

CHAPTER SIX

GROWTH INDUCEMENT

In accordance with the CEQA Guidelines §15126.2, this section of the EIR discusses ways in which the Project "could foster economic and population growth or construction of additional housing, either directly or indirectly" in the region. The focus of the analysis shall be on the physical changes (§15131). The following discussion therefore, focuses on the environmental effects that might reasonably be anticipated to occur as a result of the "economic and population growth" that could be induced by the proposed Project.

NEPA considers growth inducement to be an indirect effect of a proposed action and thereby requires that indirect effects are caused by the action but "occur later in time or are farther removed in distance but are reasonably foreseeable." Indirect effects may include changes in the pattern of land use, population density, or growth rate.¹ As an example, if construction of a "building would require that public services be extended to an undeveloped area, then the effects of the resulting growth would" be considered indirect.

"Although the CEQ NEPA Regulations draw a distinction between direct and indirect effects, legally both must be considered equally in determining significance. In practice, the distinction between a reasonably foreseeable effect and a remote and speculative effect is more important than the question of whether an impact is considered direct or indirect."²

Growth from the Project can be projected and characterized from three perspectives:

- Business Park Growth- the approximate 4.4 million square feet of business park uses and the jobs that would directly result from occupancy of the building space, as well as the secondary jobs associated with the business park jobs. The jobs may increase housing demand within the region.
- Growth Based on Infrastructure Capacity – The potential growth that would be served by the Project's proposed infrastructure improvements (new roads, widening of existing roads, wastewater plant and collection system, electrical substations and transmission lines, and the water supply system) which are being proposed to serve the entire Project Area.
- Growth Inducement in the region and in particular the southeastern area of the City of Redding and abutting Shasta County lands.

The growth resulting from the Project is described for each of these three perspectives under their respective sections.

6.1 BUSINESS PARK GROWTH

Alternative 1 proposes 4,410,000 million square feet of building space, whereas Alternatives 2 and 3 each propose 4,323,600 square feet. For the Professional Office (High Tech Clusters) and Light and General Industrial uses, the Institute of Traffic Engineers (ITE) *Trip Generation (Sixth Edition)* was utilized to determine employee densities. The Professional Office use has a density of between 250 to 275 square feet per employee, whereas the Industrial uses have a density range of 450 to 500 square feet per employee. However, approximately 1,555,000 square feet of potential distribution/warehousing uses are proposed which the ITE manual does not provide an employee

¹ 40 C.F.R. 1508(b)

² Pages 54 and 55. Bass, Herson, Bogdan. 2001. *The NEPA BOOK, A step-by-step guide on how to comply with the National Environmental Policy Act*

density. Review of various potential distribution/warehouses that have expressed interest to locate in the City of Redding revealed ranges from 1,750 to 4,200 square feet per employee. However, a third potential user for which Rieger & Associates prepared an economic evaluation determined that 2,500 square feet per employee is an appropriate density. Therefore, Alternative 1 would generate approximately 7,000 employees. For the purposes of describing growth represented by the proposed Project, an estimate of 7,000 employees will be used for this discussion.

The proposed business park uses typically represent "primary industry" and employment, consisting of manufacturing of goods and providing services that bring revenue into the region. Primary industry and employment also results in the creation of "secondary" or service related employment. Examples of secondary employment include the retail sector, such as grocery stores, clothing stores, auto fuel and maintenance establishments, as well as many other services such as entertainment, government, and professional services like medical and dental. Ratios of primary to secondary employment range between 1:1.5 and 1:2 (primary to secondary jobs) for the various business park sectors.³ Utilizing these ratios, an additional 10,500 to 14,000 secondary jobs could be created because of the Project, if the Project attracted out of the area employees. However, this is not a realistic projection based on experiences to date and *The Shasta County Workforce Report* prepared for the Private Industry Council in October 2003. Many of the statistics quoted in this chapter regarding the work force are derived from this report.

