gaming, or other business revenues available to create sustainable economic development on the Reservation. Poverty among the Yurok Tribe exceeds 80 percent.

History

Regional History

The area's first recorded European exploration occurred in 1845 when Major Pierson P. Reading discovered and named the Trinity River (the English translation of "Trinidad") when he mistakenly thought that the river emptied into the Pacific Ocean at Trinidad Bay. It is probable that fur traders like Jedediah Smith visited the region prior to 1845, although there is no written documentation available. Beginning in late 1849, the discovery of gold in the Trinity River drew large numbers of miners and settlers to the region. Boom towns quickly sprang up throughout the basin, with Weaverville and Trinity Center being among the largest. In fact, there were more people living in the Trinity area in the 1850s than have ever inhabited the area at any one time since. In 1853, it was estimated that close to 2,000 Chinese alone lived and worked in Weaverville. This boom, however, was relatively short lived.

By the 1860s, the placer, or more readily accessible surface gold, had been played out and the Chinese had moved on to work on the transcontinental railroad, which was being constructed across the Sierra Nevada. Mining continued in the area in the form of large-scale, corporate-funded underground and hydraulic mining operations, which continued into the 1930s. The world's largest placer mine of its time, the LaGrange Mine, located just upstream of Junction City, operated from 1862 to 1918. Many of the gravels found near Junction City came from the LaGrange Mine operations. Large-scale dragline and

bucket dredging operations were used along many stretches of the Trinity River and a number of its tributaries beginning in 1936, a practice that continued into the 1960s.

As the gold disappeared and the railroad came into the area, logging became a more important local industry than mining. Many communities in the region developed economies based on timber harvesting, although accelerated harvesting and economic growth in the timber industry did not come about until after World War II, when modernization and improved technologies occurred. From World War II until about 1994, the timber industry was considered the economic engine for the county.

Local History

Originally located across from Readings Bar, Douglas City (Kanaka Bar) was one of the first Euro-American settlements in Trinity County. Major Pierson B. Reading, who owned a ranch in the northern Sacramento Valley, made several expeditions into Trinity County beginning in 1845. After doing some gold prospecting in Shasta County, he began prospecting what is now called Readings Creek in 1848. He and a large crew worked the creek down to Readings Bar at its confluence with the Trinity River. After six weeks, they returned to Shasta County with approximately \$80,000 in gold. The news of his discovery triggered a rush to Trinity County between 1848 and 1850 (Jones 1981).

One of the early surveyors of the area was William S. Lowden, who purchased 160 acres along the Trinity River west of Lewiston in 1852. He became one of the most prominent settlers in the county as he not only maintained a productive ranch, but he also worked as an express rider, surveyor, land attorney, and a road builder. The Lowden family also pursued mining and logging activities and developed a stage stop and hotel. In 1855, he built a toll bridge across the river to connect existing pack trails and the first wagon road (Grass Valley or Buckhorn Road) into the county in 1858 (Jones 1981).

Following the discovery of gold near Reading's Creek in 1848, nearly every bar and flat on the Trinity River in the Douglas City vicinity saw considerable mining activity (Jones 1981). Various placer mining claims were established and mining continued off and on until the 1900s (Bradley 1941). State Mineralogist reports from around this time document the operation of the Union Hill Hydraulic Mine, operated by the Trinity River Hydraulic Mining Company and later the Trinity Consolidated Hydraulic Mining Company (Crawford 1896; Bradley 1941). The Union Hill Mine is prominent in the area of potential effect (APE) for the Proposed Action. The APE broadly defines the area where rehabilitation activities are planned and where cultural resources might be affected.

The Douglas City mining district, where Weaver, Indian, and Reading creeks empty into the Trinity River, was historically very productive (Clark 1970). Union Hill Mine represents two different phases of the gold mining industry: the early post-Gold Rush phase (1860s–1880s) and the later, more complex turn-of-the-century and early 1900s operations (Trinity County Historical Society 1974). Discovery of gold in Union Gulch led to the development of the Union Hill Mine. While the La Grange Mine near Junction City, California, was the largest hydraulic mine in Trinity County, the Union Hill Mine was more extensive and had a longer and more complex history that represents different phases of the gold mining industry (Ritter 1990).

Mining at Union Hill Mine began in 1862 and was discontinued in 1928. At its peak in the early 1900s, it was one of the largest hydraulic mines in the country (Jones 1981). The 1873 plat of the Union Hill Placer Mine, claimed by A. H. Marshall, J. C. Mason, C. W. Smith, and John D. Reed, shows some of the early mined land and the locations of the Reed and Smith houses, a water ditch, and a tunnel (Ritter 1990). Records seem to indicate that the mine paid well in the early stages. For the first 40 years, the Union Hill mine was worked with water from Little Brown's Creek, Weaver Creek, and the Davidson Ditch, which brought water from the lower end of Weaver Creek basin to the mine site (Nicol 1938). Tailings were originally dumped into Weaver Creek via Union Gulch. When the gulch and Weaver Creek filled up, a 900-foot tunnel was cut through the ridge in a southerly direction, dividing the mine pit from the Trinity River, and a 30-inch flume was installed (Jones 1981). Caving banks, flat bedrock, and the lack of an adequate grade for the sluices were consistent problems (Nicol 1938). The State Mineralogist's Report of 1896 notes that the Union Hill Hydraulic Mine Works, owned by Mason & Thayer of Douglas City, was shut down because of slides that filled the tunnel and cuts (Crawford 1896).

In 1900, Pete M. Paulsen acquired a significant number of the claims on Union Hill. In partnership with Mason and Thayer, the Frye Ditch was built to bring water from Grass Valley Creek, which became the main source of water for the Union Hill Mining Operations (Trinity County Historical Society 1964). The 15-mile-long ditch began about 1 mile above the present Oddfellows' Camp, ran out the ridge between Poker Bar development and McIntyre (Last Chance) Gulch, and dropped off this ridge, where water was carried across the Trinity River by means of an inverted siphon supported by a steel bridge. The siphon transported the water up the hill on the west side of the river and through a 6.5-foot-high by 4.5-foot-wide, 570-foot-long tunnel to the reservoir above the mine. The steel bridge (from which Steel Bridge Road derives its name) was a 165-foot steel span set on two concrete piers. It was wide enough to accommodate the 30-inch pipe and a wagon. The bridge remained standing until World War II, when it was dismantled for scrap (Goodyear 2006). The siphon itself was 5,000 feet long and dropped 300 feet in elevation (Jones 1981). By 1908, the tunnel was enlarged to accommodate a 5-foot flume that discharged 40 feet above the normal river level.

This second phase of mining had ample water, but Nicol (1938) suggests that its operators had a poor engineering policy or plan and inefficient management. There was also great loss of fine gold due to the methods of operation, which caused too much driving and re-driving with giants on flat bedrock with a grade in the tunnel sluices that was too flat overall (a drop of only 4 inches in 12 feet). Interest on bonds and overhead often produced a loss for the mining operation (Nicol 1938). There was no law requiring miners to properly record their output, and there are no known maps or records to show the actual volume worked (Nicol 1938).