Whereas, it is not possible to accurately project the extent or location of the secondary growth resulting from the Project, it is assumed that the primary growth will occur in the City of Redding and the balance in Shasta County. The secondary jobs are included in the urban mix that comprises the existing and planned uses in the City's General Plan incorporated herein by reference.

The direct employment growth proposed by the project, and the associated secondary job growth and housing demand, represent a portion of the job and housing growth that is planned for the City of Redding and the region.

Table 6-1 illustrates that by the year 2020 Shasta County, including the incorporated Cities of Anderson and Shasta Lake will require approximately 90,450 residential units to accommodate a projected population of 227,900 persons. The City of Redding will require 45,950 units of the total 90,450 units to accommodate a population of 113,500.

TABLE 6-1					
POPULATION GROWTH AND HOUSING NEED					
Jurisdiction	2000 Population	2000 Housing Units	2020 Population	2020 Housing Units	Needed Housing Units
City of Redding	81,200	33,800	113,500	45,950	12,150
Shasta County	94,450	35,900	114,400	44,500	8,600
Total	175,650	69,700	227,900	90,450	20,750

According to the 2000 Census the estimated total civilian labor force in Shasta County was approximately 73,300 people, an increase of 7,500 persons from the 65,800 reported in the 1990 Census. In 2004, the labor force estimate is 83,100 persons. Projections are that the labor force will grow at a rate of approximately two percent per year between 2000 and 2020. Therefore, in 2020, the labor force will be approximately 109,000. This size labor force will require approximately 43,250 residential housing units. Based on year 2004 EDD estimated, City of Redding residents comprise about 48 percent of the labor force, or 39,900 persons. The number will increase to 50,400 persons

³ Gary Olson. May 2003. Minnesota Economic Development Report

in 2020. The City labor force will require an approximate 29,650 residential housing units, or 64.5 percent of the total City housing stock. On the other hand, Shasta County will require 34,500 housing units for its' labor force, or 77.5 percent of its project housing stock. **Table 6-2** provides an overview of the labor market growth and housing needs.

Cumulatively, the entire region will require 64,150 housing units to accommodate a projected labor work force of 109,000 persons. The projected housing stock for the entire County is 90,450 of which the labor force will utilize 70.1 percent.

TABLE 6-2					
CIVILIAN LABOR MARKET GROWTH AND HOUSING NEED					
Jurisdiction	2000 Labor Market	2000 Housing Units	2020 Labor Market	2020 Housing Units	Needed Housing Units
City of Redding	39,900	23,500	50,400	29,650	6,150
Shasta County	33,400	19,600	58,600	34,500	14,900
Total	73,300	43,100	109,000	64,150	21,050

The above information provides a brief analysis to determine the number of housing units that will be needed in the foreseeable future based on the projected growth in the labor market, regardless of whether the Project is developed or not.

6.1.1 HOUSING DEMAND, POPULATION, EMPLOYMENT, AND INFRASTRUCTURE GROWTH

One of the potential growth inducing effects of the Project could be a demand for additional housing. The 2000 census identifies that there are 1.22 employed persons per household in Shasta County. Based on 1.22 employed residents per household, the Project demand for housing units to serve 7,000 employees would be approximately 5,700 households. The California Department of Finance 2004 statistics for Redding assumes 2.48 persons per household, therefore, the potential 5,700 households could result in a population increase of approximately 14,100 persons.

Regardless of which Alternative site is selected, the Proposed Action has the potential to generate 7,000 employees and up to an additional 14,000 secondary jobs. Conclusions could be made that the creation of up to 21,000 new jobs would create a demand for 17,100 new homes, whose 42,480 residents would directly and indirectly impact the housing market, services, and facilities, in particularly schools. However, such a conclusion is erroneous due to several factors.

The first is that the City of Redding General Plan accommodated the projected growth resulting from the development of the Proposed Action when it designated lands, including portions of the alternative sites as "General Industrial." Secondly, there is enough land designated for residential development that can easily accommodate additional population growth regardless of whether it is from within the area or from outside the region. Third, infrastructure throughout the City of Redding has been master planned to accommodate future development and infrastructure to serve the Project will not induce growth. Lastly, it is highly unlikely that the business park will attract a significant amount of out of the area employees based on past and current trends. However, there is sufficient amount of residential land available to accommodate the influx without having to convert other land uses to residential use.

6.1.1.1 General Plan Accommodation

The 2000 Census identified a City population of approximately 80,865 persons (32,191 households), whereas, the County population is 175,651. Year 2020 projections show a City of Redding population of 113,500 and a County population of 227,922. The difference is 32,300 and 52,270, respectively. The City's growth rate reflects a 1.8 percent increase over 20 years, whereas, the County growth rate is slightly less. One could argue that both the City and County can readily accommodate the resultant growth from the Project. This is supported by the fact that the City of Redding's General Plan has designated 1,992 General Industrial designated lands of which 1,186 are currently vacant.⁴ The 390-acres the Proposed Action encompasses on any of the Alternative sites is easily accommodated by the amount of land already identified as being industrially designated in the City General Plan.

The General Plan considered the level of development being advanced by the Proposed Action. Included within the 1,186-acres of vacant lands is the original 460-acre Stillwater Site. Based on initial evaluations the 316-acres was identified as being suitable for development with the balance of 144 acres as open space, which included avoided wetland complexes. Based on FAR of 0.40, which the General Plan allows, approximately 5,500,000 square feet of industrial uses could be developed. This exceeds the Preferred Action Alternative 2 by 1,177,000 square feet and Alternatives 1 and 3 by 1,100,000 square feet.

The Proposed Action identifies the development of up to 390-acres to be able to accommodate between 4,323,000 and 4,410,000 business park square footage. Recognizing that the 220-acres was insufficient, the approximate 318-acre Redding Municipal Airport parcel immediately to the south, which was designated for Park use, was evaluated to determine if the parcel could accommodate the additional acreage required. After evaluations, approximately 163-acres of the land would easily lend itself for development purposes with minimal environmental constraints. Therefore, approximately 218-acres on the east side of Stillwater Creek, of which 163-acres could be developed was added to the initial 220-acres to create 383-acres of potentially developable land. The balance of the 55-acres will be designated as Open Space.

The total 383-acres, even though it is located within 698-acres is less acreage than originally designated for industrial development in the General Plan. Essentially, the 1,992 acres of designated industrial lands in the General Plan has been reduced by 260-acres. However, if one adds the 218-acres of Redding Municipal Airport land (of which 163-acres is proposed for development in Alternatives 1 and 2), the effective industrial designated acreage is increased to 1,950-acres. Other acreages have been, or are proposed to be removed from the inventory of available industrial lands. One site is approximately 89-acres north of Knighton Road, west of Airport Road which was converted to Public Facility (to accommodate the proposed Veterans Home) and single family residential land uses. Another 80-acres is currently being proposed for conversion from industrial use to single family residences on a portion of the Alternative 3 site.

6.1.1.2 Residential Designated Lands

As noted in **Tables 6-1** and **6-2**, the number of housing units necessary to accommodate the general and labor force population projections for the year 2020 is sufficient to accommodate the potential number of employees the business park could generate. However, the question arises on whether the housing is being constructed or not.

⁴ The City of Redding General Plan designates 1,366 acres for Heavy Industrial of which 380 acres are vacant, however, the Proposed Action does not identify heavy industrial land use for development on any of the Alternative sites.

In the City of Redding, as of January 2004, approximately 1,630 residential units have been built since 2000. As of July 2004, estimates indicate that there are approximately 1,325 single-family lots and 850 multi-family residential units that have been approved and not yet constructed. In addition, there are approximately 1,700 single family and multi-family residential lots and units that are currently being processed for approval. Therefore, 3,865 residential housing units could be possibly available to accommodate a portion of the 5,700 households that could have employment in the business park.