The mine was continually operated until 1911, when it was taken over by Trinity Consolidated Mining Company, which was owned by T. R. Arbuckle (Goodyear 2006). Little mining was undertaken by this company. Apparently, when the mine was shut down after a few years of mining, various miners took leases and did some private mining on Union Hill property. Curt Bennett of Weaverville was one of those former employees who acquired a lease. He started work in the Union Hill area in 1906, where he worked 9 years for the company. After the mine shut down, he continued to lease for another 2 years,

taking the Tarply brothers as partners. This lease was followed by another lease that lasted 1 year, this time with Steve Spratt. Curt Bennett worked the ridge between Union Hill and the Trinity River, dumping toward the river on the north side of the slope. Ultimately, too much overburden created unprofitable conditions and caused him to give up the lease (Trinity County Historical Society 1964).

In 1921, Arbuckle leased the Union Hill Mine in total and operated it until 1928. Slides covering the pipes and giants were again a primary problem faced by the operation. Caving of soft top banks was observed in 1908, 1909, and 1915 by John M. Nicol, a consulting mining engineer from San Francisco (Nicol 1938). Operations were forced to close due to declining profits that did not allow for maintenance (Jones 1981). The tunnel collapsed after mining operations ceased, subsequently forming Union Hill Pond (Jones 1981). The tunnel outlet is now barely visible from Highway 299 about 0.3 miles east of Douglas City opposite the lower end of Texas Bar (Bill Vitzthum field) (Ritter 1990).

Following closure of the mine, a number of properties that had closed down due to unprofitable operating conditions, including the Union Hill Mine, were acquired as part of different mining ventures. Subsequently, they were consolidated into single ownership by a foreclosure sale and were left idle (Nicol 1938). Nicol was commissioned to review the feasibility of reopening several mining locations in Trinity County (1938). His report (1938) noted that the Union Hill siphon (a 5/16-inch riveted plate pipe) appeared to be in excellent shape, although the steel bridge was in need of some repair; however, mining was never resumed.

Today, the primary remaining evidence of the mine is the extensive landscape modifications, including a large hydraulic pit, tailings, roads, and ditches (Ritter 1990). The hydraulic pit is a large horse-shoe shaped depression that has completely re-vegetated. Within the depression is the Union Hill Pond, created by the collapse of the tunnel, and a forest of trees. The two roads on the west and east sides of the mining pit still exist, though they are in various states of disrepair due to erosion and vegetative growth resulting from a lack of consistent use. A survey by Ritter (1990) on the immediate rim revealed remains of the siphon and water works, camps, remnant ditches, and dump sites associated with the Union Hill Mine.

The most significant mining in the area after the closure of the Union Hill Mine occurred in the late 1930s and early 1940s, when all of the creek and river bottom land, including much previously worked over ground, was turned up by dragline floating washing plant operations (Jones 1981, Nicol 1938). Around 1939 the Viking Dredging Company, under the same management as Interstate Mines, Inc., operated a dragline dredge in T32N R20W, Section 12, at the confluence of Reading Creek and Trinity River near Douglas City (Bradley 1941). The Weaver Dredging Company also operated two dragline dredges on terraces of both Weaver Creek and the Trinity River in Section 1 of T32N R10W and Section 6 of T32N R9W (Bradley 1941). This operation obliterated any remnant features of placer and hydraulic mining operations adjacent to the Trinity River and Weaver Creek floodplains.

Major floods, particularly the flood of 1955, greatly altered the dredger tailings that had accumulated between 1936 and 1948. Flood waters during 1955 were high enough to inundate SR 299 and Douglas City. With the exception of the highest portions of the dredger tailings, the entire river channel was inundated and altered. The 1955 flood and other floods have cut and displaced large portions of the

tailings piles, changing their original configuration. Sections of tailings that were along SR 299 have been completely removed.

World War II curtailed mining activity, and large-scale mining operations were shut down permanently. Much of the usable infrastructure needed for mining operations was removed, including the steel bridge and metal siphon, and used as scrap to support the war effort. Today, numerous small placer mines still operate on an intermittent basis in the vicinity of Douglas City.

As a result of a prior timber sale project in the Indian Creek area, the BLM has previously consulted with the State Historic Preservation Officer (SHPO) regarding the Union Hill Mine. The SHPO concluded that the Union Hill Mine site is eligible for the National Register as a historic district (Craig 1992). Therefore, Reclamation assumes that additional mining related sites outside the APE, but adjacent to the Union Hill Mine complex, are eligible for inclusion in the National Register.

Present Environment

Regional Setting

The Trinity River basin remains a culturally significant area for several Native American tribes, including the Hupa, Wintu, Yurok, and descendants of the now extinct Chimariko. Not only do these tribes have ties to this region that pre-date written history, but some modern-day tribal members try to continue many of the traditional uses of the area's natural resources, such as salmon fishing. However, retaining a culture in the wake of dam construction that was traditionally and inextricably tied to the pre-dam river ecology has resulted in conditions that are less than ideal for the continuation of some traditional practices. Changes to native land use practices brought about by the dam, current land uses, and increased population densities define a totally different kind of interaction by the native people with their environment.

A long history of flooding, fire, and vandalism have taken their toll on many potentially historically significant resources in the region. Few commercial mining operations remain, and most current mining is recreational. A decline in the timber industry resulting primarily from changes in human values has had a significant effect on the regional economy. Mill closures and fewer logging-related jobs have created a generally depressed economy in the region. However, some communities such as Weaverville have turned to their historic downtowns and rich mining history to develop a new economic base built on tourism.

Local Setting

Area of Potential Effect

A Programmatic Agreement (PA) was developed in consultation with the SHPO and the Advisory Council on Historic Preservation (ACHP) regarding implementation of the Trinity River Mainstem Fishery Restoration ROD (U.S. Fish and Wildlife Service et al. 2000). The programmatic APE is delineated in the PA for compliance with the National Historic Preservation Act (NHPA). By design, the programmatic APE is general in nature and encompasses a larger area than the project area boundary.

The project APE encompasses the limits of the Proposed Action and alternatives for the Indian Creek site, including the area needed for access and staging of equipment (Lawrence et al. 2006).

Archaeological and Historical Information Sources

A records search for the Trinity River-wide APE was conducted in support of this EA/DEIR, and an additional records search was conducted for the general project area using the Northeast Center of the California Historical Resources Information System at Chico State University. This record search indicated that the BLM (Ritter 1992) conducted an inventory northeast of the Indian Creek Rehabilitation Site area and recorded a series of historical features associated with the Union Hill Mine. In addition to the large open pit created by the Union Hill Mine, Ritter recorded an additional seven sites that are also associated with the mine. Reclamation also visited the Trinity County Historical Society and interviewed Mr. Hal Goodyear, who is a long-time resident and is knowledgeable about the area and its history.

Native American Consultation

The Hoopa Valley Tribe (HVT) is a signatory of the aforementioned PA and was an active participant in preparation of the Trinity River Restoration Mainstem Fishery Restoration EIS/EIR. The HVT is a strong supporter of the TRRP and is a member of the Trinity Management Council, which provides guidance for TRRP staff. The HVT was notified of the Indian Creek Rehabilitation Project pursuant to the 36 CFR Part 800 regulations. The Native American Heritage Commission previously identified two federally recognized tribes and four non-federally recognized Indian groups as possibly having cultural resource information applicable to the Indian Creek Rehabilitation Project area and its vicinity. Letters of inquiry were sent to these tribes and non-federally recognized groups to determine the presence of cultural resources within the APE pursuant to 36 CFR Part 800.4(a)(3) and (4). To date, Reclamation has received no response from these inquiries.

Field Inventory and Evaluation

Two Reclamation archaeologists conducted a total of four site survey visits to the Indian Creek Rehabilitation Project site (March 29 and 31, and April 17 and 19, 2006). Each of the activity areas within the APE was surveyed during these visits (Figure 3.11-1). A systematic inventory of the APE was made using transects separated by 15 to 30 meters. Seven cultural resources were recorded during these surveys and have been documented in the archaeological specialist's report (Lawrence et al. 2006)

Determinations of Eligibility for Inclusion in the National Register

Historic resources constitute the only identified cultural resources detected during field work. There were no prehistoric archeological sites identified. Determinations of eligibility for listing on the National Register of Historic Places (NRHP) of each of the identified historic resources within the APE are currently being developed in consultation with BLM, which is the principal land owner at the project site, and the PA requires such consultation. It is anticipated that only two historic sites in the APE (06-TRRP-01 and 06-TRRP-06) will be determined to be eligible for inclusion on the NRHP; these sites are likely to be eligible because they appear to be related to the adjacent Union Hill Mine complex. The

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig_3.11-1_APE.mxd Source: NSR, Inc.; USBR; USGS 07-12-06 bmoore



 Area of Potential Effects

Note: Numbered areas represent specific activity areas defined in Chapter 2.



1:13,200



Aerial photography:
July 2005

Figure 3.11-1
Area of Potential Effects Evaluated
for the Indian Creek Rehabilitation Site

project has been designed to maintain the integrity of these sites. The remaining dredger tailings, ditches, and other mining features appear to be ineligible for inclusion on the NRHP, but a final determination will be made pending input from BLM. Final determinations of eligibility will be presented in the EA/Final EIR.

3.11.2 REGULATORY SETTING

Federal

Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA (1966, amended 2000) requires federal agencies to evaluate the effects of federal undertakings on historic properties that are included on or eligible for inclusion on the NRHP (16 U.S.C. 470f and 36 CFR 800). The agencies are required to identify historic properties within a project's APE and evaluate whether the proposed action would affect a historic property or properties impacts. If the project would have an adverse effect on historic properties (36 CFR 800), the agency is required to consult with the SHPO and the ACHP, Indian tribes, and interested parties to develop alternatives or mitigation measures that would allow the project to proceed.

State

Office of Historic Preservation and California Environmental Quality Act

California Register of Historical Resources

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to California Public Resources Code Section 21084.1, a "project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on "unique archaeological resources."

"Historical resource" is a term of art with a defined statutory meaning (see California Public Resources Code, Section 21084.1; CEQA Guidelines Section 15064.5, subs. (a), (b)). The term embraces any resource listed on or determined to be eligible for listing on the California Register of Historical Resources (CRHR). The CRHR includes resources listed on or formally determined to be eligible for listing on the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing on the CRHR and are presumed to be "historical resources" for purposes of CEQA, unless a preponderance of the evidence indicates otherwise (California Public Resources Code, Section 5024.1; California Code of Regulations, tit. 14, Section 4850). Unless a resource listed in a survey has been demolished or has lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources that could be affected by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historical resources (California Public Resources Code, Section 21084.1; CEQA Guidelines, Section 15064.5, subd. (a)(3)). In general, a historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

- a) Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
- b) meets any of the following criteria:
 1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 2. Is associated with the lives of persons important in our past;
 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 4. Has yielded, or may be likely to yield, information important in prehistory or history. (CEQA Guidelines, Section 15064.5, subd. (a)(3)).

Additionally, California Public Resources Code Section 5024 requires consultation with the Office of Historic Preservation (OHP) when a project may affect historical resources located on state-owned land.

As noted above, CEQA also requires lead agencies to consider whether projects will affect "unique archaeological resources." California Public Resources Code Section 21083.2, subdivision (g), states that "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person" (California Public Resources Code, Section 21083.2, subd. [g]).

Local

Trinity County General Plan Goals and Objectives

The Trinity County General Plan contains goals and policies designed to guide the future physical development of the county, based on current conditions (Trinity County 2001). The General Plan contains all the state-required elements, including community development and design, transportation, natural resources, health and safety, noise, housing, recreation, economic development, public facilities

and services, and air quality. In its Land Use Element, Trinity County outlines a system of historic designations intended to categorize historic buildings and natural landmarks that have been identified within the county. Categorization of these historic resources is useful for determining which structures merit submission to the NRHP to determine eligibility for listing.

The following goals and policies relevant to cultural resource issues associated with the Proposed Action, particularly those linked with Native American cultures, were taken from the applicable elements of the General Plan (Trinity County 2001), including the Douglas City Community Plan (Trinity County 1987).

Douglas City Community Plan Goals and Objectives

The Douglas City Community Plan covers approximately 35 square miles (22,400 acres) centered on the Trinity River from Grass Valley Creek to an area known as Steiner Flat, downstream of Douglas City.

Goal: To encourage the preservation of historical structures within the Plan Area.

- Encourage Federal and State land managers to retain existing historical buildings, or as a last resort, provide for relocation of such structures located on State or Federal lands.

Project Consistency with the Trinity County General Plan and Community Plans

The objectives of the Proposed Action are consistent with the applicable general plan goals and policies summarized above. Implementation of the Proposed Action, or alternatives to the Proposed Action, will not result in the demolition or relocation of historic structures.

3.11.3 ENVIRONMENTAL CONSEQUENCES/IMPACTS AND MITIGATION MEASURES

An APE for the cultural resource inventory and evaluation was established by Reclamation in accordance with the rehabilitation activities proposed within the project boundary. The field survey and inventory for the project performed by Reclamation archaeologists between March and April 2006 was intended to identify and subsequently evaluate any cultural resources eligible for listing as a historic property by the NRHP. Within the APE identified for the Indian Creek Rehabilitation Project, one site (06-TRRP-01) is likely to be eligible for inclusion in the National Register due to its association with the Union Hill Mine complex. Site 06-TRRP-06 will also likely be determined to be eligible; however, this site will not be affected by actions that will take place within the APE.