In the year 2000, the number of housing units in the City of Redding totaled 33,800. The City of Redding General Plan has a residential holding capacity, based on the mid-point of each residential density range, of approximately 220,000 persons. Based on a factor of 2.5 residents per household, at ultimate development, the City would have approximately 88,000 residential units, which are 54,200 more than in 2000.

There is a sufficient amount of residential land available to accommodate future Project employees and their families. The General Plan considered the level of development advanced by the Proposed Action since the amount of residential designated land is to accommodate the additional commercial, industrial, and general growth in the City of which the development of Proposed Action was taken into account by the amount of industrial designated land.

6.1.1.3 Attracting Employees From Out of the Area

One of the issues raised with regard to growth inducement is that the potential new employment opportunities will attract people who reside outside of the area, in this case, outside of Shasta County. Often this is the case in urban areas such as the Bay Area and Sacramento areas. However, based on review of recent manufacturing employers and a workforce report prepared in October 2003 for the Private Industry Council, this may not occur in the Shasta County and the City of Redding.⁵

Knauf Fiberglass in the City of Shasta Lake constructed a new plant and began operations in 2000 with a workforce of 145 employees. Of the total employees, three came from other Knauf operations and only two employees, one from Trinity County were from outside Shasta County. Therefore, 96.6 percent of the Knauf Employees were from inside the County. Interestingly, there were no employees from Tehama County. Of the 145 employees, seven constructed new homes in the area. Therefore, the total growth inducement was 4.8 percent.⁶

Chatsworth Products, another manufacturer who constructed a new facility in 2001 started with 35 full time and 15 temporary employees. Only two full-time employees were from outside the area. One was from North Carolina and the plant manager was from Tennessee. Twelve employees purchased new housing from the existing housing stock. This represented 34.3 percent of the total full-time employees and 24 percent of the total employees.⁷

The Pathfinders Workforce Report provides an insight as to why these two companies may be representative of this local phenomenon where local residents fill available new employment positions. The following discussion is extracted from the Report.

⁵ The Pathfinders. October 2003. *The Shasta County, California Workforce Report*

⁶ Personal communication on July 26, 2004 with John Sabol, original Knauf Plant Manager.

⁷ Personal communication on July 26, 2004 with Dennis Madarios, previous Human Resources Director and subsequent plant manager for Chatsworth Products.

Shasta County has an estimated total civilian labor force of approximately 82,000 people. The county, referred to in the report as the “labor shed”, contains approximately 5,800 unemployed people who are seeking work.

While the unemployed may be considered a potentially good source of employees, the type of quality employer that the labor shed is attempting to attract typically does not rely on the unemployed to staff a new operation. Consequently, The Pathfinders was retained to quantify the extent to which underemployment exists in the county, as well as to document the cost, skills, experience, and education of that hidden workforce.

Published government statistics report wages and employment for the entire workforce of a county, even though most of this workforce has no interest in changing jobs. The report prepared by The Pathfinders, however, includes data only on those people in the county who might change jobs and who therefore, would be potential candidate workers for a new employer.

The results of the assessment determined that in addition to the 5,800 unemployed individuals in the labor shed, approximately 8,000 workers could be defined as underemployed: those individuals who would take a better job if offered by a new or existing employer and who possess the skills, education, and experience to qualify them for a better job. Of these underemployed workers in the labor shed, 2,300 would change jobs for \$10.99 per hour or less, and 50% of them would take a new job for \$14.15 per hour or less.

Additionally, 43% of these underemployed workers have some college experience; 12% have associate degrees; and, another 14% have earned four-year college degrees or higher. As these data relate solely to those individuals in the labor shed who are underemployed, they will vary from data representative of the population as a whole.

Site searches to identify the optimum location for new facilities have been conducted by The Pathfinders for such clients as AT&T, DuPont, Celanese, 3M Corporation, IMC Global, AIG, Ciba-Geigy, and others of a similar stature. The availability of workers is a critical factor in selecting a location for a new operation, and a workforce analysis has been a key component of the site searches conducted for these corporate clients.