Significance Criteria/Determination of Effect

The activities associated with rehabilitation of the Indian Creek site were evaluated to determine how they might affect cultural resources. Impacts on cultural resources are considered significant if implementation of the proposed project would potentially disturb unique cultural resources or properties on or eligible for the NRHP.

For historical resources, the lead agencies have reviewed both the federal NHPA and CEQA in order to determine thresholds of significance. As noted above, CEQA provides that a project may cause a significant environmental effect if the project “may cause a substantial adverse change in the significance

of an historical resource” (Public Resources Code, Section 21084.1 (emphasis added)). CEQA Guidelines Section 15064.5 defines a “substantial adverse change in the significance of an historical resource to mean “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines, Section 15064.5, subd. (b)(1) (emphasis added)).

CEQA Guidelines Section 15064.5, subdivision (b)(2), defines “materially impaired” (for purposes of the definition of “substantial adverse change . . .”) as follows:

The significance of an historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA. (CEQA Guidelines, Section 15064.5, subd. (b)(2))

With these definitions in mind, the lead agencies considered impacts on historical resources eligible for the NRHP or CRHR to be significant if the Proposed Action, or alternatives to the Proposed Action, would alter their eligibility for the NRHP or CRHR by:

- Physically destroying or materially altering the characteristics of the historical resource that convey its historical significance and justify its eligibility for listing on the NRHP or CRHR;
- Introducing visual, audible, or atmospheric elements out of character with the historical resource and its setting in such a way as to demolish or materially alter the characteristics that convey its historical significance and justify its eligibility for listing on the NRHP or CRHR;
- Causing the historical resource to be subject to neglect to such a degree that the characteristics that convey its historical significance and justify its eligibility for listing on the NRHP or CRHR will be materially impaired; or
- Resulting in the historical resource being transferred, leased, or sold, with the probability that the characteristics that convey its historical significance and justify its eligibility for listing on the NRHP or CRHR will be materially impaired.

In addition, based on CEQA Guidelines Section 15064.5 and Appendix G of the CEQA Guidelines, the Proposed Action and the alternatives would have significant effects if they would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation Measures

Table 3.11-1 summarizes the potential cultural resource impacts resulting from construction and operation of the project.

TABLE 3.11-1 { TC "Table 3.11-1 Summary of Cultural Resources Impacts" \f B \l "1" }
Summary of Cultural Resources Impacts for the No-Action Alternative, the Proposed Action, Alternative 1, and Alternative 2

No-Action Alternative	Proposed Action	Alternative 1	Alternative 2	Proposed Action with Mitigation	Alternative 1 with Mitigation	Alternative 2 with Mitigation
Impact 3.11-1: Implementation of the proposed project could cause a substantial adverse change in the significance of a known cultural resource.						
NI	PS	PS	PS	LS	LS	LS
Impact 3.11-2: Implementation of the proposed project could potentially result in disturbance of undiscovered prehistoric or historic resources.						
NI	PS	PS	PS	LS	LS	LS

Notes: NI = No Impact PS = Potentially Significant LS = Less than Significant

Impact 3.11-1. Implementation of the proposed project could cause a substantial adverse change in the significance of a known cultural resource. *No Impact for No-Action Alternative; Potentially Significant Impact for Proposed Action, Alternative 1, and Alternative 2*

No-Action Alternative

Under the No-Action Alternative, there would be no adverse changes to potentially significant cultural resources because the Proposed Action would not occur.

Proposed Action, Alternative 1, and Alternative 2. As previously discussed under “Local Setting,” the project boundary was surveyed for the presence of cultural resources that would be eligible for listing in the NRHP. Based on the results of the surveys, two sites associated with the Union Hill Mine were recorded (Union Hill Terraces [06-TRRP-01] and a Conveyance Ditch [06-TRRP-06], and are therefore considered eligible for inclusion in the NRHP as contributing components to the Union Hill Mine complex. Placement of spoils piles near and within the Union Hill Terrace Mine historical site (06-

TRRP-01) could result in significant impacts to sites eligible for inclusion in the National Register of Historic Places. Site 06-TRRP-06 will not be affected by actions that will take place within the APE.

Mitigation Measures

Proposed Action, Alternative 1, and Alternative 2

1a: Plans for spoiling excavated materials have been altered to place materials outside of the areas of the Union Hill Mine Terrace that contain distinct features that define the historic site. To ensure cultural resource protection, these sensitive areas within the Union Hill Mine Terrace will be flagged for avoidance by a Reclamation archaeologist prior to construction. Construction workers will be informed of the flagging and its purpose.

Significance After Mitigation: Less than Significant.

Impact 3.11-2 Implementation of the proposed project could potentially result in disturbance of undiscovered prehistoric or historic resources. ***No Impact for No-Action Alternative; Potentially Significant Impact for Proposed Action, Alternative 1, and Alternative 2***

No-Action Alternative

Under the No-Action Alternative, there would be no disturbance to potentially significant cultural resources because the Proposed Action would not occur.

Proposed Action, Alternative 1, and Alternative 2

As previously discussed under “Local Setting,” the APE was surveyed for the presence of cultural resources that would be eligible for listing on the NRHP. Based on the results of this survey, two sites associated with the Union Hill Mine were recorded (Union Hill Terraces [06-TRRP-01] and a Conveyance Ditch [06-TRRP-06]), and are therefore considered eligible for inclusion on the NRHP as contributing components to the Union Hill Mine complex.

Although unlikely considering the existing level of disturbance, buried archaeological resources that have not been previously recorded may be uncovered during construction. Due to the proximity to the Trinity River, unrecorded prehistoric cultural resources associated with habitation by Native Americans may be present. Ground-disturbing activities associated with construction could disrupt or adversely affect unknown subsurface archaeological resources. This would be a potentially significant impact.

Similar to the Proposed Action, construction activities associated with Alternative 1 and Alternative 2 could have the same effect on previously unrecorded archaeological and historical resources. Ground-disturbing activities associated with construction could disrupt or adversely affect unknown subsurface archaeological resources. Any such impacts produced by Alternative 1 or Alternative 2 would be a potentially significant impact.

Mitigation Measures

Proposed Action, Alternative 1, and Alternative 2

2a: Prior to initiation of construction or ground-disturbing activities, all construction workers shall be alerted to the possibility of buried cultural remains. This would include prehistoric and/or historic resources. Personnel shall be instructed that upon discovery of buried cultural materials, work within 50 feet of the find shall be halted and Reclamation's designated archaeologist consulted. Once the find has been identified, Reclamation will make the necessary plans for treatment of the finds(s) and for the evaluation and mitigation of impacts if the find(s) are found to be significant as defined in the PA.

2b: If buried human remains are encountered on non-federal lands during construction, work in that area must be halted, and the Trinity County Coroner's Office shall be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by Public Resources Code, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains. For the discovery of Native American human remains and associated items on Federal lands, the Native American Graves Protection Act (25 U.S.C. 3001) and its implementing regulations (43 CFR Part 10) will be followed.

If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation shall be made available. Work may continue on other parts of the proposed project while mitigation for historical or unique archaeological resources takes place.

Significance After Mitigation: Less than Significant.

3.12 Air Quality

This section evaluates the air quality impacts associated with implementation of the Proposed Action. Air emissions from construction are measured against standards provided by the North Coast Unified Air Quality Management District (NCUAQMD).

3.12.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

Regional Setting

Climate and Topography

According to the Soil Survey of Trinity County, California, Weaverville area (U.S. Department of Agriculture 1998), Trinity County has a climate characterized by hot, dry summers and moderate winters. Trinity County typically has an average summer high temperature of 93.9 ° Fahrenheit (F), an average winter low temperature of 28.8 °F, and an average annual snowfall of 15.8 inches (Center for Economic Development 2004). The Trinity Alps have elevations in excess of 9,000 feet and an essentially alpine climate. The average annual precipitation for Trinity County ranges from 30 inches in the lower elevations to 70 inches in the higher elevations. Most precipitation results from major storms from the Pacific Ocean; however, a few short thunderstorms during summer occur during most years.

Table 3.12-1 provides a summary of average weather parameters recorded at the Trinity River Hatchery Weather Station in Lewiston, California, which is approximately 16 river miles upstream of the project boundary.

TABLE 3.12-1
CLIMATOLOGICAL DATA FOR TRINITY COUNTY (1974–2005){ TC "Table 3.12-1
Climatological Data For Trinity County (1974–2005)" \f B \l "1" }

Weather Parameter	Measurement
Average annual temperature	54.8 °F
Average high temperature in January	48.1 °F
Average low temperature in January	32.1 °F
Average high temperature in July	92.3 °F
Average low temperature in July	52.4 °F
Highest recorded temperature	113 °F
Lowest recorded temperature	4°F
Average annual precipitation	32.37 inches
Average days of precipitation per year	90 days
Average annual snowfall	17.8 inches
Highest recorded annual snowfall	86.5 inches

Source: Western Regional Climate Center 2005

Within Trinity County, the local airflow is strongly controlled by deeply dissected mountains. The higher mountain ridges receive precipitation as snow and hold most of it until late spring. The lower elevations are dominated by rainfall, with occasional snow during most winters. Dense morning fog typically occurs in the valleys of the Trinity River basin during the winter and occasionally throughout the rest of the year.

Air Quality Management

The North Coast Air Basin (NCAB) comprises five counties in northwest California: Del Norte, Humboldt, Trinity, Mendocino, and a portion of Sonoma County. Figure 3.12-1 illustrates the NCAB in relation to all air basins in California. The North Coast Unified Air Quality Management District (NCUAQMD) is responsible for monitoring and reporting air quality for three of these counties, Humboldt, Del Norte, and Trinity counties. The NCUAQMD is located in the far northwestern portion of California and encompasses approximately 7,134 square miles. The NCUAQMD is bordered on the west by the Pacific Ocean and extends from the Oregon border south, approximately 140 miles to the Mendocino County line.

Air quality in Trinity County is influenced by a number of factors, including stationary sources such as residential wood heating, non-stationary sources such as motor vehicle exhaust, forest management (prescribed fire), and the meteorology of a given area. The NCUAQMD has defined the following general source categories for air pollution:

- Industrial: Sawmills, power plants, gravel plants, other heavy industry
- Commercial: Gas stations, body shops, restaurants, dry cleaners, etc.
- Residential: Home heating, backyard burning, paint and solvent use, etc.
- Mobile: Cars, planes, trains, and other transportation sources
- Agricultural: Forest management burning, field burning, herbicide use, etc. (North Coast Unified Air Quality Management District 1998)

Federal Requirements

The 1977 federal Clean Air Act (CAA) requires the EPA to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for the following “criteria”¹ air pollutants: ozone (O₃); carbon monoxide (CO); nitrogen dioxide (NO₂); sulfur dioxide (SO₂); suspended particulate matter (PM₁₀ and PM_{2.5}); and lead (Pb).

Pursuant to the 1990 CAA amendments, the EPA has classified air basins (or portions thereof) as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. All three counties of the NCUAQMD are currently designated as attainment for all federal standard criteria pollutants.

¹Termed “criteria” pollutants because EPA publishes criteria documents to justify the choice of standards.

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State Requirements

The California Air Resources Control Board (CARB), California’s state air quality management agency, regulates mobile source emissions and oversees the activities of County Air Pollution Control Districts and regional Air Quality Management Districts. The CARB regulates local air quality indirectly by establishing state ambient air quality standards and vehicle emission standards.

California has adopted ambient standards that are more stringent than the federal standards for the criteria air pollutants. These standards are referred to as the California Ambient Air Quality Standards (CAAQS). Table 3.12-2 summarizes federal and state ambient standards for criteria air pollutants.

TABLE 3.12-2
 FEDERAL AND STATE CRITERIA POLLUTANT AMBIENT AIR QUALITY STANDARDS{ TC "Table 3.12-2
 Federal and State Criteria Pollutant Ambient Air Quality Standards" \f
 B \l "1" }

Pollutant	Averaging Time	Federal Standard	State Standard
Ozone	1-hour	0.12 ppm	0.09 ppm
	8-hour	0.18 ppm	--
Carbon monoxide	8-hour	9 ppm	9 ppm
	1-hour	35 ppm	20 ppm
Nitrogen dioxide	Annual arithmetic mean	0.053 ppm	--
	1-hour	--	0.25 ppm
Sulfur dioxide	Annual arithmetic mean	0.030 ppm	--
	24-hour	0.14 ppm	0.04 ppm
	3-hour	--	--
	1-hour	--	0.25 ppm
Fine particulate matter (PM2.5)	24-hour	65 µg/m ³	65 µg/m ³
	Annual arithmetic mean	15 µg/m ³	12 µg/m ³
Respirable particulate matter (PM10)	24-hour	150 µg/m ³	50 µg/m ³
	Annual arithmetic mean	50 µg/m ³	20 µg/m ³
Lead	30-day average	--	1.5 µg/m ³
	Calendar quarter	1.5 µg/m ³	--

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter
 Source: California Air Resources Board 2005

Under the California Clean Air Act (CCAA), which is patterned after the federal CAA, areas within California have been designated as attainment or non-attainment with respect to the state ambient air quality standards. All three counties of the NCUAQMD are currently designated as non-attainment for the state standard for particulate matter less than 10 microns in aerodynamic diameter (PM10) and as attainment for the federal standard. The state standard for PM10 is 50 µg/m³ (micrograms per cubic meter) as a maximum 24-hour average and 30 µg/m³ as an annual average of the 24-hour values. The federal standard for PM10 is 150 µg/m³ as a maximum 24-hour average and 50 µg/m³ as the annual average of the 24-hour values (North Coast Unified Air Quality Management District 1995). A non-attainment designation means that the particulate concentrations in these counties exceed the levels set by California to protect public health.