In the workforce assessment, The Pathfinders conducted telephone interviews with individuals throughout the labor shed. Those individuals were stratified across age (19 - 54 years), gender, household income (up to \$100,000), local telephone exchanges, and zip codes. The purpose of these interviews was to ascertain availability for work with a new employer; to determine desired pay rates; and, to collect information on such factors as age, education, commuting patterns, experience, and skills. Sufficient surveys were completed with individuals to produce results for that entire population group, which vary, by no more than plus or minus 5 percentage points. At that level of variance, the 8,000 people identified as underemployed might actually be as many as 8,400 (plus 5%) or as few as 7,600 (minus 5%). If the survey were repeated 100 times, 95 times out of 100 the results would be the same as those resulting from a survey of the entire population.

The Pathfinders also applied a proprietary process to the analysis of the data to correct for invalid responses. As an example, those people indicating that they would take a new job but also indicating the desire for increased pay that is unreasonable are not counted in the results. This process considers that to be counted as underemployed, an individual must be currently employed and willing to take another job at a pay rate commensurate with personal skills, education, and experience.

Current pay alone is not the qualifying factor for underemployment status in this study. Individuals, for example, making \$6.50 per hour, possessing no high school degree or skills, and being in the workforce for less than one year may consider themselves to be underemployed but are not considered to be so in the report. On the other hand, education, skills, and experience may qualify the person making \$22.00 per hour as truly underemployed. The Report made the following findings:

- In addition to the unemployed in Shasta County, a new employer will be able to attract employees from an additional pool of about 8,000 potentially available workers who have indicated an interest in changing jobs.
- Those workers possess the skills, experience, and education to qualify them for the pay rates at which they would take a new job, and that defines them as “underemployed”.
- The pay rates they specify to take a new job are reasonable when compared to their existing pay rates. About 25 percent of those workers would take a new job for \$10.58 per hour or less. At the upper end, the 25 percent most qualified and experienced will command more than \$17.21 per hour.
- Roughly, 1,100 people, neither employed nor seeking work, might re-enter the workforce for the proper job.

The information presented in the Report covers those members of the workforce who are, by virtue of their underemployment, potential candidates for new jobs. Existing employers, or new employers recruited to Shasta County, typically will not depend heavily on the unemployed to staff a new operation or to fill vacancies in existing operations caused by turnover or expansions. Companies look to the ranks of people who are already employed but are seeking to better themselves.

Given recent employment trends, which were explained by the workforce report, the proposed Project should not attract significant out of the area persons to locate in Shasta County., thereby not being a growth inducement factor. There currently exists 8,000 potentially available workers plus another 1,100 persons, who are neither employed nor seeking work, who could re-enter the workforce. The 9,100 persons plus the unemployed (who could possibly fill the job vacancies created by the underemployed) could readily fill the majority of the 7,000 jobs created by the Project.

6.1.1.4 Infrastructure Expansion

Traditionally, economic and population growth is caused by the type of Project being proposed. However, the proposed Project will not increase the pressure to provide more housing in the region since the majority of employees will already reside in the area thereby not requiring new infrastructure for housing.

The off-site infrastructure needed for the development of Alternatives 1, 2, and 3 except for the electrical transmission lines will not serve any other potential projects due to the locations of the sites. An additional looped 115kV-transmission circuit and one substation are presently contained within the *Redding Electric Utility Master Electrical Plan* and would be developed without the Stillwater Business Park when electric loads in the area require the service.

Alternatives 1 and 2 do not provide for development of lands to the north, east, or south. Development to the west is constrained by Stillwater Creek and the Redding Municipal Airport. The property to the north will not be able to connect to the infrastructure facilities being proposed except for possibly the electrical transmission line. In addition, that property contains a significant amount of wetland complexes. Lands to the east along the northern half of the site are in the County and are comprised of large rural residential parcels where further subdivision is difficult due to leach field constraints in addition to existing residents not desiring smaller parcels. Land to the east along the southern portion of the site is also in the County is the Stillwater Plains Mitigation Bank for wetlands located on a portion of the Hawes Property. Lands to the south are primarily residential in nature and much of the land between Fig Tree Lane and the airport is being acquired for clear zones.