PM10 monitoring results show that the three largest cities within the NCUAQMD (Crescent City, Eureka, and Weaverville) have had exceedances of the 24-hour standard for PM10. The largest contributors to PM10 are fugitive road dust, residential fuel combustion, industrial wood and paper mills, and forest management burning (North Coast Unified Air Quality Management District 1995).

PM10 sampling showed that woodstove emissions during the winter months, when added to the already occurring PM10 levels, are the primary cause of high PM10 values in the NCUAQMD. PM10 sampling in Weaverville alone showed that woodstove emissions contributed approximately 55 percent of PM10 measured at an average of samples over 50 µg/m³ (24-hour state standard) during high PM10 episodes, and approximately 30 percent of PM10 measured at an average for all samples collected over a year (North Coast Unified Air Quality Management District 1995). These samples were collected at the Weaverville Courthouse, which is approximately 5 miles north of the project boundary.

As part of its overall strategy to meet the state’s health-based standard for PM10, the NCUAQMD adopted a PM10 Attainment Plan (North Coast Unified Air Quality Management District 1995). Included in the plan are measures to reduce PM10 emissions from mobile sources, as well as from woodstoves and other combustion sources. The program funds reductions in nitrogen oxide (NO_x) emissions, PM10, and toxic compounds contained in diesel exhaust.

Local Requirements

The NCUAQMD has established air quality emission thresholds for stationary sources in the entire North Coast Air Basin, which can be used to assess impacts to air quality in Trinity County. Air quality emission significance thresholds (the potential of a new or modified stationary source to emit air contaminants that would equal or exceed significant emission rates in tons per year) for stationary sources are presented in Table 3.12-3.

TABLE 3.12-3
 AIR QUALITY EMISSION SIGNIFICANCE THRESHOLDS{ TC "Table 3.12-3 Air Quality Emission Significance Thresholds" \f B \l "1" }:
 NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

Air Contaminant	Significant Emission Rate (tons per year)
Carbon monoxide	100
Nitrogen oxides	40
Sulfur dioxide	40
Particulate matter	25
PM10	16
Ozone	40 (as volatile organic compounds [VOC])
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Mercury	0.1

TABLE 3.12-3
 AIR QUALITY EMISSION SIGNIFICANCE THRESHOLDS{ TC "Table
 3.12-3 Air Quality Emission Significance
 Thresholds" \f B \l "1" } : NORTH COAST UNIFIED AIR QUALITY
 MANAGEMENT DISTRICT

Air Contaminant	Significant Emission Rate (tons per year)
Vinyl chloride	1
Fluorides	3
Sulfuric acid mist	7
Hydrogen sulfide (H ₂ S)	10
Total reduced sulfur (including H ₂ S)	10
Reduced sulfur compounds (including H ₂ S)	10

Source: North Coast Unified Air Quality Management District 2005

North Coast Unified Air Quality Management District

The NCUAQMD establishes policies, regulations, and permit procedures for Humboldt, Del Norte, and Trinity counties. The following district air quality control rules applicable to the Proposed Action were taken from Air Quality Rules and Regulations (North Coast Unified Air Quality Management District 2005).

Rule 104 (3.0) - Particulate Matter

- 3a. General Combustion Sources: A person shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.46 grams per standard cubic meter (0.20 grams per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide (CO₂); or in excess of the limitations of New Source Performance Standards applicable to provisions set out in Rule 104(11.0).

Rule 104 (4.0) - Fugitive Dust Emissions

- 4.1 No person shall do or allow handling, transporting, or open storage of materials in such a manner which allows or may allow unnecessary amounts of particulate matter to become airborne.
- 4.2. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, the following provisions:
 - 4.2.1 Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
 - 4.2.2 Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Containment methods can be employed during sandblasting and other similar operations.
 - 4.2.4 The use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
 - 4.2.5 The application of asphalt, oil, water or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.

- 4.2.7 The prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

Trinity County General Plan Goals and Objectives

The Trinity County General Plan contains goals and policies designed to guide the future physical development of the county, based on current conditions. The General Plan contains all the state-required elements, including community development and design, transportation, natural resources, health and safety, noise, housing, recreation, economic development, public facilities and services. The General Plan contains a Safety Element which addresses air quality issues.

The following goals and policies related to air quality issues associated with the Proposed Action were taken from the applicable elements of the General Plan (Trinity County 2001), including the Douglas City Community Plan (Trinity County 1987).

County-Wide Goals and Objectives

Safety Element

The following goals, objectives, and policies were excerpted from the Safety Element and are applicable to the project.

Air Quality Goal

- Continue to maintain a high standard of air quality in Trinity County
- Ensure burning projects will not diminish air quality
- The burning of any material shall comply with burning permits, conditions and/or standards established by the NCUAQMD.

The General Plan does not identify specific goals, objectives, or policies for air quality associated with vehicular emissions and rehabilitation projects.

Douglas City Community Plan Goals and Objectives

The Douglas City Community Plan covers approximately 35 square miles (22,400 acres) centered on the Trinity River from Grass Valley Creek to an area known as Steiner Flat, downstream of Douglas City. The Douglas City Community Plan does not contain any goals or objectives specific to air quality issues.

Project Consistency with the Trinity County General Plan and Douglas City Community Plan

This section compares the goals and objectives of the project to the relevant local planning policies (i.e., Trinity County General Plan, Douglas City Community Plan) to determine if there are any inconsistencies.

The goals and objectives described in Chapter 1 are generally compatible with the applicable General Plan goals and policies for air quality summarized above. The overall goal of the Proposed Action is to rehabilitate the site so that it functions in a manner that is closer to historic conditions (i.e., pre-Lewiston Dam). Although excavation of alluvial materials along the Trinity River would result in temporary, short-

term emissions of fugitive dust and PM₁₀, the Proposed Action will include mitigation measures intended to reduce airborne dust and construction vehicle emissions generated during project implementation.

Existing Air Quality Conditions

The CARB publishes summaries of air quality monitoring data from locations throughout the state. In addition, the CARB maintains air quality monitoring sites for PM₁₀ in Weaverville. The CARB regional air quality monitoring network provides information on ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations reflect the number and strength of emissions sources and the influence of topographical and meteorological factors. The nearest monitoring station to the project is located at the Trinity County Courthouse, 101 Court Street in Weaverville (Weaverville basin), which is approximately 5 miles north of the project boundary. Pollutant concentrations measured at this station may not be generally representative of background air pollutant concentrations in the general vicinity of the Proposed Action because of the influence the Trinity River corridor exerts on local air quality in association with local weather conditions.