Alternative 3 also does not provide for development of lands to the west due to the 45 foot difference in elevation between the Churn Creek Bottom and the site. Lands to the south are developed with an electrical substation and rural residential parcels. To the east are industrial designated lands, which would benefit from the extension of sewer lines which has already been planned for.

The proposed Project does not induce growth by creating and/or expanding infrastructure that has not already been planned for. The majority of the infrastructure required by the project has already been master planned by the City to occur due to the projected growth envisioned in the City's General Plan. This includes, but is not limited to; road widening and extensions, electrical transmission lines, sewer collection lines and treatment facilities, and water supply and distribution systems.

CHAPTER SEVEN

SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Public Resources Code Section 21100(b)(2)(A) requires an environmental impact report to include a detailed statement setting forth any significant effects on the environment that cannot be avoided if a project is implemented. CEQA Guidelines Section 15126.2(b) states that such impacts include those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications, and the reasons why the project is being proposed, notwithstanding their effect, should be described. The existence of a significant and unavoidable environmental impact does not necessarily mean that a project must be denied. Section 15903 of the CEQA Guidelines allows the decision-making agency to determine if the economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable environmental impacts. If the agency decides to approve the project, it must prepare a Statement of Overriding Considerations setting forth the specific reasons to support its action, based on the final EIS/EIR and/or other information in the record. Significant environmental effects that cannot be avoided for all the Project Action Alternative sites include:

Alternative 3 – Drainage

Development of the portion of the Alternative 3 area that is located within the watershed of Churn Creek will increase the frequency, rates, and volumes of storm water runoff discharged onto the lower terrace area separating the project from Churn Creek when compared to existing conditions. Given the absence of storm water conveyance facilities to deliver runoff in an appropriate manner to Churn Creek within the lower terrace area, the increase in runoff will increase flooding and ponding problems along the lower terrace area. This impact is considered to be significant.

Even though parcel and or area specific detention facilities will be required, the design and construction of a facility to convey post-development peak flows directly to Churn Creek across the ACID drainage ditch will be required as mitigation to reduce potential significant impacts to below a level of significance. However, implementation of the measure may be difficult and could result in an unavoidable adverse impact that may not be feasibly mitigated.

A Statement of Overriding Considerations will be required to be prepared and adopted if this Alternative site is selected.

Alternatives 1, 2, and 3 – Air Quality

Regardless of which Project Action Alternative site is selected, air quality impacts could be significant. Specifically, the maximum potential square footage for an individual parcel for each land use category (general industrial, light industrial and professional office) was evaluated for construction, operational and mobile source emissions. The Project has the potential to result in construction emissions of ROG and NO_x (ozone precursors) that are higher than the Level B thresholds and are therefore considered to be significant. Recommended mitigation measures may reduce emissions to below thresholds in all cases except possibly for the largest possible industrial building. A Statement of Overriding Considerations will be required to be prepared and adopted for construction related NO_x emissions regardless of the Alternative selected.

Stationary source emissions cannot be estimated without the data that would be provided as part of a permit application. Estimating emissions for a potential use category such as “electronics manufacturing and/or assembly” or “food processing” (two of the potential uses cited by an independent research firm) is not possible without specific use, the process involved, associated equipment information, and operations. It is possible that some of the potential uses will have insignificant emissions and some will have significant

emissions. It appears likely that Plastic Foam Products, Printed Circuit Boards, Surgical Appliances and Supplies, and Miscellaneous Electronic Products have the highest potential to contribute a significant amount of emissions. It is recommended that the City compare potential area and mobile source emissions plus additional stationary source emissions for each permit application to determine mitigation measures, the need for air quality studies, and the possible payment of offset fees.