Particulate Matter

Suspended or respirable particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods of time. PM₁₀ consists of particulate matter 10 microns² or less in diameter, which can be inhaled and may cause adverse health impacts. Particulate matter in the atmosphere results from a variety of dust- and fume-producing industrial and agricultural operations, combustion, and atmospheric photochemical reactions. Some of these operations, such as construction activities (i.e., excavation and disposal of alluvial materials), primarily contribute to increases in local PM₁₀ concentrations, while others, such as vehicle traffic, have an impact on regional PM₁₀ concentrations.

EPA has promulgated new standards for particulate matter less than 2.5 microns in diameter, or PM_{2.5}. PM₁₀ includes all particles that are 10 microns or less in diameter; therefore, PM_{2.5} is a subset of PM₁₀. Typically, 30 to 80 percent of all PM₁₀ is in the PM_{2.5} range.

Table 3.12-4 shows PM₁₀ concentrations in Weaverville over a 10-year period. All PM₁₀ concentrations are expressed in micrograms per cubic meter. The state standard for PM₁₀ is 50 µg/m³ as a maximum 24-hour average, and the federal standard for PM₁₀ is 150 µg/m³ as a maximum 24-hour average. In 1999, it was calculated that PM₁₀ concentrations (24-hour average) exceeded the state standards for more than 30 days. This relatively high PM₁₀ level was attributed to an unusually large number of wildland fires in the vicinity of the Weaverville basin during the late summer months.

² A micron is one one-millionth of a meter.

TABLE 3.12-4
 PM10 MONITORING DATA FOR WEAVERVILLE (1995-2004) { TC "Table 3.12-4 PM10 monitoring data for Weaverville (1995-2004)" \f B \l "1" }

Criteria	Year	Estimated Days Over National Standard	Estimated Days Over State Standard	High 24-Hour Average	
				National	State
24-Hour Average	2004	--	--	42.5	42.5
	2003	--	--	56.5	53.9
	2002	--	--	52.3	52.5
	2001	0.0	--	72.6	72.0
	2000	0.0	18.8	50.8	51.1
	1999	0.0	24.3	99.6	94.9
	1998	0.0	18.1	46.2	46.5
	1997	0.0	17.8	54.0	54.0
	1996	0.0	--	72.0	63.0
	1995	0.0	--	41.0	--

Source: California Air Resources Board 2002 <http://www.arb.ca.gov/adam/welcome.html>

3.12.2 ENVIRONMENTAL CONSEQUENCES/IMPACTS AND MITIGATION

Methodology

Data for the impacts analysis were taken from the following reports on local and regional air quality: Particulate Matter Attainment Plan (North Coast Unified Air Quality Management District 1995), Summary of Air Monitoring Data in the North Coast Unified Air Quality Management District (North Coast Unified Air Quality Management District 1997), North Coast Air Quality Facts (North Coast Unified Air Quality Management District 1992), Air Quality Rules and Regulations (North Coast Unified Air Quality Management District 2005), and the Trinity County General Plan (Trinity County 2001). The air quality analysis is qualitative, and was conducted by assessing anticipated construction-related impacts of the project and comparing them to existing and anticipated future air quality conditions. Because the Proposed Action would generate very little traffic, quantitative data on traffic were not compiled (see Section 3.18, Traffic and Circulation), and specific information on local construction activities was not available. The results are compared to local and national ambient air quality emissions and concentrations standards to determine the significance of the impacts.

Significance Criteria

According to Appendix G of the CEQA Guidelines, a project will normally have an adverse impact on air quality if it would

- violate any ambient air quality standard;
- contribute substantially to an existing or projected air quality violation;
- conflict with or obstruct implementation of any applicable air quality plan;

- result in a cumulatively considerable net increase of any criteria pollutant (e.g., PM10) for which the region is in non-attainment under an applicable state ambient air quality standard;
- expose sensitive receptors to substantial pollutant concentrations;
- result in substantial air emissions or deterioration of air quality;
- create objectionable odors;
- alter air movement, moisture, or temperature, or result in any change in climate, either locally or regionally; or
- produce toxic air contaminant emissions that exceed the air pollution control district’s threshold level for health risk.

Since the first two criteria include violation of either federal or state air quality standards, these criteria will also be used to determine significance for NEPA compliance.

The NCUAQMD has not formally adopted a CEQA threshold of significance for compounds such as CO, NO_x, PM10, and SO₂, but does use the significant emission rates listed in Table 3.12-3 as a baseline when evaluating a project’s potential impacts to air quality (Torzynski, pers. comm. 2004).

Impacts and Mitigation Measures

Table 3.12-5 summarizes the potential air quality impacts resulting from implementation of the project.

TABLE 3.12-5
 SUMMARY OF AIR QUALITY IMPACTS FOR THE NO-ACTION ALTERNATIVE, PROPOSED ACTION, AND ALTERNATIVE 1 { TC "Table 3.12-5 Summary of Air Quality Impacts" }

No-Action Alternative	Proposed Action	Alternative 1	Alternative 1	Proposed Action with Mitigation	Alternative 1 with Mitigation	Alternative 1 with Mitigation
3.12-1. Construction activities associated with the project could result in an increase in fugitive dust and associated particulate matter (PM₁₀ and PM_{2.5}) levels.						
NI	S	S	S	LS	LS	LS
3.12-2. Construction activities associated with the project could result in an increase in construction vehicle exhaust emissions.						
NI	S	S	S	LS	LS	LS
3.12-3. Construction activities associated with the project and removal of vegetation could result in vegetative materials that managers will decide to burn.						
NI	S	S	S	LS	LS	LS

Notes:
 NI = No Impact LS = Less than Significant S = Significant

The potential for impacts on air quality from implementation of the project is discussed below.

Impact 3.12-1: Construction activities associated with the project could result in an increase in fugitive dust and associated particulate matter (PM10 and PM2.5) levels. *No Impact for the No-Action Alternative; Significant Impact for the Proposed Action, Alternative 1, and Alternative 2*

No-Action Alternative

Under the No-Action Alternative, there would be no construction-related increase in fugitive dust and associated particulate matter levels because the project would not be constructed.

Proposed Action, Alternative 1, and Alternative 2

Construction associated with the Proposed Action, Alternative 1, and Alternative 2 would require the use of equipment that would temporarily contribute to air pollution within the Trinity River basin. Construction excavation and grading are sources of fugitive dust emissions (PM10) that could have a temporary impact on local air quality. Dust emissions would primarily be associated with removal of vegetation, excavation and disposal of earthen materials, and equipment travel on unpaved road surfaces.

As discussed previously, the project is located within the NCAB, where PM10 levels are in non-attainment. The generation of fugitive dust during construction would be considered a temporary and short-term significant impact at a local level due to the non-attainment status. To the extent possible, revegetation would be coordinated with construction so that the amount of bare ground is limited. Revegetation would not commence until plants are dormant and fall wet conditions have returned.