CHAPTER EIGHT

LIST OF ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius
°F	Degrees Fahrenheit
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ADT	average daily traffic
af	acre-feet
afa	acre feet annually
Alternative Site	Alternative Site Study Area
AM	morning
AN	Areas of shallow flooding
AO	Areas of shallow flooding
APE	Area of Potential Effect
APN	Assessor's Parcel Number
BA	Biological Assessment
BA/EFHA	Biological Assessment/Essential Fish Habitat Assessment
BEA	U.S. Bureau of Economic Analysis
BFE	Base Flood Elevation
BIA	U.S. Bureau of Indian Affairs
BLM	U.S. Bureau of Land Management
BOR	U.S. Bureau of Reclamation
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CD	Community Development
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CED	Center for Economic Development
CELSOC	Consulting Engineers and Land Surveyors of California
Census	U.S. Bureau of the Census
CEQ	President's Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHP	California Highway Patrol
CNDDDB	California Natural Diversity Database

CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
Commission	California State Fish and Game Commission
Corps	U.S. Army Corps of Engineers
County	Trinity County
CRA	California Resources Agency
CRHR	California Register of Historic Resources
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
dB	logarithmic decibel
dBA	“A-weighted” decibel scale
DCCSD	Douglas City Community Services District
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
D'TSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EDD	California Employment Development Department
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
e.g.	for example
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESL	Environmental Study Limit
ESU	Evolutionary Significant Unit
et al	And others
et seq	The following ones
Fed Ex	Federal Express
FEIS/EIR	Final Environmental Impact Statement/Environmental Impact Report
FEMA	Federal Emergency Management Agency
FH	Flood Hazard
FHO	Flood Hazard Overlay
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
ft	feet
ft ²	square feet
ft ³ /s	cubic feet per second
GIS	Geographic Information Systems
HUD	U.S. Department of Housing and Community Development
i.e.	that is
IS	Initial Study
ISMS	Interagency Species Management System

ITA	Indian Trust Asset
L _{dn}	day-night average sound level
L _{eq}	equivalent noise levels
lbs	pounds
m	meter
MBTA	Migratory Bird Treaty Act
maf	million acre-feet
MCE	Maximum Credible Earthquake
MCL	maximum contaminant level
MDB&M	Mount Diablo Base and Meridian
ml	milliliters
MMRP	Mitigation Monitoring and Reporting Program
MOU	Memorandum of Understanding
mph	Miles per hour
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NO _x	Nitrogen Oxide gases
NO ₂	Nitrogen Dioxide
NOD	Notice of Determination
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NR	Natural Resource
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NSR	North State Resources, Inc.
O ₃	Ozone
OES	Office of Emergency Services
ORV	Outstanding Remarkable Values
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
Pb	Lead
PCB	polychlorinated biphenyl
PM	night
PM _{2.5}	fine particulate matter (particulate matter less than 2.5 microns in aerodynamic diameter)
PM ₁₀	particulate matter less than 10 microns in aerodynamic diameter
ppm	parts per million
Project	Stillwater Business Park Project
Q	flow rate (typically expressed in cfs)
Q ₅₀	50-year flood flow
Q ₁₀₀	base or 100-year flood flow
Q _{max}	Maximum unobstructed flow

Q _{MCR}	Maximum Controlled-Flow Release
RM	River Mile
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
RPM	reasonable and prudent measures
RR	Rural Residential
RWQCB	California Regional Water Quality Control Board
SCH	State Clearinghouse
SEIS	Supplemental Environmental Impact Statement
SHPO	California State Historic Preservation Officer
SLC	California State Lands Commission
SO ₂	sulfur dioxide
SMARA	Surface Mining and Reclamation Act
SRA	shaded riverine aquatic
STNF	Shasta-Trinity National Forest
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCLP	Toxicity Characteristic Leaching Procedure
TL-2	Test Level 2 full-scale crash-test criteria
TMDL	Total Maximum Daily Load
TOD	Top of Deck elevation
TRPH	total recoverable petroleum hydrocarbons
USC	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UPS	United Parcel Service
VE	Value Engineering
VRM	Visual Resource Management
WA	Watershed Analysis
WCB	California Wildlife Conservation Board
WDRs	Waste Discharge Requirements
WSRA	Wild and Scenic Rivers Act

CHAPTER NINE

LEAD AGENCY, CONSULTATION, AND REPORT PREPARATION

Lead Agency

The City of Redding is acting under its authority as the responsible entity for compliance with NEPA in accordance with 42 U.S.C. 3547© under U.S. Department of Housing and Urban Development regulations at 24 CFR 58.4 and under its authority as lead agency in accordance with CEQA.