Generation of fugitive dust and particulate matter levels associated with construction of the Proposed Action would be less than under Alternative 1 because this alternative would not include implementation of the proposed road access to the north of the activity areas and would therefore involve less earthwork. Generation of fugitive dust and particulate matter levels associated with construction of Alternative 2 would be less than under the Proposed Action and Alternative 1 because this alternative would not include implementation of activity areas R-1, U-1, and U-2, staging area C-2, and the access road proposed to extend between Union Hill Road and the activity areas on the north side of the Trinity River. To the extent possible, revegetation will be coordinated with construction so that the amount of bare ground is limited. Revegetation would not commence until plants are dormant and fall wet conditions have returned. Short-term impacts associated with the generation of fugitive dust during construction would be considered a significant impact.

Mitigation Measures

No-Action Alternative

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: N/A.

Proposed Action, Alternative 1, and Alternative 2

- 1a. Reclamation shall include provisions in the construction bid documents specifying that the contractor shall implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program may include, but will not be limited, to the following elements, as appropriate:
 - Inactive construction areas will be watered as needed to ensure dust control.
 - Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site shall be covered or shall maintain

adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer).

- Excavation activities and other soil-disturbing activities shall be conducted in phases to reduce the amount of bare soil exposed at any one time. Mulching with weed-free materials may be used to minimize soil erosion, as described in Section 3.3, Geology, Fluvial Geomorphology, and Soils, and Section 3.5, Water Quality.
- Watering with either equipment and/or manually shall be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust.
- All paved access roads, parking areas, and staging areas shall be swept (with water sweepers), as required by Reclamation.
- Roads shall be swept (with water sweepers) if visible soil material is carried onto adjacent public roads, as required by Reclamation.
- All ground-disturbing activities with the potential to generate dust shall be suspended when winds exceed 20 miles per hour, as directed by the NCUAQMD.
- Reclamation or its contractor shall designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints.

Significance after Mitigation: Less than Significant.

Impact 3.12-2: Construction activities associated with the project could result in an increase in construction vehicle exhaust emissions. *No Impact for the No-Action Alternative; Significant Impact for the Proposed Action, Alternative 1, and Alternative 2*

No-Action Alternative

Under the No-Action Alternative, there would be no increase in construction vehicle exhaust emissions because the project would not be constructed.

Proposed Action, Alternative 1, and Alternative 2

Construction associated with the project would require the use of equipment that would temporarily contribute to air pollution in the Trinity River basin. Exhaust emissions from heavy equipment during construction may contribute to air pollution. Project construction activities would generate emissions from diesel- and gasoline-powered equipment and vehicles. Diesel particulate is an identified Hazardous Air Pollutant (HAP) and Toxic Air Contaminant (TAC), emissions of which should be minimized. In this regard, the length of the construction will require the contractor to comply with NCUAQMD Rule 104 (3.0) Particulate Matter or use portable internal combustion engines registered and certified under the state portable equipment regulation.

Construction vehicle exhaust emissions associated with the Proposed Action would be slightly less than under Alternative 1 because there would be no construction of the access road to the north of the activity areas and therefore slightly less construction work involved. Whereas construction vehicle exhaust emissions associated with Alternative 2 would be slightly less than under the Proposed Action and

Alternative 1, because this alternative would exclude activity areas R-1, U-1, and U-2, staging area C-2, and the access road proposed to extend between Union Hill Road and the activity areas on the north side of the Trinity River. The Proposed Action, Alternative 1, and Alternative 2 would have a significant impact on air quality even though there would be slightly fewer hours of construction equipment operation associated with Alternative 2 and the Proposed Action.

Mitigation Measures

No-Action Alternative

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: *N/A.*

Proposed Action, Alternative 1, and Alternative 2

- 2a: Reclamation shall include provisions in the construction bid documents specifying that the contractors shall comply with NCUAQMD Rule 104 (3.0) Particulate Matter. This compliance could occur through the use of portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).

Significance after Mitigation: *Less than Significant.*

Impact 3.12-3: Construction activities associated with the project and removal of vegetation could result in vegetative materials that managers will decide to burn. ***No Impact for the No-Action Alternative; Significant Impact for the Proposed Action, Alternative 1, and Alternative 2***

No-Action Alternative

Under the No-Action Alternative, there would be no vegetative materials that would need to be burned because the project would not be constructed.

Proposed Action, Alternative 1, and Alternative 2

Construction of the project would remove vegetation from the construction areas which may be buried, piled to create wildlife habitat, chipped, or burned. Piling and burning is a quick and economical way to eliminate flammable biomass and reduce concentrations of wildland fuels. Piles would be conserved until after construction and prepared/burned by a local contractor or the BLM during wet weather conditions. Burning of material in the fall/winter period (November-April) will also eliminate effects to nesting birds. In the event that piles are burned, smoke would temporarily contribute to air pollution in the Trinity River basin.

Smoke associated with the Proposed Action would be less than under Alternative 1 because there would be no construction of the access road to the north of the activity areas and therefore less vegetation cleared and possibly burned. Smoke associated with Alternative 2 would be less than under the Proposed Action and Alternative 1 because this alternative would exclude activity areas R-1, U-1 and U-2, staging area C-2, and the access road proposed to extend between Union Hill Road and the activity areas on the north side of the Trinity River. A reduction in vegetation removal could result in a reduction in burning activities; however, smoke associated with construction of each of the action alternatives would still be considered significant.

Mitigation Measures

No-Action Alternative

Since no significant impact was identified, no mitigation is required.

Significance after Mitigation: *N/A.*

Proposed Action, Alternative 1, and Alternative 2

- 3a: Piles will consist only of dried vegetative materials. Burn piles will be no larger than 10 feet in diameter. Field personnel will be on site during all hours of burning and materials necessary to extinguish fires will be available at all times.
- 3b: In general, all requirements of a NCUAQMD “NON-Standard” burn permit will be met for burning. Burn management planning may include but not be limited to:
- Ensure that burning occurs only on approved burn days as defined by the NCUAQMD (determined via calling 1-866-BURN-DAY)
 - Burning will only occur during suitable conditions to ensure control of ignited fires. For instance: Water to wet the litter and duff layer and penetrate the mineral soil layer to 1/4 inch or more will be present, wind speeds will be low (< 10 mph), and temperature will be low (< 80o F)
 - Piles may be covered with a 5-foot x 5-foot sheet of 4-mil polyethylene plastic to promote drying of the slash. At least 3/4 of each pile surface would be covered and the plastic anchored to preserve a dry ignition point. Dry fuel conditions will minimize smoke emissions.
 - Slash piles would not be constructed on logs, stumps, on talus slopes, within 25 feet of wildlife trees with nest structures, in roadways or in drainage ditches. Piles will not be placed within 10 feet of trees intended to be saved (reserved trees), or within 25 feet of a unit boundary.
- 3c: Notification of the public and the NCUAQMD will occur each day. Depending on wind direction and proximity to roads, signs or personnel will notify residents and traffic on nearby access routes.

Significance after Mitigation: *Less than Significant.*