Cooperating Agencies

The U.S. Environmental Protection Agency and U.S. Army Corps of Engineers are cooperating agencies. The U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration – Fisheries were also invited to serve as cooperating agencies.

Agencies Consulted

City of Anderson Planning Department
City of Shasta Lake Planning Department
Shasta County Department of Resource Management
 Planning Division
 Air Quality Management District
Shasta County Department of Public Works
Shasta County Local Agency Formation Commission
California Department of Fish and Game
California Department of Transportation
California Department of Transportation – Division of Aeronautics
California Employment Development Department
California Regional Water Quality Control Board – Central Valley Region
Economic Development Corporation of Shasta County
The Smart Business Resource Center (Formerly the Private Industry Council)
U.S. Department of Transportation – Federal Aviation Administration
Western Shasta Resource Conservation District

City of Redding

Randy Bachman, Deputy City Manager
Nathan Cherpeski, Management Assistant to the City Manger
John Keaney, Planner Manager
Barry DeWalt, Assistant City Attorney
Gary Otremba, Land Development Manager
John Abshier, Associate Civil Engineer
Jon McClain, Design Manager
David Braithwaite, Associate City Engineer
Kent Manuel, Senior Engineer
Mike Robertson, Water Utility Manager
Steve Craig, Wastewater Utility Manger
Rod Dinger, Airport Manger
Pat Keener, Electric Services Manager
Bruce Russell, Distribution System Manager
Renius Owen, Electric Program Supervisor
Ron Hofer, Electrical Engineer
Dave Dawson, Consultant
Frank Sawyer, Consultant Sharrah Dunlap Sawyer, Inc.

Bob Morrison, Consultant Morrison Structure, Inc.
Michael Mitchell, Economic Development Director (No longer affiliated with the City)

Diaz Associates Consulting Team

Diaz Associates

Eihnard F. Diaz, AICP, Principal
Sue Bienias, Administrative Assistant
Susan Evan, Research Assistant

North State Resources

Tim Reilly, Principal and Project Manager
Ginger Bolen, Wildlife Biologist/Environmental Analyst
Charles Shoemaker, GIS Analyst
Boggs, C., Botanist/Plant Ecologist
Bolen, G., Boyd, A., Wildlife Biologist/Environmental Analyst
Carlson, M., Botanist/Plant Ecologist
Carpenter, C., Environmental Analyst
Colescott, J., Wildlife Biologist/Environmental Analyst
Hampton, M., Fisheries Biologist
Kelly, H., Wildlife Biologist/Environmental Analyst
Lanning, W., Senior Wildlife Biologist/Environmental Analyst
Lindstrand, L., Senior Wildlife Biologist/Environmental Analyst
McDonald, K., Technical Editor
Marine, K., Fisheries Biologist
Mikklesen-Rose, K., Environmental Analyst
Shoemaker, C., GIS Analyst
Wuestehube, M., Wildlife Biologist/Environmental Analyst
Youngblood, K., Environmental Analyst

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Joe Weiland, Principal/Project Manager
Paul Miller, Associate/Project Manager
Keith Mullnix, Associate/Project Manager

Lawrence & Associates

Bonnie Lampley, President/Senior Hydrogeologic
Clayton Coles, Vice-President/Certified Engineering Geologist
Brian Gartner, Certified Engineering Geologist

Earth Matters, Inc.

Kamala Barbara Joy

Jensen & Associates

Peter Jensen
Shaun Jensen

Hydmet, Inc.

John H. Humphrey Pd.D., P.E.

Bollard & Brennan, Inc.

Paul Bollard